Deloitte.

Ex-ante evaluation of a successor of the “Intelligent Energy – Europe II” (2007-2013).

Final report

European Commission, DG Energy

June 8, 2011

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1.Executive summary

The Directorate General for Energy is preparing the proposal of the Commission for a successor to the current multiannual programme in the field of energy, the "Intelligent Energy - Europe II" (IEE-II 2007-2013), to cover the period 2014-2020.

The proposal for the new programme has budgetary and resource implications, such that a combined ex ante evaluation and impact assessment must be performed to obtain approval for it.

As part of its preparations, the Commission has asked Deloitte to assist with the combined ex ante evaluation and impact assessment.

This final report is the outcome of the contract mandating Deloitte to do so, signed by the European Commission and Deloitte on 03/11/2010. It presents the input to the combined impact assessment and ex-ante evaluation of a successor to the IEE II programme resulting from a study conducted between November 2010 and April 2011whose purpose was to:

- Provide arguments, and supporting evidence – quantified wherever possible – and based on elements of a public consultation to the extent this is relevant and possible - as input to the final impact assessment to be drafted by the Commission.

- Give a view on what the potential IEEII successor programme could look like taking into account that the barriers to adoption of energy efficiency and renewable energy sources that were the basis of the adoption of IEE II, and the corresponding EU policy position, may no longer be the same as they were for IEE II. A shift of focus in actions for a successor to IEE II could therefore be necessary.

The report is based on data collected through four surveys and several interviews with programme stakeholders as well as data collected from the Executive Agency for Competitiveness and Innovation (EACI) and European Investment Bank (EIB) project management databases. It is moreover based on research and review of existing analyses within the area of sustainable energy development in the EU. These inputs were combined in qualitative and quantitative analyses of the defined policy options for a potential successor to the IEE II programme. As is the case with all forward-looking assessments, this impact assessment of a potential successor to IEE II takes departure in existing experiences with the current programme (as the final evaluation of IEE II was carried out in parallel it has not been possible to leverage all material coming from this evaluation but efforts were made to maximise this). The analysis projects these experiences into the future by taking into account expected evolutions of the IEE II context by 2014.

The report is moreover structured according to the defined logical steps for European Commission (EC) impact assessments. It starts by identifying the problem and determining the need for a potential successor to the IEE II programme, before identifying the full scope of objectives for such a potential successor and assessing the impacts of different options for the potential successor within this scope. The report finally provides conclusions and recommendations on the options for a potential successor and in general, as input to the Commission's impact assessment. The main outcomes of the study are presented hereunder.

What is the problem?

Energy is vital to economic activity and social welfare in the EU. If Europe is to achieve its economic, social and environmental objectives, it must address its major energy-related challenges of sustainability, security of supply and competitivity, and reduce its dependency on imported fossil fuels so as to provide its economy with sufficient adequately priced energy without negatively impacting the environment. While significant efforts have been consented, there has been insufficient investment in sustainable energy to date to reach the EU's main objectives in sustainable energy (the "20/20/20" objectives).

Besides mobilising the needed investments, addressing the needs for the development of sustainable energy must be done bearing in mind the continuum of activities from research and development of new sustainable energy technologies through to market deployment of existing and future technologies and solutions, and the needed synergies between the different activities in this continuum. Market failures across the continuum creating barriers to the development of sustainable energy must all be tackled, and tackled coherently including those related to lacking or asymmetric information, insufficient capacity, insufficient financing, distorted prices, and administrative inefficiencies. Since 2007, the IEE II has addressed the non-technological barriers to the development of sustainable energy in the EU. Given the continued need for sustainable energy programmes at EU level, and particularly to address key barriers most effectively handled at this level such as those which it is unique in tackling (related to insufficient information, capacity and financing), there is clearly a need for a successor to IEE II. A potential successor programme must moreover be coherent and integrated with other EU initiatives in sustainable energy to produce optimal results.

What are the policy objectives?

IEE II is the successor to IEE (2003-2006) and inherited many of its objectives from this programme. As a constituent programme of the Competitiveness and Innovation Framework Programme (CIP), IEE II's objectives and scope are defined in the CIP decision[1]and are to support the overcoming of non-technological barriers (including informational, behavioural, institutional and financial barriers) to the innovation, uptake, implementation and dissemination of solutions that contribute to sustainable, secure and competitively priced energy for Europe, otherwise put:

- *"to foster energy efficiency and the rational use of energy resources";*
- *"to promote new and renewable energy sources and to support energy diversification";*
- *"to promote energy efficiency and the use of new and renewable energy sources in transport".*

As these objectives remain relevant until 2020, they should also form the basis of the objectives of a potential successor to IEE II, as should the different components of the programme (promotion and dissemination projects (P&D), market replication projects (MR), concerted actions (CA) and tenders).

[1] Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme (2007 to 2013)

Nonetheless, certain adaptations could be made, and it would certainly be useful to formulate the programme's objectives in terms of the priority areas that the future programme should focus on, for example:

- Awareness raising.
- Building capacities and skills.
- Facilitating policy implementation.
- Creating favourable market conditions.
- Preparing the grounds for new investments.

The above scope and objectives take into account the full scope of potential IEE objectives, independently of the fact that a potential successor to IEE II would not necessarily cover this full scope, but might focus on a more limited perimeter considering the available means, and based on the expected effectiveness and efficiency of such an approach. They should therefore not be taken as such as the objectives of a successor to IEE II, but rather as the envelope within which these objectives could be defined.

As a small part of the overall EU response to its needs in sustainable energy, a potential successor to IEE II should be integrated coherently with other EU initiatives in sustainable energy development taking into account that while it should be unique in addressing certain non-technological market failures, it must equally bear in mind that these failures are linked to others which are tackled by numerous other existing and future EU initiatives.

IEE II was designed with attention to offer possibilities for such synergies, e.g. with the Framework Programme for Research and Development (FP7) and the Structural and Cohesion Funds (SF/CF), and was specifically placed within CIP (and under management of the EACI) to benefit from further management synergies. While some such synergies have been observed, they seem to have been insufficient, and this will likely be the case until 2014 given a number of barriers to further synergies. It is difficult to project ourselves into and beyond 2014, both with regards to IEE, and to the main programmes with which IEE interacts, but we assume that programmes like the FP7 and SF/CF will be continued, and will have broadly similar objectives and roles to those of today. In all cases the need for improved synergies is widely acknowledged, and given the relatively small size of IEE, being coherent and synergising with the other elements of the greater overall sustainable energy framework is paramount to achieve success irrespectively of the policy option followed for the programme. For this, a potential successor to IEE II should better exploit synergies with the downstream Structural Funds/Cohesion Funds for mobilising investments, and develop its links within and beyond the CIP, in which it can be coherent if this is successfully done (e.g. by developing sustainable energy eco-innovation).

To achieve its objectives, and bearing in mind that the current period is pivotal in the development of sustainable energy (with limited time remaining till 2020), a potential successor to IEE II should contribute to achieving the EU's sustainable energy targets for 2020 both through having SMART objectives and maximising its external synergies and internal coherence and synergies. This could perhaps be built around a roadmap to 2020 for the programme adding the notion of timing to the programme's objectives.

Which are the policy options?

The bulk of the IEE II budget (727,3 mEUR for the period 2007-2013) has been dedicated to over 200 relatively small promotion and dissemination projects to date led by different consortia of organizations from minimum three countries, but it has also been used to fund initiatives to improve the implementation of sustainable energy legislation in Member States (concerted actions) based on the relevant EU legal framework, as well as tenders feeding the Commission's sustainable energy policy work, and more recently, to provide technical assistance to investment projects in Renewable Energy Sources (RES) and Energy Efficiency (EE) in groups of municipalities (so-called market replication projects aiming to replicate good practices and thereby stimulate investments in sustainable energy). Within this overall programme budget, the annual operational budgets of the IEE II programme have increased from 65 mEUR in 2007 to over 104 mEUR in 2011.

Based on the EC's original suggestion of policy options for a potential successor to IEE II and further elaboration and analysis of the potential options taking into account the available data on the programme's performance to date, Deloitte has, in consultation with the EC, formulated four policy options that have been analysed within the scope of the combined ex-ante evaluation/impact assessment. The options taken into account should not be considered as the full range of possible options for a potential successor to IEE II, but rather as indicative options with distinct effects based on which an optimal combination could potentially be found depending on the policy orientation taken.

Besides the baseline option to continue the programme in its current form (policy option 2) and that of abandoning the programme as a whole (policy option 1), the options include a capacity-building oriented programme (policy option 3) and an investment oriented programme (policy option 4) both entailing a slight increase to the programme budget. It should be noted that given that IEE II has been unique in addressing non-technological barriers to the development of RES and EE at EU level, it is likely that option 1 - abandoning the programme as a whole - would lead to an absence of such activities at EU level, while options 3 and 4 would probably lead to a slight overall increase in such activities.

The capacity-building oriented programme (policy option 3) has a strong focus on the priority areas of facilitating policy implementation, awareness raising and building capacities and skills.

It has the following characteristics:

- High focus and budget allocated to facilitating the implementation of EU policies aiming at sustainable energy qua the use of promotion and dissemination projects and tenders.
- High focus and budget allocated to facilitating the implementation of EU policies aiming at sustainable energy qua the use of both tenders, concerted actions and promotion and dissemination activities.
- High focus and budget allocated to capacity building qua the use of promotion and dissemination projects and tenders.

On the other hand, the investment-oriented programme (policy option 4) focuses on the priority areas of creating favourable market conditions and preparing the grounds for new investments. It has the following characteristics:

- High focus and budget allocated to creating favourable market conditions for innovative energy technologies, both on the demand side and supply side.

- High focus and budget allocated to preparing the grounds for new energy investments. This would be carried out through both market replication projects and promotion and dissemination projects including specific key actions for targeting and supporting well-defined energy investments (like the Mobilising Local Energy Investments (MLEI) key action which was launched in the 2011 work programme and aims to support projects in providing technical assistance to mobilise local energy investments).

- Some focus and budget allocation to awareness raising but less than under the current programme (one possibility would be to reserve budgets mainly for projects within the new member states where basic capacity building is more needed).

- Some focus and budget allocation to capacity building and facilitating the implementation of EU policies aiming at sustainable energy – but less than under the current programme.

The investment oriented programme is not to be construed as a large scale investment grant programme which would require budget of an entirely different magnitude than the current IEE II programme, and for which the market may not yet be sufficiently ready due to remaining barriers (it should indeed not be considered that large scale deployment of sustainable energy investments is simply a matter of providing financing). Yet, by changing focus towards creating favourable market conditions on the supply side on the one hand, and preparing the grounds for new investments through projects with a strong focus on market replication, on the other hand, it might be possible to leverage significant additional energy investments without raising the budget to an unacceptable level. This would be linked to increased promotion and dissemination of project results which could help to speed up market replication that would naturally not be automatic or directly linked to available budgets, given remaining barriers. It might also imply that IEE market replication projects find their niche in terms of the type of underlying investment projects best supported by such a programme, especially in terms of stimulating the development of further independent similar investments. Upcoming results of projects under the three existing ELENA facilities should be used to inform such a decision.

What are the likely impacts?

Evidence on the impacts of promotion and dissemination projects indicates that, despite their rather limited budget (compared for example to the framework energy research programmes, the regional funds for energy investments and the recently established European Energy Efficiency Facility (EEE-F) funds) they provide a valuable contribution to achieving the EC objectives relating to sustainable energy. In particular, they fill gaps and build bridges between the upstream R&D&T energy innovation and the downstream market adoption through direct investments in new innovative energy solutions, essentially by uniquely tackling non-technological barriers to this market adoption. In this respect, and through their dissemination activities, the more successful projects may have long-lasting, high leverage effects far beyond their original limited scope. Moreover, promotion and dissemination activities at the European level will often be more cost effective than similar activities at the national level which, by nature, have a more limited reach and impact and do not have the same opportunities for discovering best practices across a broader pool of experiences.

Yet, because of their soft, intangible nature, P&D projects face problems with respect to monitoring and disclosing of the actual impacts. This makes it difficult to ensure continuous improvements within the P&D programme, since the basis is too limited to identify how to devote focus and budget to the more effective parts of the programme. These problems may also be an important reason why the P&D projects still face a rather limited budget and a declining budget share of the overall IEE programme despite the wide recognition of success stories on a case by case basis and the wide agreement on the continuous need for the instrument.

Furthermore, the impact assessment carried out has shown that certain adaptations to the focus may improve the future impacts of the P&D programme:

- The marginal returns from awareness raising activities are probably not as high as in the beginning of the programme although there may still be areas where it is relevant, and in particular some activities may be more relevant in the new Member States than in the old ones.

- Given the difficulties Member States face in implementing sustainable energy policies, including EU legislation in the field, there is still a great need for projects that focus on facilitating policy implementation. Projects of this type have been considered as successful in the past, and are expected to provide high marginal returns in the future.

- Within the P&D programme, there has been increasing focus on projects that go beyond the traditional awareness raising and capacity building projects in terms of creating more favorable market conditions for innovative solutions on the supply side and even further in terms of preparing the grounds for new investments. However, the budget for such projects is still relatively low, and they may still lack sufficient focus, and links to other programme components and programmes to exploit the significant potential for creating downstream effects. Hence, there are indications that more focus, links, and budgets to the latter kinds of P&D projects in the future could increase the marginal returns of the P&D programme instrument.

There is limited evidence on the effects of tenders from recording, tracking and monitoring activities. The general view among interview respondents is that tenders fulfil important roles – especially in providing studies which are used to improve the administration of the IEE and in providing other kinds of support to facilitate the implementation of EU directives within the area – and therefore should still be part a of the IEE programme. Moreover, tenders provide support to awareness raising and dissemination activities, for which central programme support could be further developed. Nonetheless, some stakeholders point to the lack of transparency and communication of tender projects and mention that the budget for tenders could be reduced.

Concerted actions are particularly relevant in addressing administrative barriers to energy efficiency improvements because they bring together civil servants (or their representatives) from Member States to discuss the administrative barriers, exchange best practise solutions and identify needs for further community action via a confidential forum. Hence, the concerted actions are indeed considered a relevant instrument that should be continued in a successor to the IEE II programme. The actions address a challenge, which studies have pointed out to be important in order for the European policies to be optimally implemented. Stakeholder interviews support this view,

and there is general agreement that the actions are valuable although communication about this programme element is limited due to the confidential nature of the actions.

Given the short period with active European Local Energy Assistance facility (ELENA) projects – under a year since the signature of the first contracts -, an assessment of their impacts is still mainly based on expectations. The low availability of financial resources for investments in sustainable energy is both the main reason for applying for ELENA support, and the biggest risk that targets of ELENA projects will not be realised. Thus, while ELENA beneficiaries claim that some of the underlying investment projects supported by ELENA might be expected to be realised without ELENA funding, this would most likely be with a non programmatic approach (i.e. much smaller scale and more fragmented investments) and a longer horizon, if at all, as such changes to the scale and timing of the investments might put their bankability at risk. This indicates that ELENA stimulates activities which would certainly not have taken place with the same scope and ambition without such funding. The value of the services provided by ELENA is generally considered to be significant, as all services are expected to give some or high added value and as they provide an important contribution to leverage large-scale energy investments rapidly which, if realised, will have high and measurable environmental and economic impacts. Given the early stage and current progress, the project managers are relatively optimistic about the realisation of the project targets, most of which are expected to be realised on time or with minimal delays.

For a potential successor to IEE II, ELENA might need to find its niche in terms of the type of underlying investments to support, probably best linked to providing support independently of downstream financing of underlying investments and to the ability for similar independent investments projects to follow these. Results from the three current facilities in which different approaches are being piloted should serve to confirm such an orientation.

ELENA projects are by definition market replication projects although certain stakeholders point out that they represent only a part of what can be considered as market replication, namely project development assistance. If the IEE programme intends, in the future, to pursue market replication activities covering the full spectrum of market replication activities, the ELENA facilities could be supplemented for that purpose. Sustainable energy related eco-innovation could be one such extension to the current market replication programme along with development of the P&D programme administered by the EACI to include investment oriented priority areas oriented towards market replication activities such as the MLEI key action, and strong synergies to other EU initiatives taking up the larger-scale investment commitments.

Options comparison

The ex-ante impact assessment of the policy options focuses on the marginal benefits and costs of the three policy options which diverge from the status quo, that is, non continuation, a capacity building oriented programme, and an investment oriented programme. For each of these three policy options, the marginal benefits, marginal costs and marginal returns (i.e. cost effectiveness including consideration of synergies with other programmes) have been assessed, although for a number of identified costs and benefits it has not been possible to determine the monetary value.

As part of the study we have performed a rating of respectively marginal costs and benefits that are expected to arise by changing from the current form of the programme to either abandoning the programme (no continuation) or to a successor of the IEE II programme which is either more ca-

pacity-building oriented or more investment oriented. The rating and the summary text in the table below is an expression of our overall qualitative assessment, which is based partly on available quantitative data (surveys and project data), and partly on more qualitative evidence (interviews, workshop, qualitatively oriented survey questions and desk research).

Our overall rating of costs and benefits range from:

- minus 5 (÷ ÷ ÷ ÷ ÷) to 0 in the case of costs
- 0 to plus 5 (+ + + + +) in the case of benefits

The comparative impact assessment shows that there are strong indications that continuing the programme in its current form (policy option 2) entails higher net benefits than not continuing the programme (policy option 1). Looking at the environmental benefits they alone appear to be higher than the costs of the entire programme, and in addition it has significant economic and social benefits and synergies with other EU programmes (which perhaps could be better exploited but they are nevertheless substantial). Moreover, there are strong arguments that the programme activities are more rational to pursue at the EU level than at the national level.

However, continuing the programme in its current form does not necessarily appear to be the best policy option. The analysis and impact assessment have shown that increasing marginal returns from the IEE funding might be achieved by allocating more focus and budget to P&D projects and concerted actions that facilitate policy implementation which is achieved without reducing the other programme elements in the capacity-building oriented programme (policy option 3). The impact assessment has also shown that another fruitful way to increase marginal returns from IEE funding would be by allocating more focus and budget to P&D projects and market replication projects that create more favourable market conditions and prepare the grounds for new investments. This is realised under the investment oriented programme (policy option 4) which, on the other hand, reduces the focus and budget for P&D projects that contribute to raising awareness and building capacities and skills.

Both of these options would imply a somewhat higher budget than under the current programme if implemented in the proposed form (the highest budget would be required for the more investment oriented programme). Yet, the additional benefits seem to outweigh the costs in both cases compared to the status quo.

Whether policy option 3 or 4 should be the preferred option depends especially on the following factors:

- The weights that the policy-makers attach to the environmental, economic and social impacts of the options, and how their expected timing and probability of being measured and realised are weighted.
- Whether it is believed that in its next phase, the IEE programme will add most value by focusing more downstream and on the supply side of the innovation life cycle, or that this should be left almost entirely to other EU programmes whereas the IEE programme should stay more in the background of the innovation life cycle and focus mainly on facilitating implementation of sustainable energy policies and building further institutional capacities in the area.

Final comparison of the marginal impacts (costs and benefits) of the policy options

	No continuation (option 1)	Capacity-building oriented programme (policy option 3)	Investment oriented programme (policy option 4)
Marginal budgetary costs/benefits	**Benefits: + + +** • Saved costs (grants and administration) of entire programme ≈ 110-120 mEUR p.a. • Saved administration costs for the applicants and beneficiaries	**Costs: ÷** • Additional budget of ≈ 20 mEUR p.a.	**Costs: ÷ ÷** • Additional budget of ≈ 40 mEUR p.a.
Marginal environmental costs/benefits	**Costs: ÷ ÷ ÷ ÷ ÷** • Less CO_2 reductions and energy-savings. Up to12 mio. tons of CO_2 eq. p.a . will be forgone which is worth at least 240 mEUR p.a. and probably more	**Benefits: + +** • Improved implementation of EU legislation in the sustainable energy area.The marginal environmental impacts of this could potentially be very high but they are rather indirect and hard to measure • Better awareness of the IEE programme and related EU funds for energy investments achieved through focused tenders and hence more and better open call applications and more ELENA projects being realised	**Benefits: + + +** • Creating more favourable market conditions on the supply side in combination with providing more direct stimuli to energy investments is expected to have high, measurable impacts on the level of energy-savings and CO_2 emissions • The environmental impacts could be further augmented if more is done to improve the dissemination of each market replication project **Costs: ÷** • Although they have decreasing returns to scale, less focus/budget to awareness raising and capacity building projects would reduce certain long-term environmental impacts
Marginal economic costs/benefits	**Costs: ÷ ÷ ÷** • Reduced investments in innovative energy technologies and solutions. A reduction of 0,75-1,5 bnEUR p.a. in the ELENA part. Probably a similar reduction in the P&D part. • Less growth as consequence of reduced investments	**Benefits: ≈ 0** • Marginal economic benefits are expected to rather limited as the type of projects that are promoted under a capacity-building programme do normally not give rise to high economic benefits (except in very indirect ways)	**Benefits: + +** • Creating more favourable market conditions on the supply side in combination with providing more direct stimuli to energy investments is expected to have high and partly measurable impacts on investment levels and economic growth . • An average leverage factor of at least 20 could be expected for new projects
Marginal social costs/benefits	**Costs: ÷ ÷** • Less social awareness of rational use of energy and less social/ institutional capacity for working towards sustainable energy. This has long-term negative environmental implications	**Benefits: +** • Marginal social benefits are expected to be high as the type of projects that are being promoted under a capacity-building programme normally give rise to high social benefits. • Yet, in general, decreasing returns to scale are expected for further capacity-building initiatives	**Benefits: ≈ 0** • Marginal social benefits are expected to rather limited as the type of projects that are promoted under an investment oriented programme do normally not give rise to high social benefits (except in very indirect ways) **Costs: ÷** • Less focus/budget to awareness raising and capacity building projects would reduce social impacts
Synergies with other EU progammes	**Costs: ÷** • Lost synergies from the gap that will emerge in the ecosystem of EU initiatives in the field • Potential loss of know-how and expertise	**Benefits: +** • Could ensure a greater scale of activity and critical mass in the capacity-building area thus allowing for better synergies with other EU progammes	**Benefits: + +** • Using part of the increased funding for improving the links and introducing conditionalities between investment oriented IEE projects and other EU programmes with direct investment grants may give rise to synergies **Costs: ÷** • By moving in a more investment oriented direction there is some risk of overlap with other EU funds (which however should be manageable)
Subsidiarity considerations	• Few chances that the IEE programme will be replaced by national initiatives and even if it would they would be less costs effective as dissemination and market replication works more effectively at the EU level	• There are clear advantages of EU level projects facilitating implementation of sustainable energy policies as opposed to national level projects • More EU level initiatives are needed in order to ensure critical mass and harmonisation	• Projects preparing the grounds for new investments could also be pursued at the national level, but their replication/ dissemination effects would be smaller • Projects creating more favourable market conditions on the supply side is relevant to pursue at the EU level due to the international character of the supply markets and supply chain

The question of the context of the innovation life cycle (upstream or downstream, demand side or supply side) in which an IEE programme dealing with non-technical barriers would be able to add most value in the future also depends on how other EU funding programmes for sustainable energy develop.

Since there are no other offerings for a capacity-building and policy implementation facilitation among other EU programmes in the area, and also very limited supplementing/alternative initiatives within the member states, there is a good case for pursuing a capacity-building oriented programme. This may à priori seem less true of investment oriented downstream actions, including project development services which currently exist and could potentially be focused or centralised in other EU programmes than IEE (it is beyond the scope of this analysis to conclude on which of the different EU programmes would be best suited to pursue such market replication projects but examples could include the EEE-F which encompasses project development services as well as financing and loan facilities). However, the key difference is that IEE remains independent of the actual financing and loan facilities which may be important for a significant proportion of investments. There is therefore a case for keeping and even expanding such activities within IEE by expanding the scope of the programme with respect to market replication facilities – e.g. under the investment-oriented programme – especially because of the valuable market replication expertise that has already been built within the IEE programme and because of the obvious synergies with promotion and dissemination activities which could be further exploited, although this would require an upscaling of these activities.

Another possibility would be to apply a combination of policy option 3 and policy option 4 as they are both expected to provide net benefits compared to just continuing the programme in its current form. Such a combination of policy option 3 and 4 would imply balancing facilitating policy implementation, creating more favourable market conditions and preparing the grounds for new investments. A strategy of this kind would require a more substantial budget increase unless the other priority areas (awareness raising and building capacities and skills) were further reduced than in policy option 4.

Monitoring and evaluation

Since consolidated programme monitoring data on the projects' actual impacts are not available in a form that allows for quantitative analysis, the impacts have been addressed in surveys sent to project partners/coordinators and EACI project officers.. On that basis, we suggest some improvements with respect to project target-setting and monitoring that may improve the possibilities for quantitative/econometric analysis of project impacts in the future. However, the problem cannot be resolved by merely improving the monitoring techniques and more dedicated measuring of progress. If the quantitative assessment of project impacts is going to be improved in the future, impact measurability and monitoring design will have to part of the criteria for the awarding of projects grants and a system for following up on the results after the termination of projects will have to be set up. It might have the implication that projects for which it is inherently impossible to measure the impacts will have lower priority in the future than those where it might be possible.

In order to facilitate the follow-up process, the formulated targets for each project should be registered in the project management database along with the results of the follow-up monitoring. Monitoring at the individual project level should, as a minimum, include the project managers' assessment of expected realisation rates for each target and a brief reason for the expectations. The expected realisation rates should be registered by the EACI in the project management data base along with other central information from the project monitoring.

Given the different nature of the projects, there will be differences in the number and character of relevant impact targets, and this should be taken into consideration. Projects within the priority

areas of facilitating policy implementation, awareness raising and capacity-building should not be obliged to set targets along the four official indicators, if it does not make sense, but should be allowed to work with other kinds of quantitative targets.

Other general conclusions and suggestions

Besides the conclusions of the comparative impact assessment and its possible implications for the future programme, a number of other suggestions for the future design of the programme have been formulated. The most important other general recommendations are:

- Reinforcing funding of awareness-raising campaigns with respect to the opportunities for energy investment support to attract more qualified project applications with high potential to the IEE programme and others, and hence improve conditions for the future programme performance. Interviews have indicated that the awareness of the P&D and the MR programme, and also awareness of the dedicated structural/regional funds for energy investments and their possible links with the IEE programme, can be further stimulated among relevant stakeholders throughout the European member states.

- Further developing synergies between IEE projects and EU programmes providing direct energy investments grants by ensuring management and communication links and possibly imposing more conditions on IEE project beneficiaries to share information and organise project activities in view of preparing applications for such grants.

- Increasing coordination and communication across the different IEE projects, for example by arranging common meeting places and events for the project partners, e.g. developing the contractor meetings currently performed. There is reason to believe that such cross-coordination could increase the dissemination effects of the individual projects. It should also be considered to grant more budget for communication and dissemination of results after the projects (or their other work packages) are completed.

For the promotion and dissemination programme instrument, the following improvements are suggested:

- Awareness raising projects (and perhaps also projects that build capacities and skills) should to a higher extent be prioritised and reserved for project coordinators in the new member states as there are general indications of decreasing marginal returns of such projects in the old member states. This should be seen in connection with the fact that the P&D programme has not yet been sufficiently successful in attracting applications led from new member states. Hence, in the future, it may be considered to design certain award criteria and announce certain key actions in order to increase the chances that a greater share of the P&D funding will be allocated to projects within the new member states. Moreover, tenders might be used with a view to awareness raising and training activities in order to stimulate more and better applications from the new member states.

- It should be considered to reintroduce energy agency projects as a key action. Agency projects under IEE II have been quite successful, leading to the establishment of a number of new local and regional agencies, but many of the established agencies still face challenges of implementing sustainable energy policies or supporting market actors. It could therefore be relevant to introduce a new agency-related key action which would be different from

that under IEE II in that it would mainly focus on providing support to established agencies to ensure their survival and a smoother transition to operating without EU support, rather than on the establishment of new agencies (although this could be considered in exceptional cases where there is a perceived insufficient coverage).

- The priority area of creating more favourable market conditions should include more market surveillance projects as several interview respondents have expressed that there is a strong need for better information of best practice innovative energy technologies that emerge from the R&D&T phase.

- For P&D project that prepare the grounds for new investments it would be obvious to consider introducing some kind of funding conditionality similar to the conditions applied in the case of ELENA projects, that is, rules requiring that some or all of the funding must be paid back in case a certain amount of the targeted investments are not realised.

For the ELENA programme instrument, the following improvements are suggested:

Increased funding in order to exploit the potential of the ELENA facilities providing much needed support for the small- and medium scale energy projects in local governments, besides the existing ELENA support to larger investments.The additional budget for ELENA projects (and also for new market replication type projects administrated by the EACI such as the MLEI projects) could also be spent on securing increased and better promotion and dissemination of knowledge gained from these projects to all relevant stakeholders, be they end beneficiaries, financial intermediaries, or ESCOs.

- There should be more obligations to communicate and disseminate the results and experiences of ELENA projects, perhaps linked to increased means to do so. Adequate incentives should then be included in the project contracts. Moreover, the responsible financial institutions should plan and facilitate settings where local governments/cities can share experiences, and take increasing responsibility for promoting new and viable products/services in this area.

2.Introduction

2.1 General introduction

The Directorate General for Energy is preparing the proposal of the Commission for a successor to the current multiannual programme in the field of energy, the "Intelligent Energy - Europe II" (IEE-II 2007-2013), to cover the period 2014-2020.

The proposal for the new programme has budgetary and resource implications, such that a combined ex ante evaluation and impact assessment must be performed to obtain approval for it.

As part of its preparations, the Commission has asked Deloitte to assist with the combined ex ante evaluation and impact assessment. This report constitutes the first draft of the final report according to the contract mandating Deloitte to carry out the task, signed by the European Commission and Deloitte on 03/11/2010.

The main purpose of the combined ex ante evaluation and impact assessment is to:

- Deliver a study providing arguments, and supporting evidence – quantified wherever possible – and based on elements of a public consultation to the extent this is relevant and possible - as input to the final impact assessment to be drafted by the Commission;

- Give a view on what the potential IEEII successor programme could look like taking into account that the barriers to adoption of energy efficiency and renewable energy sources that were the basis of the adoption of IEE II, and the corresponding EU policy position, are may no longer be as relevant as they were for IEEII. A shift of focus in actions for a successor to IEEII could therefore be necessary.

2.2 Structure of the report

The report is structured according to the requirements an ex-ante valuation /impact assessment and is aligned with the EC guidelines regarding such analysis. It contains the following chapters:

- General introduction and scope and coverage of the evaluation (Chapter 2)

- The research methodology applied for the combined ex-ante evaluation/impact assessment (Chapter 3)

- The context and challenges of the programme that allow us to answer first questions of the ex-ante evaluation and impact assessment questions, relative to the understanding of the needs and the necessity of the EU initiative (Chapter 4)

- The policy objectives to which the programme will have to contribute (Chapter 5)

- Overview of synergies and coherence with other EU programmes (Chapter 6)

- Formulation of the final policy options to form the basis of the combined ex-ante evaluation/impact assessment (Chapter 7)
- Analysis of the environmental, economic and social impacts of the different IEE programme instruments programme(Chapter 8).
- Analysis of the potential impacts of the alternative policy options (Chapter 9)
- Comparison of the benefits and costs of the different policy options (Chapter 10)

2.3 The scope and coverage of the combined ex-ante evaluation and impact assessment

This section presents the scope of the questions addressed for the combined ex-ante evaluation and impact assessment.

Article 27(4) of the Financial Regulation requires an ex ante evaluation[2] of all programmes and activities which entail significant spending. In addition, impact assessment[3] is compulsory for major policy proposals. It aims at preparing evidence for political decision-makers on the advantages and disadvantages of possible policy options by assessing their potential economic, social and environmental impacts. It comprises of the following logical steps. In order to avoid duplication of efforts and to exploit synergies between ex ante evaluation and impact assessment, the Communication on Evaluation and the Impact Assessment Guidelines state that both exercises can be combined.

2.3.1 Scope and questions to be addressed

The combined ex ante evaluation and impact assessment addresses the following questions which falls within the scope of the mandatory steps of a combined ex-ante evaluation/impact assessment according to the EC guidelines (the chapters in which the questions are addressed are mentioned in brackets – for more details see the analytical framework in chapter 3):

[2] According to Article 21(1) of the Implementing Rules the ex ante evaluation should address: the need to be met in the short or long term; the added value of Community involvement; the objectives to be achieved; the policy options available, including the risks associated with them, the results and impacts expected, in particular economic, social and environmental impacts, and the indicators and evaluation arrangement needed to measure them; the most appropriate method of implementation for the preferred option(s); the internal coherence of the proposed programme or activity and its relations with other relevant instruments; the volume of appropriations, human resources and other administrative expenditure to be allocated with due regard for the cost-effectiveness principle; the lessons learned from similar experiences in the past.

[3] An impact assessment contains the follwong steps: identifying the problem to be addressed by the EU initiative; assessing the need for EU-level intervention, incl. subsidiarity; defining objectives of the EU initiative; developing policy options; analysis of the impacts of the options; comparing the options; outlining monitoring and evaluation.

- What are the problems/needs to be addressed by the EU initiative in the short or long term? (Chapter 4)

- Why is the EU initiative needed? Does it observe subsidiarity and proportionality principles? What is the added value of the EU initiative? (Chapter 4)

- What are the general, specific and operational objectives of the EU initiative? What are the targets? (Chapter 5)

- What are the different (credible) options for achieving those objectives? (Chapter 7)

- What will be the impacts, in particular in economic, social and environmental terms, of each of the options? How can they be measured and monitored? What are the risks of each of the options? (Chapter 8-9)

- What are the relative costs and benefits of the options? (Chapter 9-10)?

- How will the EU initiative be monitored and evaluated in the future? (Chapter 10)

- Are the volume of appropriations, human resources and other administrative expenditure allocated with due regard for the cost-effectiveness principle? (Chapter 9)

- How will the lessons learned from the past inform the EU initiative? (Chapter 4 and throughout the other chapters)

- Is the EU initiative coherent with other EU expenditure programmes, such as the Framework Programme for Research (FP) or the Structural Funds? Are there any overlaps? With which other EU programmes could it be brought together to better address the needs? (Chapter 6, and 8-10)

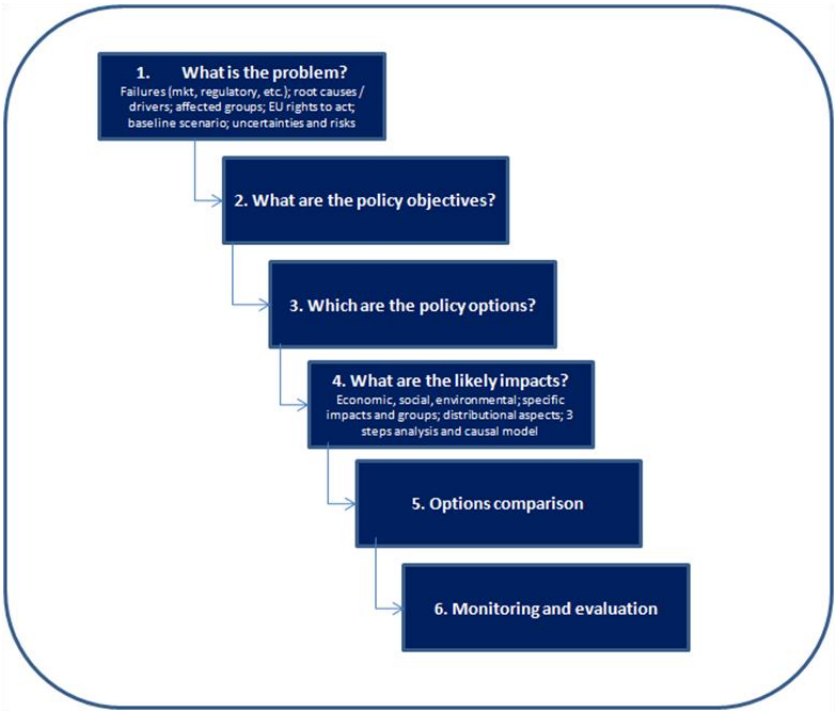
3.Research methodology

This chapter presents Deloitte's approach to an impact assessment in an ex-ante evaluation context, the analytical framework used for the ex-ante evaluation/ impact assessment, as well as more detailed descriptions of the research methods and tools for the combined ex ante evaluation and impact assessment. In addition, the chapter includes a section describing the design of the quantitative impact assessments, hereunder the comparison of policy options.

3.1 Impact assessment method

The structure of an impact assessment (IA) is organised into six logical steps. Deloitte's approach includes all of the six points for IA as our overall approach to impact assessment is based on the EC Impact Assessment guidelines. The structure is presented in the figure below.

Figure 1: The six steps of an impact assessment



Step 1 concerns the definition of the problem that the policy is intended to tackle and the identification of the relevant stakeholders that are affected by the problem addressed by the policy intervention. In this first phase, the causes of the problems underlying the programme and the need to act are established. Moreover, a "baseline" scenario is defined, that is, the scenario against which the policy options identified will be compared. In this case, the baseline scenario foresees the continuation of the current IEE II programme in a more or less unchanged form.

Step 2 deals with the statement of the policy objectives. In this step, the policy makers have to set appropriate objectives and determine the best policy instruments to reach the future state of affairs that the policy intervention is supposed to achieve. The important questions are thus: What is the aim of a policy intervention and what shall be achieved? Using a systematic approach, the objec-

tives need to reflect the identified problems, and to be structured according to the resolution of the problem. In the present assignment, which deals with the question of whether and how to continue an existing funding programme, the basic objectives are already given. The analysis therefore focuses on describing the objectives and instruments of the programme and the need to reformulate and clarify them in view of a successor programme.

Step 3 permits the policy makers to establish the policy options and the delivery mechanisms that are most likely to achieve the set of objectives. A participatory approach is a key variable in this step and is used by consultants whose aim is to identify a selected set of policy options. They should be suitable to address the problem and to achieve the general and specific objectives identified in the former stages. It is important to always retain the "no change" option and options that do not entail legislative action.

In the present assignment, step 3 diverged to some extent from the theoretical approach. A set of preliminary policy options was already given by the Commission as part of the task specifications and Deloitte was thereafter supposed to elaborate on the policy options together with the Commission in order to reach a set of final policy options to be used for the impact assessment. A participatory approach was followed by Deloitte in which preliminary evidence was used as a basis for extensive discussions with the Commission leading to final policy options with a rather different formulation and character than the original ones, except from the no change option (continuation of current programme) and the no continuation option (in which there will be no future IEE programme).

Step 4 focuses on the assessment of the likely impacts from the options selected. Generally the programme actions are linked to the achieved emission reduction and the acceleration of technological developments which enable emission reductions in the future. The aim of this fourth step is to collect information about likely impacts across the three main policy dimensions (economic, environmental, and social) as well as potential trade-offs and synergies. The aim is also to identify enhancing measures (i.e., ways in which a certain policy option could be fine-tuned to make it more effective and efficient) and/or mitigating measures (such as longer transition periods, exemptions for certain groups or redistributive measures). The analysis of the impacts foreseen aims to provide policy makers with sound information on the basis of which the relevant options can be compared and ranked.

The combination of soft nature of the IEE programme, its relative small size compared to other major EU funding programmes, and the lack of existing monitoring of effects, made it necessary to base the forward-looking impact assessments mainly on qualitative evidence and survey results.

Step 5 consists of the comparison of the options identified in line with the defined objectives. The choice of method depends on the problem as well as the analytic methods used. The EC's IA guidelines set out the following principal analytical steps in connection with the comparison of the impacts:

- Weigh-up the positive and negative impacts for each option
- Where feasible, display aggregated and disaggregated results
- Present comparisons between options by area

- Identify, where possible and appropriate, a preferred option

In this step, Deloitte has compared the four final policy options with respect to their relative strengths and weaknesses. The aim of the comparison is to see if one or more policy options stand out above the others. Deloitte has attempted to present the relative strengths and weaknesses of each policy option in a clear and well-arranged way in order for policy makers to decide which option they prefer based on a weighting of political priorities. The strengths and weaknesses have been identified qualitatively and quantitatively to the extent possible.

Step 6 concerns the set up of a monitoring and evaluation system to be deployed together with the policy option(s) adopted. In this step, Deloitte has made suggestions on how monitoring and evaluation of the programme could be improved in the future so as to gain more knowledge and evidence on its actual results and impacts and so as to create a better balance between burdens and needs of monitoring, especially in view of the different nature of the programme instruments.

This study is conducted as a combined ex-ante evaluation and impact assessment in order to exploit synergies and avoid duplication of efforts. Several of the questions to be addressed by an ex-ante evaluation is covered by the impact assessment. In order to cover all ex-ante elements, additional questions about coherence and lessons learned from the past are included in the analytical framework, which can be found in the following section.

3.2 Analytical framework

This section presents the analytical framework for the evaluation. The framework includes the general research questions and an overview of which chapters contain the respective questions. Moreover, judgment criteria, indicators and sources are indicated for each research question. The two tables below present the employed analytical framework.

Table 1: Analytical framework, programme as a whole

Evaluation question	Judgment criteria	Indicators	Main sources
Ex-ante/IA questions relating to the programme as a whole			
IA - step 1: What is the problem (Ch. 4)			
1. What are the problems/needs to be addressed by the EU initiative in the short or long term? (Ch. 4)	-	Descriptions of the problems/needs related to energy in the EU	Desk research Interviews with EC and external stakeholders
2. Why is the EU initiative needed? Does it observe subsidiarity and proportionality principles? What is the added value of the EU initiative? (Ch. 4)	Extent to which it observes subsidiarity and proportionality principles and delivers added value	Opinions about why the problems/needs should be addressed at EU level	Desk research Interviews with EC and external stakeholders
3. How will the lessons learned from the past inform the EU initiative? (Ch. 4)	Extent to which experiences from past IEE-programmes and similar programmes may shed light on the impact of future changes in the IEE programme	Descriptions of specific lessons and how they can be taken into consideration	Desk research Interviews with EC and external stakeholders
IA - step 2: What are policy objectives (Ch. 5-6)			

Evaluation question	Judgment criteria	Indicators	Main sources
4. What are the general, specific and operational objectives of the EU initiative? (Ch. 5)	-	Descriptions of the objectives	Desk research Interviews with Commission stakeholders
5. Is the EU initiative coherent with other EU expenditure programmes such as the Framework Programme for Research (FP) or the Structural Funds- Are there any overlaps? With which other EU programmes could it be brought together to better address the needs? (Ch. 6)	Degree of coherence Incentive alignment and targetting focus Positive synergies Avoidance of double administration and unnecessary expenditures	Revealed consequences of programme overlaps Discovery of potential synergies Stakeholder and expert opinions on ways to improve the coordination with other EU programmes	Desk research Interviews with Commission stakeholders

The table above shows, that desk research and stakeholder interviews are the prevailing research methods to address the questions regarding the programme as a whole. Where appropriate, results from the web-surveys have supplemented the findings from the desk research and stakeholder interviews.

Table 2: Analytical framework, comparative IA of policy options

Evaluation question	Judgment criteria	Indicators	Main sources
Questions relating to the comparative IA of the different policy options			
IA – step 3: Which are the policy options (Ch. 7)			
6. What are the different (credible) options for achieving those objectives? (Ch. 7)	Potentials to achieve the objectives within the given conditions Extent to which the options under consideration have already shown promising l results	Descriptions of the variations which can be made in the programme Past environmental, economic and social performance of various combinations of policy options	Desk research Interviews with EC and external stakeholders Web survey Other existing impact data Final selection of options together with steering committee
IA – step 4: What are the likely impacts (Ch. 8-9)			
7. What will be the impacts, in particular in economic, social and environmental terms, of each of the options? (Ch. 8-9)	Extent to which the various policy options will generate environmental, social and economic impacts in line with the policy objectives	Stakeholder and expert opinions and rankings on the likely impacts of different policy options Forecasting on the basis of existing effects and impacts	Desk research Interviews with EC and external stakeholders Surveys Expert opinions Other existing impact data
IA – step 5: Options comparison (Ch. 9-10)			
8. What are the relative costs and benefits of the options? (Ch. 9-10)	Extent to which the policy options maximise expected net benefits	Impact scores Ranking of policy options Forecasting on the basis existing administrative costs	Desk research Interviews with EC and external stakeholders Surveys Existing data on costs
9. Are the volume of appropriations, human resources and other administrative expenditure allocated with due regard for the cost-effectiveness principle? (Ch. 9)	Cost-effectiveness in policy administration Appropriateness of the human resources to effectively manage the policy options	Stakeholder and expert opinions on ways to improve the cost effectiveness of the future programme	Desk research Interviews with Commission stakeholders Surveys Existing data on costs

Evaluation question	Judgment criteria	Indicators	Main sources
IA – step 6: Monitoring and evaluation (Ch. 11)			
10. How will the EU initiative be monitored and evaluated in the future? (Ch. 9)	Ability to measure and improve performance	Actual frequency, method, focus and results of the monitoring activities Stakeholder and expert opinions on how to improve the monitoring and evaluation of the future programme	Desk research Interviews with Commission stakeholders

The Table above shows the analytical framework for questions regarding the comparison of the different policy options' impacts.

As indicated by the table, all presented research methods have provided input to these questions. The surveys have served as the primary source of data. Existing data have also been used to some extent. However, there are only very few existing data on the impact of projects and the programme as a whole.

3.3 Applied research methods for the impact assessment

As shown in the analytical framework, we have used several different research methods to complete the steps explained above. In the following, these research methods are briefly explained

3.3.1 Desk research

We have gone through relevant IEE programme documents, previous evaluations, existing quantitative/econometric studies and impact assessments and other reports in the field. A bibliography can be found in Appendix D.

Desk research has played an important role in answering the basic evaluation questions that apply to the programme as a whole, which have primarily been answered during the initial phases of the project. Moreover, it has served as input in the process of identifying and specifying the final policy options used in the comparative impact analysis. It should be noted that while we have received relevant documents from the Commission, EACI, and EIB, limited data is available in a usable format in terms of quantification of the results and impacts of IEE II projects. For this reason, we rely heavily on data collected through surveys and interviews, and leverage the output of the case studies and sample for the final evaluation of IEE II as relevant.

The EACI receives information on project progress, comments from relevant project officers and financial officers and budget consumption etc. which is used by the EACI to track the progress of project implementation. Basic information for the analysis on the projects and their characteristics was obtained from EACI's project management system, but as the system contains little structured information related to monitoring of project impacts, the data was supplemented with a web based survey (see below). The information contained in the system primarily consists of an overview of basic project details like budget, field of action, contact information etc. In addition to this, there are links to web-pages within the IEE home page containing case-by-case description of project results which does not, however, contain structured monitoring data.

3.3.2 Stakeholder interviews

Besides from extensive desk research, stakeholder interviews have been used throughout the project in order to collect basic input data across all the questions that must be answered within the scope of the analysis.

Various stakeholders were consulted in order to collect quantitative and qualitative information on the future of the IEE programme as agreed with the project steering committee. These are listed in Appendix B. The stakeholders were consulted through interviews and surveys as well as a focus group.

A focus group was arranged with the IEE management committee to cross-check the identified expected impacts of the defined policy options and provide input into areas to be developed.

Interviews were carried out at EU level as well as in 8 countries selected for the fieldwork of the final evaluation. After having identified the major stakeholders in close cooperation with the Commission, Deloitte carried out preliminary interviews with the Commission These interviews addressed the questions regarding the programme as a whole and also serve as input to the specification of policy options.

In Phase 2, we carried out interviews with as well external as internal stakeholders. The stakeholders included officials from DG Energy, DG ECFIN, DG RTD, DG ENV, DG CLIMATE, DG REGIO, DG ENTR, and officials and programme coordinators from EACI and EIB and one or more participating member state organisations as well as several representatives of project stakeholders. Other consulted stakeholders include industry and SME's, social housing organisations, vocational training institutions, local and regional authorities and member states. These interviews have to some extent provided a sanity check of the presented policy options. Furthermore, the stakeholder interviews have given preliminary insight into the likely impacts, costs, benefits and monitoring issues of the proposed policy options.

3.3.3 Survey activities

Three surveys were carried out in English in order to collect views and opinions from:

- Web-based survey of partners/coordinators regarding the open call P&D projects for which they are responsible in the IEE II programme: survey closed, response rate: 75% (135/180 IEE projects).

- EACI Project officers regarding the open call P&D projects for which they are responsible in the IEE II programme: survey closed, response rate: 100% (180/180 IEE projects).

- ELENA project coordinators regarding the ELENA projects for which they are responsible in the IEE II programme: survey closed, response rate: 100% (5/5 IEE projects).

Questions relating to the ex-ante evaluation were also included in a third, joint web-based survey with the final evaluation of IEE II to:

- Members of the IEE Committee (IEEC) and IEE NCP's: survey closed, response rate: 63%.

Webbased survey of project partners/beneficiaries

We have conducted a web-based survey to obtain information about projects already carried out under the IEE II programme. The survey targeted all IEE project coordinators/partners.

The purpose of the survey was to target the responsible persons from these projects in order to collect information on the impacts and opinions about the different types of instruments and more specific actions that may be employed by the EC within the IEE framework to reach the objectives.

All questions contained in the web-based survey appear in Appendix C.

Three additional surveys

In order to validate and supplement the findings from the web based survey, we also conducted a survey among project officers using Excel questionnaires. This survey comprised all IEE II projects.

Moreover, questionnaires have been distributed among ELENA project managers to get insight from the ELENA programme instrument focusing on project development services

Several questions relevant for the ex-ante evaluation/impact assessment have been included in the survey among NCPs conducted for the final evaluation of the IEE II programme.

All questions contained in the additional surveys also appear in Appendix C.

3.4 Design of quantitative impact assessments

This section provides an overview of the quantitative analyses conducted as a part of the impact assessment. This includes a short description of the present monitoring situation and related limitations to the analyses. Furthermore, the section describes how survey data is used for the analysis of impacts and how the administrative costs of the proposed policy options are assessed.

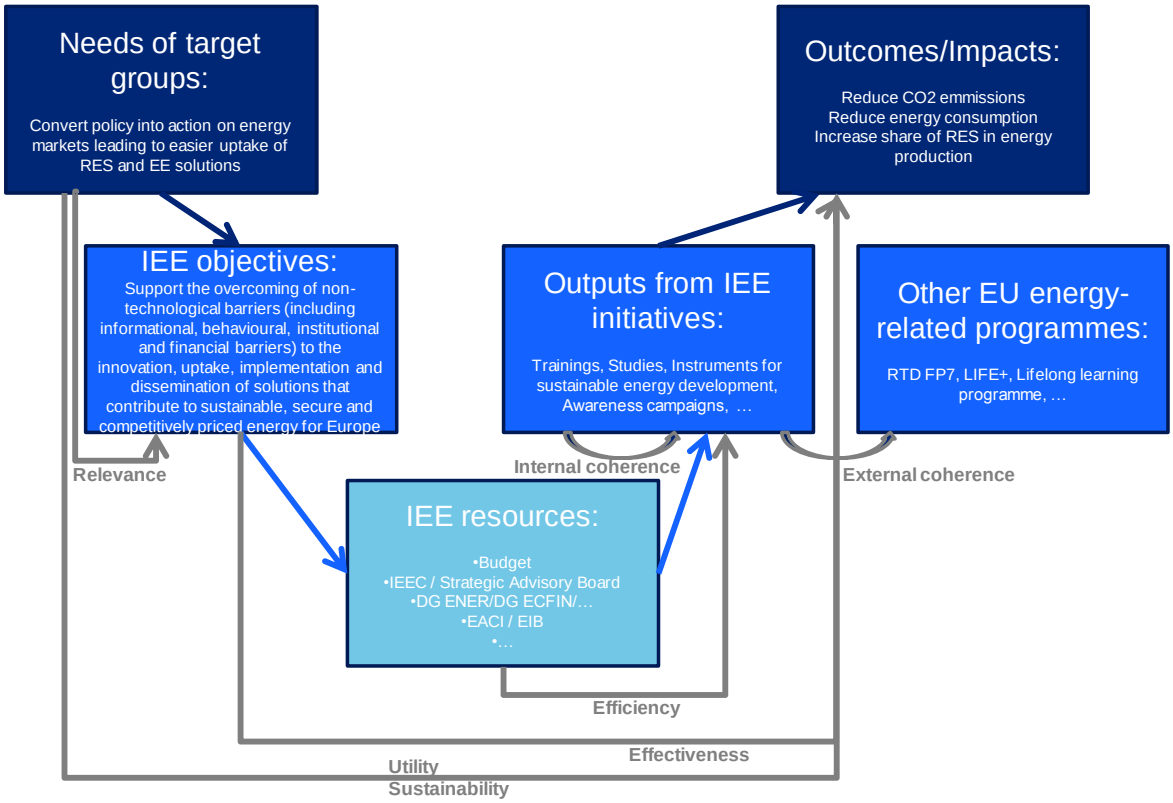
3.4.1 Monitoring the IEE programme and project impacts

In Figure 2 below, the intervention logic of the IEE programme is illustrated with input-output-relations, with emphasis on the main elements to be quantitatively or qualitatively analysed, i.e. effectiveness, efficiency, coherence, utility and sustainability.

The quantitative analyses carried out as part of the impact analysis focus mainly on the effectiveness and efficiency of the programme.

While the central question of an impact analysis in the context of an ex-ante evaluation is how effective and efficient the alternative future policy options will be, the expectations regarding this will, to a high extent, have to be based on impact assessment of the existing programme and variations in the effectiveness and difference of its various components, which can then be projected into the future.

Figure 2: Intervention logic and input-output relations



Accordingly it is quite important to establish the impacts of the existing programme. The challenge of establishing the actual impacts is amplified by the fact that the final evaluation of the programme is being carried out in parallel with the ex-ante evaluation. The timing overlap is handled by sharing of results from interviews, surveys and workshop and continuous communication on progress and results.

Moreover, the desk research carried out has shown that the existing monitoring of the IEE programme still provides very little evidence on the impacts generated by projects funded by the the programme. Since the IEE activities are dedicated to funding projects, the programme impacts ultimately depend on the aggregate impacts of all the projects that received a grant. It is therefore important to get more insight into project impacts before any conclusions can be reached on the overall programme impacts.

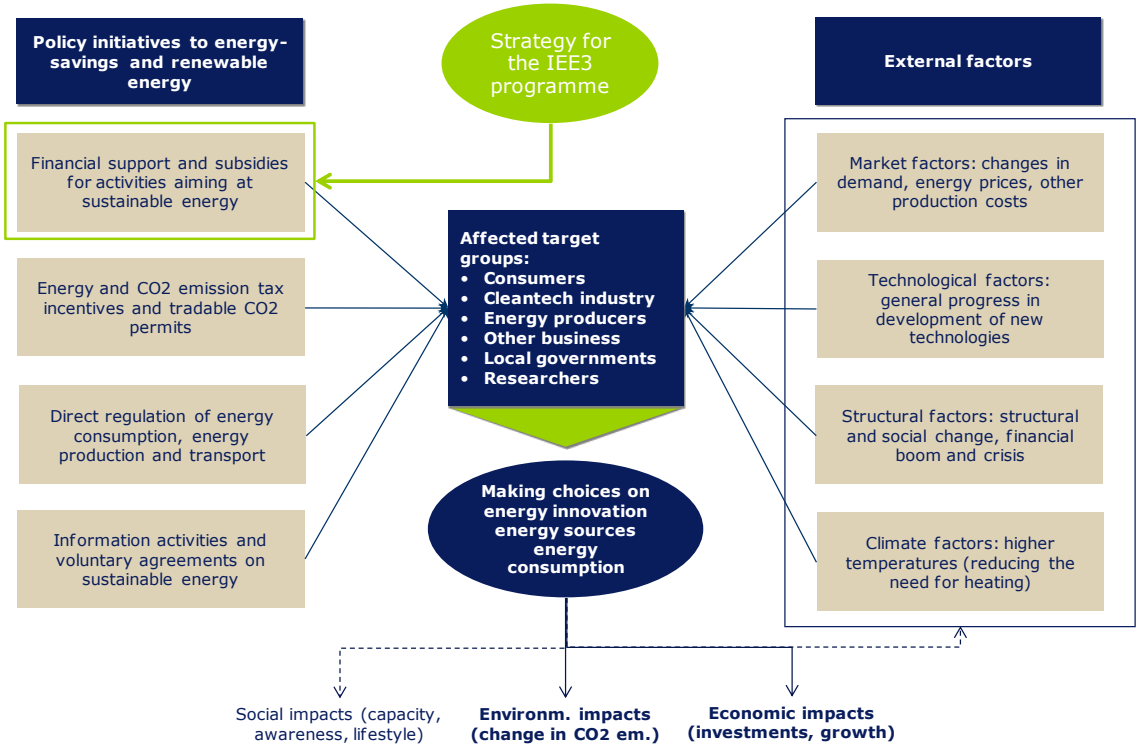
Even if there can be established a clear link between project outputs and impacts, for example project development services for market replication projects, or promotion and dissemination projects that focus on triggering certain energy technology investments, there may still be a number of other intervening factors that contribute positively or negatively in causing the impacts. This gives rise to the disentangling problem (sometimes also referred to as the question of *additionality* of each instrument) which refers to the difficulties in isolating the contribution of the IEE programme to the impacts when many other instruments and forces exercise simultaneous influence on the impacts.

3.4.2 The barriers to econometric modeling of IEE impacts

The disentangling problem may sometimes be resolved by econometric analysis provided that a good model and valid and reliable time series data and/or other types of data can be obtained with respect to the impacts (the dependent variable) and their causal drives (the independent variables), that are, policy instruments, market factors, etc. Figure 3 below shows a generic model of how the IEE programme in combination with other intervening instruments and external factors are expected to cause the associated economic, environmental and social impacts.

Conditioned upon the premise that the necessary data would turn out to be available, Deloitte proposed to set up one or more econometric models that could help in explaining the extent to which the historically observed impacts were caused by the IEE programme. This would for example include an estimation of CO_2 savings per EUR spend on IEE project support, and perhaps also similar measures of other impacts.

Figure 3: Causal model



The figure above provides an overview of the various political instruments and external factors that affect energy related decision besides IEE and support programmes. The role and more specific intervention logic of the IEE instruments were elaborated in Figure 2.

The research and analyses carried out through the project has shown that the available data are far from sufficient for that purpose. The reasons for that are the following:

- *The non-concentrated distribution of the funding.* The focus of the IEE programme is so diverse that it is not possible to model particular target sectors or local areas where the IEE instruments exercised a major influence on the aggregate energy consumption, CO_2 emissions, value added, etc. The IEE projects are scattered over many sectors and areas and-

taken together -they may have significant aggregate effects, but they are not sufficiently concentrated to be driving forces of the overall development in any particular sectors and local areas. This rules out that their effects will be revealed by econometric modeling of the environmental and economic development of these sectors and areas.

- *The small aggregate scale of the IEE programme*. On an even more general level, the question would be whether the IEE funds have contributed to a reduction of European energy consumption and CO_2 emissions. That would indeed be possible, but since the programme constitutes only a small part of the entire energy project funding in Europe, its impact would not be detectable within an econometric analysis on the highest aggregate level. Other policy instruments with stronger financial leverage would probably overshadow the effects of the IEE programme.

- *The soft nature of the instruments*. Even if the funding had been more concentrated and high scale it would have been difficult to monitor the impacts of most projects. This is because most of the projects within the IEE programme are of a soft nature where it is almost impossible to establish a direct link between the produced outputs and outcomes that they subsequently give rise to in the form of energy and CO_2 savings, innovation and growth and even technology investments. This applies especially to projects that raise awareness, facility policy implementation or builds fundamental human and institutional capacities which, if successful, may create a basis for further environmental, economic and social improvements in the long term, but which in themselves are neither directly or solely causing such improvements.

- *The limited consolidated output from existing project-level monitoring of impacts.* Although quantitative targets have been formulated for all projects within the IEE programme since the 2009 call, this has not resulted in an overall clear and consolidated view of project impacts despite efforts in monitoring and measuring project results, and to a more limited extent, impacts, which may to a certain extent be explained by the limited time for this. Accordingly, there is limited existing evidence on the effects and impacts generated by individual projects, except in some cases where the project partners tried to calculate the impacts. Hence no generalisations on impacts can be made from the existing project-level monitoring.

In view of these reservations, and the fact that nor has it been possible to identify any econometric studies of similar EU funding programmes, it has been necessary for Deloitte to base the quantitative part of the impact assessment on scoring, aggregating and analysing the project impacts through surveys. The surveys have been supplemented with utilisation and evaluation of the limited existing project data.

In the final conclusions in chapter 11, we propose some improvements with respect to project target-setting and monitoring that may improve the possibilities for quantitative/econometric analysis of project impacts in the future.

3.4.3 Quantitative analysis based on survey results and project data

First, as a central element in step 4 of the impact assessment method, it is necessary to establish better information on the impacts of the existing IEE programme than provided by the available monitoring data. Given that the impacts are not systematically described and summarised by the

existing monitoring and evaluation activities – due to the inherent character and difficulties of the majority of IEE projects – it has been necessary for Deloitte to survey the entire pool of closed promotion and dissemination projects to obtain such information.

The impacts scores of the surveyed projects have thereafter been used for quantitative analysis that sheds light on the likely impacts and costs and benefits of changing the budget and focus of the IEE programme in accordance with the different policy options. Cross-tabulations and simple statistical analysis have been used to reveal the differences. The resulting information has served as input in the process of determining the likely benefits of a change in focus with respect to the part of the IEE programme administrated by the EACI.

With respect to the part of the programme administrated by international financial institutions (IFIs) - he funding of project development services for market replication projects-, it is more straightforward to establish, ex-ante, the expected project impacts in terms of leveraged energy investments and resulting savings in energy consumptions and CO_2 emissions. The challenge is of course to determine the extent to which these investments in energy technologies that are already out there in the market would have been made regardless of the project development support (the question of additionality).

In order to establish the expected leveraged impacts of the ELENA project development services, we have gone through the data and reporting of each of the ELENA projects that already started and those that are in the process of being approved and supposed to start up to soon. Furthermore a survey has been carried out of the five ELENA projects that have been signed and started up so far. On that basis reasoned assessments have been made on the extent to which the effects are indeed additional. The same has been attempted for those promotion and dissemination projects that have formulated clear quantitative targets and where an estimate on the expected degree of target realisation and future impacts have been achieved through the detailed project-by-project surveys. The resulting information has thereafter been used in determining the likely impacts of increasing/decreasing focus and funding of such project activities.

Scoring of impacts from promotion and dissemination projects through survey questions

To assess the impacts of the projects, we have used a scoring system based on subjective assessments by those responsible for the projects.

The scoring system allows for rating of the projects with respect to their most important impacts and the associated value of these impacts. It has been built into the web survey by constructing adequate questions, scales and options for rating – as objectively as possible – the impacts of each project. Mechanisms have been designed for aggregating the ratings into total scores. The ratings by the surveyed projects partners/beneficiaries will, of course, to some extent be subjective and colored by devotion to their "own" projects. Therefore, in a second survey, the responsible project officers of the EACI have been asked to perform similar rating of each project which then provides a second opinion. Hence, a joint score is formed on the basis of:

- the impact value ratings of the project beneficiaries,
- the impact value ratings of the EACI project officers

Although the scores will eventually be based on subjective assessments by two set of respondents (project partner/beneficiaries and project officers), they have be made as transparent and comparable as possible by framing the underlying survey questions with reference to objective criteria. Hence, the survey questions and the method for scoring the answers have been based on a value tree approach. The value tree approach builds on a number of explicit objective dimensions and criteria that form the basis of value scores which can be aggregated into higher levels to form a joint score of the overall environmental, economic and social impacts. The resulting impact scores measure either pure benefits or cost effectiveness depending on the framing of the question. The scores cannot be translated into an absolute monetary value, but allows for relative impact rating of the individual projects and groups of projects along the relevant environmental, economic and social dimensions.

The value tree and the central sub-criteria on the basis of which the promotion and dissemination projects have been scored are shown in Figure 4 at the end of this chapter.

3.4.4 Method for aggregating and comparing the impacts of policy options

Step 5 of the impact assessment requires that the net values of the respective policy options are estimated and compared. This can be done either by way of Cost-Benefit analysis, Cost-Effectiveness analysis and/or Multi-Criteria Decision-making Analysis (MCDA), or more qualitatively when the other options are not possible.

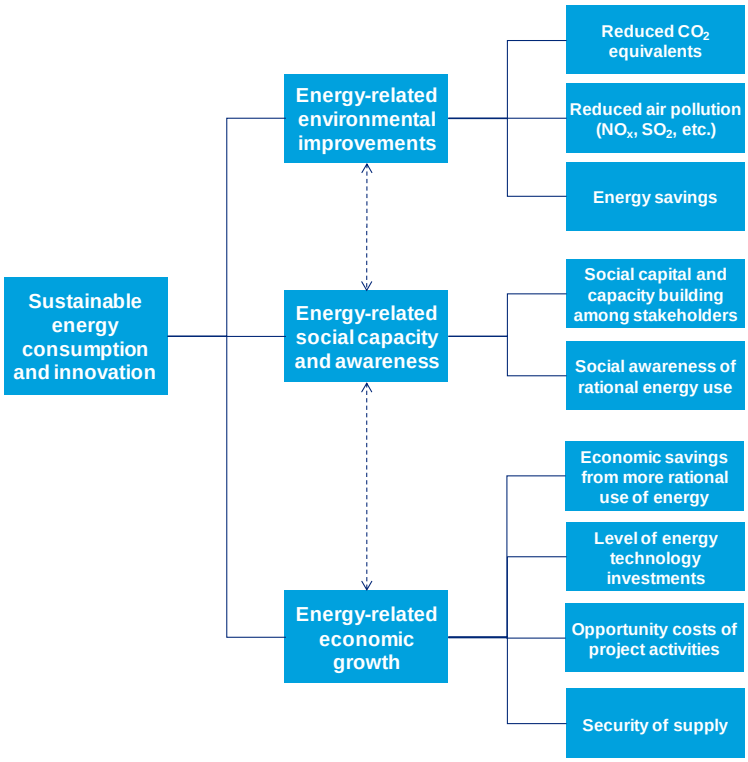
We have used valuation techniques from Multi-Criteria Decision-making Analysis (MCDA) to score impacts of existing promotion and dissemination projects (cf. section 3.4.4 and Appendix A). The overall comparative assessment of the future impact of the policy options will be rather qualitative due to the barriers of quantitative impact assessment identified in section 3.4.2 which prevents genuine valuation of the future impacts. Yet, to some extent the official quantitative targets and degrees of realisation for promotion and dissemination and market replication projects will be used to quantitatively assess the forgone benefits of not continuing the programme or extending/contracting it along various dimensions. Such rough estimates of the benefits will be held up against the budgetary implications (including changes in grants and administrative costs) of changing the policy.

Moreover, the value tree approach contained in MCDA is used in a more general sense to provide a structure for the comparative impact assessment. The structure takes departure in initial considerations on how to design a value tree that includes all the major criteria which the policy options must be assessed against in order to enable the decision-maker to choose the option which is expected to create the highest overall value (aggregate score). With respect to the impact assessment of the IEE programme, we have proposed the value tree in Figure 4, with the most general criteria to the left sub-criteria to the right.

The eight central sub-criteria on the basis of which the policy options are compared are shown to the right. The three first are sub-criteria under environmental improvements, the two in the middle are sub-criteria under social capacity and the four latter are sub-criteria under economic growth[4].

[4] Some of the sub-criteria could be further divided into underlying or intermediate sub-criteria, for example the alternative costs of IEE activities which consist of both subsidy transfers and administrative costs which, taken together, create

Figure 4: Impact value tree



As is illustrated in the figure, the criteria are correlated and are therefore not all mutually exclusive. For example, the sub-criteria "Energy savings" is strongly correlated with the sub-criteria "Economic savings from more rational use of energy". For a more detailed description of how the impact scores have been constructed from response to survey questions see Appendix A.

The environmental criteria that are relevant for the IEE are mainly the amount of CO_2 reductions, which is the central sub- criteria, In addition, there are other kinds of air pollution related to the use of fossil fuels (for example SO_2, NO_x and small particles) which may be reduced as a side-effect when changing to renewable energies or when the overall amount of energy consumption is reduced.

Given the objectives and focus of the IEE programme, the social criteria are generally less important than the environmental and economic criteria. Yet, the IEE projects may result in considerable capacity building and accumulation of social capital among stakeholders which could be used for other purposes besides the immediate effects of the project. Moreover, some of the projects contri-

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a tax distortion effects that has a dampening supply-side effect on economic growth. Economic savings from more rational use of energy creates both a supply side effect (it becomes less expensive to produce commodities) and a demand-side effects as it increases the net income of consumers and producers. Energy technology investments have mainly a demand-side multiplier effect, but it may also affect the supply-side if it reduces the energy costs of producers.

bute to raising the general social awareness of rational energy use which could also have beneficial effects beyond the immediate and measurable impacts.

The established impact scores are used in further quantitative analysis of cross-correlations between impacts, project characteristics, focus areas, and background factors, etc. The results of these analyses form the basis for assessing the likely consequences of various future changes in the promotion and dissemination programme instrument including the major changes associated with the alternative policy options.

4. Context and challenges of the programme

In this section of the report we provide a view on the EU sustainable energy needs, the current response to these including the IEE II programme, and the EU's right to act in this field, also projecting this to 2014 - the begin of the next programming period – as of when a successor to IEE II will be needed to tackle a number of ongoing needs in sustainable energy development. We thereby address the two following impact assessment questions[5]:

1. What are the problems/needs? (to which we add: what is the current EU response?)

2. Why is the EU initiative needed?

The section also provides insights into the question on the general lessons from the past. The coming chapters will supply further answers to that question

4.1 What are the problems/needs?

4.1.1 EU sustainable energy needs

Today Europe is the world's largest energy importer, and in a context of rising prices for imported fossil fuels and increasing energy demand from emerging and developing countries in the coming decades this poses a threat to security of supply and, with its impact on prices, our economic competitiveness. Our current energy value chain is also contributing to potentially dangerous climate change which must be mitigated – the contribution of energy policy to tackling climate change is crucial.

Energy is the lifeblood of economic activity and social welfare in the EU. If Europe is to achieve its economic, social and environmental objectives, it must address its major energy-related challenges of sustainability, security of supply and competitivity and reduce its dependency on imported fossil fuels to provide its economy with sufficient adequately priced energy without negatively impacting the environment.

Sustainability, security of supply, and competitivity of EU energy needs new cost-effective energy provision and distribution solutions to be developed in the long term, but it also requires a better application of existing solutions as of today, amongst others in renewable energy and energy efficiency, and the creation of a well functioning EU energy market without distortions. Overall, it is considered that over one trillion € of investment will be needed in the EU for production, distribution and transmission in the energy sector until 2020 in order to replace obsolete capacity, provide for increasing and changing demand, and integrate electricity from renewable sources, including electricity and gas distribution and transmission, storage, and smart grids [6]. About 600 bnEUR of

[5] These are the questions from the terms of reference

[6] PRIMES model calculations

this would cover energy distribution (400 bnEUR) and transmission (200 bnEUR), with private finance expected to fall significantly short of this (the need for public intervention is estimated at slightly less than 200 bnEUR).

Besides mobilizing the needed investments in sustainable energy, addressing the needs for the development of sustainable energy must be done bearing in mind the continuum of activities from research and development of new sustainable energy technologies through to market deployment of existing and future technologies and solutions, and the needed synergies between the different activities in this continuum. Market failures across this continuum creating barriers to the development of sustainable energy must all be tackled coherently including those related to lacking or asymmetric information, insufficient capacity and insufficient financing due to distorted prices or administrative inefficiencies.

4.1.2 Need for additional efforts in the challenging economic context

The economic and financial crisis of the last years has clearly placed a strain on investments in sustainable energy. New investment in sustainable energy was estimated globally at $162 bn in 2009, some 7% down from estimated 2008 figure of $173 bn[7].

Nonetheless, the 2009 investment is the second highest annual investment total ever (and four times that for 2004) with spending on new capacity now outweighing that on new fossil fuel capacity. These figures demonstrate a decided focus on sustainable energy for future prosperity, and indicate that it is not a bubble and that the global investment transition towards it is likely to strengthen over time. Furthermore, in this context, the economic and financial crisis can be considered as an opportunity for the development of sustainable energy with the lower growth having contributed to decreased emissions and energy demand, and amongst the responses identified to it globally being investment in sustainable energy as a source of future growth.

For this reason governments intervened in 2009 in the field as never before with $188 bn of "green stimulus" commitments put in place globally to bridge the financing gap. This "green stimulus" as part of government recovery packages was however unequal across the globe, and much larger shares of GDP have been allocated to investments in low carbon energy sources, their supporting systems and infrastructure, and transport, e.g. in China (48%), India (35%), and Korea (26%) in 2009, than in the EU (19% of GDP in 2009)[8]. It is noteworthy in this respect that China led global investments in overall sustainable energy investment in 2009 for the first time, pushing the United States to second place, and had a 32% market share of the world's solar panels production in 2008, as opposed to its 1% market share in 1999. This shows that despite its large absolute size, the funding of economic and financial instruments to stimulate sustainable energy is still rather weak in the EU when compared to that of other major actors like the US or China, and it is apparent that funding should be maintained, and moreover, key that investment is sustainable energy is increased in the EU over the coming years. In its recent roadmap for moving to a low-carbon economy in 2050[9]

[7] Global Trends in Sustainable Energy Investment 2010 (United Nations Environment Programme)

[8] COM(2011) 31 based on World Bank, Indicators, Eurostat, National accounts

[9] COM(2011) 112

the Commission estimates the needed increase in public and private investment to amount to roughly 270 bnEUR annually over the next four decades, or roughly 1.5% of EU GDP per annum on top of the overall current investment to make the transition to a low-carbon economy (taking investments back to the levels seen before the economic crisis). The biggest part of this needed investment is in sustainable energy. Not only the achievement of EU energy policy objectives, but also the future competitiveness of the EU relies on this.

4.2 What is the EU's response?

The EU's response to its sustainable energy needs is multi-faceted. In the following pages we break it down into policy and regulation on the one hand, and financial support through funding programmes on the other.

4.2.1 Sustainable energy policy and regulation

4.2.2 EU sustainable energy policy and regulation

Recognizing its substantial needs, the EU has identified sustainable, secure and competitive energy as the objectives of its energy policy (as testified by the 2010 communication "A strategy for competitive, sustainable and secure energy"[10]), and a pillar of the Europe 2020 strategy[11], which aims to deliver high levels of employment, productivity and social cohesion, and sets out a vision of Europe's social market economy for the 21st century including three mutually reinforcing priorities of smart, sustainable, and inclusive growth.

Correspondingly, within the framework of the "Resource efficient Europe" flagship initiative of the Europe 2020 strategy, the EU is now putting forward a series of long-term policy plans in the areas of energy, transport, and climate change to promote sustainable growth, i.e. a more resource efficient, greener and more competitive economy.

From an energy perspective, the policy objective is to decouple economic growth in the EU from the increased use of resources, shift towards a low carbon economy, increase the use of renewable energy sources (RES), reduce the energy intensity of the transport sector, and promote energy efficiency (EE), as well as improving the framework conditions and access to finance for innovation so as to ensure that innovative ideas in the energy sector can be turned into products and services that create growth and jobs.

In this, the policy plans continue the focus proposed by the Commission in its "An Energy Policy for Europe"[12], which was a first resolute step towards becoming a low-energy economy, whilst making the energy we consume more secure, competitive and sustainable. At the time, as today, this policy was indeed felt to be the most effective way to tackle the EU's energy challenges,

[10] COM(2010) 639

[11] COM(2010) 2020

[12] COM(2007) 1

which are shared by all Member States. Its aims were to be supported by market-based tools (mainly taxes, subsidies and the CO2 emissions trading scheme), by developing energy technologies (especially technologies for energy efficiency and renewable or low-carbon energy) and by financial instruments, following naturally from the Commission's Green paper on "A European strategy for sustainable, competitive and secure energy" (2006) which put forward concrete proposals in six priority areas for implementing a European energy policy. Ranging from the completion of the internal market through to the implementation of a common external energy policy, these proposals were aimed to help Europe to ensure a supply of energy which is secure, competitive and sustainable for decades to come.

Accordingly, the key **EU energy policy targets**, also included amongst the headline targets of the Europe 2020 strategy, are the following "20/20/20" energy and climate targets[13], laid down in the Lisbon treaty[14], and which were adopted at the European Spring Council (8-9 March 2007)[15] based on the foundation provided by the first Strategic Energy Review, published by the Commission in 2007 as part of climate and energy package:

- 20% of EU energy consumption coming from renewable resources (and 10% of energy consumption in transport coming from renewable resources): efforts are focused on the electricity and heating and cooling sectors and on biofuels. In transport, which is currently almost exclusively dependent on oil, the Commission aims to increase the share of biofuels in overall fuel consumption to a 10% share by 2020;

- A 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency: efforts are focused on improving energy efficiency in buildings, transport and industry;

- A reduction in EU greenhouse gas emissions of at least 20% below 1990 levels: the European Council agreed that developed countries should commit to collectively cutting their emissions by about 30% by 2020, compared to 1990 levels, as part of an international agreement, and by 60 to 80% by 2050. The Council supported a 30% cut in the EU's emissions by 2020, provided that this international agreement is successfully concluded.

The success of EU energy policy relies in part on increased research and development to identify new competitive sustainable energy technologies. However, it is considered that the EU's energy and climate objectives can to a large extent be met by better leveraging existing technologies[16]. Indeed, one of the fundamental issues remains the lack of market uptake of existing sustainable energy solutions (notably RES and EE) due to non-technological barriers such as the lack of information, capacity, or financing for actors in this field, which can be considered as market failures.

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[13] Communication from the Commission (doc. 7110/10 of 5 March 2010)

[14] Article 194 of the Treaty on the functioning of the European Union (TFEU)

[15] 7224/1/07 REV 1

[16] As mentioned in the Action Plan for Energy Efficiency (COM(2006)545) and Renewable Energy Roadmap (COM(2006) 848)

Achieving the needed development of sustainable energy will therefore require continued elaboration of adequate policy and regulation, and EU funding, not only directly to investments, but also to stimulate private investments which should form the bulk of funding for sustainable energy, and to build capacity in this field, as well as raising awareness of existing solutions.

While attention must be paid to the fact that these barriers to the development of sustainable energy are not uniform throughout the enlarged EU, these are evolving. Although the new Member States typically still have lower awareness and information on existing solutions, less capacity in the field, and more restricted available financing, they are considered to be catching up with the old Member States, to a large extent due to the EU support provided. Further progress is needed in the interest of EU cohesion. More generally, the barriers to sustainable energy development have somewhat shifted from a lack of awareness of RES and EE solutions to a lack of understanding of how to implement such solutions in practice, linked to a lack of capacity and financing to do so. Correspondingly, EU support activities should in general shift from pure promotion (awareness raising) towards more capacity building and support for financing – not only direct, but also in terms of know-how. The extra "capacity" to be put in place should also allow for transposition by Member States of the quickly evolving EU legislation in this priority field as well as practical implementation of the rules, e.g. by the workforce as concerns the Energy Performance of Buildings Directive (EPBD). Indeed, it is not sufficient to devise policy and legislation, but follow-up of these "on the ground" is also needed for successful implementation.

Taking into account the existing market failures, the EU energy policy objectives and targets are supported by a combination of measures at EU level, and first and foremost by an extensive energy and climate policy and regulatory framework primarily tackling renewable energy, energy efficiency, and CO2 emissions reductions.

Renewable energy policy and regulation at EU level is mainly addressed by Directive 2009/28/EC on the promotion of the use of energy from renewable sources passed in June 2009 based on a Commission proposal in January 2008 (the "RES Directive"). This Directive sets binding national targets for EU renewable energy production to lift the average renewables share across the EU to 20% by 2020, contribute to decreasing the EU's dependence on imported energy, and reduce greenhouse gas emissions. It repeals the previous Directives 2001/77/EC and 2003/30/EC which previously set non-binding national indicative targets for renewable electricity and biofuels, and establishes "*a common framework for the promotion of energy from renewable sources. It sets mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy and for the share of energy from renewable sources in transport. It lays down rules relating to statistical transfers between Member States, joint projects between Member States and with third countries, guarantees of origin, administrative procedures, information and training, and access to the electricity grid for energy from renewable sources. It establishes sustainability criteria for biofuels and bioliquids*"[17].

The RES Directive is already considered successful as, while the indicative national renewable energy targets for 2010 for electricity and transport were not met by the two directives 2001/77/EC

[17] 2009/28/EC, Article 1

and 2003/30/EC it repealed[18], the EU is widely regarded today as being on track to achieve its objective of a 20% share of energy production coming from renewables by 2020[19].

Besides this regulation on RES, the Commission has set out a long-term strategy for renewable energy in the European Union (EU) with its "Renewable Energy Road Map. Renewable energies in the 21st century: building a more sustainable future"[20]. The aim of this strategy is to enable the EU to meet the twin objectives of increasing security of energy supply and reducing greenhouse gas emissions by developing renewable sources of energy – wind power, solar power (thermal and photovoltaic), hydro-electric power, tidal power, geothermal energy and biomass – as an essential alternative to fossil fuels. Indeed, using these sources will help not only to reduce greenhouse gas emissions from energy generation and consumption but also to reduce the EU's dependence on imports of fossil fuels (in particular oil and gas). The roadmap was the development of the 1997 Commission White paper on renewable energies which itself set out a strategy and an action plan to promote the market penetration of renewable energy sources with the aim to double the total consumption of renewable energy from 6% to 12% by 2010 through an action plan containing several support measures including the organisation of a campaign for the take-up of renewables.

Despite the perceived success of the RES regulatory and policy framework, it should be noted that of the trillion euros expected to be needed between today and 2020 to achieve the EU energy policy goals[21], approximately half is needed for replacing or investing in new electricity generation capacity, in which priority should therefore clearly be given to renewable electricity investments as estimates identify that the annual capital investment in renewable energy of about 35 bnEUR today would need to rapidly double to 70 bnEUR to ensure achievement of the renewables objective[22]. While most of this capital investment should come from private sector investment, financed finally by energy consumers, due to the fragmented single European energy market, the ageing infrastructure, and the fact that fossil fuels still receive much higher levels of subsidies than renewable (figures from 2004 for the EU 15 put fossil fuel subsidies at 21.7 bnEUR compared to 5.3 bnEUR for renewable energy), public support is also needed to correct market failures and ensure spending is optimised. This may require more EU intervention as at EU level, despite the strong political sup-

[18] The target for Directive 2003/30/EC of the European Parliament and of the Council on the promotion of the use of biofuels or other renewable fuels for transport was a 5.75% share of biofuels in all petrol and diesel for transport placed on the market by 31 December 2010, and Directive 2001/77/EC of the European Parliament and of the Council set a 21% indicative share of electricity produced from renewable energy sources in total EU electricity consumption by 2010, defining national indicative targets for each Member State, encouraging the use of national support schemes, the elimination of administrative barriers and grid system integration, and laying down the obligation to issue renewable energy producers with guarantees of origin if requested. The EU as a whole reached a share of renewable energy in the production of electricity of just over 18% in 2010 rather than the target of 21%. For transport, the EU reached a share of biofuels or other renewable fuels of 5.1% instead of 5.75%.

[19] COM(2011) 31

[20] COM(2006) 848

[21] COM(2010) 639

[22] ECOFYS, Ernst & Young, Fraunhofer ISI, TU Vienna, 2010

port, policy and legal framework, the financial support given to renewables is currently considered relatively low. For the period 2007-2009, funds spent on renewable energy amounted to roughly 9.8 bnEUR, (3.26 bnEUR/year), the bulk of which (8.4 bnEUR) in the form of in loans and assistance from the European Investment Bank (EIB) with loans for 2009 amounting to 4.6 bnEUR for RES projects and representing 29% of the EIB's energy financing. The rest of the financial support was made up of 565 mEUR from the EPPR, 110 mEUR for IEE, 499 mEUR of EU Structural and Cohesion Funds allocated by Member States to projects and demonstrations of renewable energy (out of the total of approximately 4.8 bnEUR planned for 2007-2013), 250 mEUR from the EU R&D Framework Programme, a budgeted 151 mEUR in venture capital or loan guarantees from the Entrepreneurship and Innovation Programme high growth and innovative SME instrument (EIP GIF), and Sustainable Energy Initiative (SEI) loans of approximately 140 mEUR granted by the EBRD[23]. The EU financing instruments used directly by the Commission for financing renewable energy projects (the European Economic Recovery Package (EEPR), RTD seventh framework programme (FP7), SET-Plan expenditure, or the IEE programme – see details below), those jointly managed with Member States (Structural and Cohesion funds), and those managed with International Financial Institutions (EBRD, EIB, Kreditanstalt für Wiederaufbau (KfW), Council of Europe Development Bank (CEB), etc.) will be reviewed for the financial perspective 2014-2020 with the Commission examining opportunities to use EU and national funds to leverage private capital in energy projects of European interest on local, regional, national and European levels. Further efforts are needed to facilitate the uptake of the Renewable Energy Directive's cooperation mechanisms, and so improve regional cooperation and begin the harmonised reform of support schemes.

Energy efficiency, unlike RES, is mainly tackled through a number of different binding directives (see below) without binding national targets, and through the EU's energy efficiency action plan[24] first adopted in October 2006[25], and recently updated in 2011, which aims to achieve a 20% reduction in energy consumption by 2020, compared to PRIMES projections.

The energy efficiency action plan bases itself on the recently established comprehensive existing framework of directives and regulations to improve energy efficiency in energy-using buildings, products and services, including:

- Directive 2006/32/EC (the Directive on Energy End-Use Efficiency and Energy Services) which includes indicative energy savings targets for the Member States, obligations on national public authorities as regards energy savings and energy efficient procurement, and measures to promote energy efficiency and energy services;

- Directive 2010/31/EU (the Energy Performance of Buildings Directive (EPBD)), a recast of the 2002 EPBD[26], which set minimum efficiency standards for both residential and

[23] MEMO/11/54

[24] COM(2011) 109

[25] COM(2006)545

[26] 2002/91/EC

commercial buildings above a surface area 1000m² and for which most Member States decided to delay transposition until January 2009 due to a lack of qualified independent experts. The recast aimed to clarify and simplify certain provisions, extend the scope of the Directive, strengthen some of its provisions, and provide for the leading role of the public sector and was proposed by the Commission on 13 November2008 and approved by the Parliament on 18 May 2010;

- Directive 2010/30/EU (the "Labelling Directive") and its eight implementing directives, as well as three minimum efficiency standard directives which enable the harmonization of national measures regarding labelling information and minimum efficiency standards on the consumption of energy and of other essential resources;

- Directive 2009/125/EC **(**the "Eco-Design Directive") which provides with consistent EU-wide rules for improving the environmental performance of energy related products through ecodesign (reducing the environmental impact of products, including their energy consumption throughout their entire life cycle);

- Regulation (EC) No 106/2008 (the "Energy Star Regulation") which defines minimum energy efficiency criteria that EU institutions and member states' governmental authorities must abide by when purchasing office equipment (defined in the Energy Star programme).

The energy efficiency action plan furthermore includes a number of other measures to improve the energy performance of buildings, products, and services, to improve the yield of energy production and distribution, to reduce the impact of transport on energy consumption, to facilitate financing and investments in the sector, to encourage and consolidate rational energy consumption behaviour and to step up international action on energy efficiency.

The 20% improvement objective for energy efficiency is now deemed feasible by the Commission with the additional measures proposed in 2011[27], and due to the significant potential for reducing energy consumption, especially in sectors such as buildings, transport and industry, and while the previous policy proved insufficient, some substantial steps have already been taken – notably in the appliances and buildings markets[28], and through the national energy efficiency targets and programmes defined by Member States. The indicative targets, and the efforts of the Member States will be evaluated in 2013 to assess their likelihood of achieving the overall EU objective by 2020, after which the Commission will propose legally binding national targets for 2020 if insufficient progress is made (as was previously the case in renewables).

Again, it should be noted that major efforts will be needed to achieve the energy efficiency targets as the Commission noted that the previous policy was set to achieve only half of the 20% objective by 2020[29], and limited time remains for the new policy to prove effective (or for new measures

[27] COM(2011) 109/4

[28] These steps were taken in the framework of the 2006 Energy Efficiency Action Plan - COM(2006) 545; progress is assessed in the Staff working document SEC(2011) 275 accompanying COM(2011) 109.

[29] COM(2011) 109

with binding national targets to be put in place if needed after 2013). Clearly, this area must now be prioritised, and public spending contributed as, although many energy efficiency investments can be profitable at relatively short term, a large proportion of these are not realised due to market failures such as energy prices not taking all social costs into account, split incentives, and assymetric information. Public intervention to correct these markets is needed through energy and carbon taxes, national energy saving obligations, and other measures such as mechanisms to improve the availability of suitable financing instruments for energy efficiency investments as investment costs represent a significant barrier to the use of energy efficient technologies. EU funding should complement national funding programmes for this, as is already the case to a certain extent through EU financing instruments used directly by the Commission for financing energy efficiency projects (the EEPR, FP7, SET-Plan expenditure, or the IEE programme – see details below), those jointly managed with Member States (Structural and Cohesion funds), and those managed with IFIs (EBRD, EIB, KfW, CEB, etc.) which will all be reviewed for the financial perspective 2014-2020 based on their results and European added value to date. The review will analyse both the scope for improvement of existing EU financial mechanisms as well as new options to trigger investments in energy efficiency at the scale necessary to attain the 20% objective. There are no precise figures available for total EU spending in support of energy efficiency improvements but it should be noted that the EIB alone funded projects contributing to energy efficiency for roughly 1.5 bnEUR in 2009 (11% of EIB lending to energy projects).

Progress on energy efficiency is also key as this is considered the simplest and cheapest way to secure **CO_2 emissions reductions** and avoid dangerous climate change[30]. Indeed, the recent Roadmap for moving to a competitive low carbon economy in 2050[31] not only confirmed the EU's long-term commitment to the decarbonisation path with a target for 80% cuts in emissions by 2050 compared to 1990 levels, but also identified that if the EU delivers on its current policies for renewables and energy efficiency, it could outperform the current 20% emission reduction target and achieve a 25% reduction by 2020. Taking into account the recent economic crisis, it considered this the most cost effective route to achieving the CO2 emissions reduction target for 2050, going in the direct ion of the parliament's commitment to a target of 30% reductions by 2020 if conditions are right.

Binding legislation is already in place to achieve the current 20% CO2 emissions reductions objectives by 2020[32], mainly via the Emissions Trading System (EU-ETS) which is expected to

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[30] COM(2009)519

[31] COM(2011) 112

[32] It comprises three pieces of complementary legislation passed in June 2009 based on a Commission proposal in January 2008:

- A harmonization and strengthening of the Emissions Trading System (EU ETS), Directive 2009/29/EC, the EU's key tool for cutting emissions cost-effectively, reducing the number of allowances available to businesses to 21% below the 2005 level in 2020;

- An 'Effort Sharing Decision' with binding national emissions reduction targets from sectors not covered by the EU ETS, such as transport, housing, agriculture and waste, aiming to cut the EU's overall emissions from the non-ETS sectors by 10% by 2020 compared with 2005 levels;

significantly contribute to investment in sustainable energy by creating a strong carbon price signal and establishing long-term predictability around this, as well as generating revenues which can be reinvested appropriately. Indeed, from a financial perspective the EU-ETS continues to be a cost-effective method of intervention, and a valuable source of funding which can be allocated to sustainable energy development. It will be critical in promoting a wide range of low carbon sustainable energy technologies and playing its role in the identified pathway to 2050 for which both a sufficient carbon price signal and long-term predictability are needed[33]. In this respect, it is considered that certain measures might need to be taken such as revisiting the agreed linear reduction of the ETS cap. It may also be necessary to supplement the EU-ETS with other tools, such as energy taxation or technological support, e.g. to the power sector.

Linked to the above mentioned policy and regulatory measures is the **European Strategic Energy Technology Plan (SET-Plan)**[34] which is the technology pillar of the EU's energy and climate policy, and a key element of the EU's response to the challenge of accelerating the development of low carbon sustainable energy technologies, leading to their widespread market take-up. It is in essence a blueprint for Europe to accelerate the development and market breakthrough of a portfolio of new affordable, clean, efficient and low emission energy technologies (wind energy, solar energy, CCS, bio-energy, nuclear energy, and energy grids) through concrete actions to build a coherent energy research landscape in Europe involving both public (researchers from major Euro-

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- A legal framework to promote the development and safe use of carbon capture and storage (CCS) technology to reduce greenhouse gas emissions by setting up a network of CCS demonstration plants by 2015 and the aim of commercial uptake of CCS by around 2020.

These are to some extent the development of the foundations for an EU strategy to combat climate change laid down by the Commission with its 2005 communication “Winning the battle against climate change” in 2005 and its 2007 communication “"Limiting Global Climate Change to two degrees Celsius - The way ahead for 2020 and beyond” in which it then set out more concrete steps to limit the effects of climate change and to reduce the risk of massive and irreversible disruptions to the planet.

The EU-ETS has proven to be a success and now operates in 30 countries (the 27 EU Member States plus Iceland, Liechtenstein and Norway) covering CO2 and other Greenhouse gas (GHG) emissions from roughly 12000 installations such as power stations, combustion plants, oil refineries and iron and steel works accounting for almost half of the EU's CO2 emissions and over 40% of its total GHG emissions. The scope of the scheme will continue to be extended and the total number of allowances reduced over time so that total emissions fall. The EU ETS has put a price on carbon emissions and shown that it is possible to trade in GHG emissions at scale. It has succeeded in reducing emissions from covered installations, and it is expected that changes to be introduced in 2013, notably a progressive move towards auctioning of allowances, will further enhance its effectiveness.

[33] COM(2011) 112/4

[34] COM(2007) 723

pean institutes and universities in the European Energy Research Alliance (EERA)) and private (industry) resources[35].

The SET-plan considers that barriers to the development of its selected low-carbon sustainable energy technologies such as locked-in investments in fossil fuel solutions, vested interests, as well as the high risks and need for significant investments in initially less profitable sustainable alternatives, mean that change will be slow without a major push. It proposes public policy and public investment partnering with the private sector to meet the EU energy policy objectives, arguing for an increase in investments in the covered energy areas from the current 3 bnEUR per year to around 8 bnEUR per year to effectively move forward the SET-Plan actions, amounting to an additional combined public and private investment of 50 bnEUR over the next 10 years based on estimates and actions defined by the industry, the research community, the Commission and Member States[36]. This increase should further the recent stimulus to EU energy R&D, and is key given that research, development, and ultimately innovation remain critical to identifying new cost-effective solutions to the EU's energy needs while R&D spending in Europe has typically been low proportionally to GDP (below 2%, compared to 2.6% in the US and 3.4% in Japan), mainly as a result of lower levels of private investment. Public funds should therefore be used to attract private investments, for example through public-private partnerships. It is also clear that other measures aiming to develop sustainable energy should coordinate with the SET-Plan to ensure alignment on the roadmap to 2020.

Beyond the "20/20/20" targets, the EU naturally has a number of policy orientations measures in place to achieve its other EU energy policy objectives focussed on the creation of an **integrated internal energy market**, empowering consumers and achieving the highest level of safety and se-

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[35] The SET-Plan was proposed by the Commission in 2007 and endorsed by Member States and the European Parliament as the appropriate way forward.

The idea behind it is to better organize research efforts across Europe for the selected technologies with the greatest potential and jointly plan how money should be invested bringing researchers and industry together to remove bottlenecks in their development. The plans (technology roadmaps) present the technology objectives that are critical for making each low-carbon technology fully cost-competitive, more efficient and proven at the right scale for market roll-out and show the way up to 2020 covering the different stages of basic and applied research, pilot projects (small scale trials), demonstration programmes (actual large scale trials) and market replication measures (successful transfer into fully viable, profitable low carbon technologies available for public use) excluding (costs of) deployment.

The SET-Plan prioritises six energy-related areas for its "industrial initiatives" (public-private partnerships involving industry), namely wind energy, solar energy, CCS, bio-energy, nuclear energy, and energy grids, identified as those for which working at EU level will add most value as they are areas for which the barriers, the scale of the investment and risk involved can better be tackled collectively. Next to these six initiatives, two other initiatives, the Joint Technology Initiative (JTI) on fuel cells and hydrogen to accelerate the development and deployment of cost-competitive European hydrogen and fuel cell based energy systems and component technologies for applications in transport, stationary and portable power, and the Smart Cities initiative to create the conditions to trigger the mass market take-up of energy efficiency technologies starting from 25 to 30 smart cities from which small networks, a new generation of buildings and alternative transport means will develop into European wide realities, are defined.

[36] See SEC(2009)1297 accompanying COM(2007) 723

curity, extending the EU's leadership in energy technology and innovation, and strengthening the external dimension of the EU energy market:

In 2008, the Commission proposed an EU Energy Security and Solidarity Action Plan as the core of this second Strategic Energy Review[37], which complements the "20/20/20" objectives and measures tabled in order to ensure the achievement of the EU's core energy objectives. The energy security and solidarity action plan prioritised five core areas being infrastructure needs and the diversification of energy supplies, external energy relations, oil and gas stocks and crisis response mechanisms, energy efficiency, and making the best use of the EU's indigenous energy resources.

The third legislative package for an internal EU gas and electricity market was adopted in 2009, aiming to make the energy market fully effective and to create a single EU gas and electricity market to keep prices as low as possible and increase standards of service and security of supply. It consists of two Directives, one concerning common rules for the internal market in gas (2009/73/EC), one concerning common rules for the internal market in electricity 2009/72/EC) as well as three Regulations, one on conditions for access to the natural gas transmission networks ((EC) No 715/2009), one on conditions for access to the network for cross-border exchange of electricity ((EC) No 714/2009) and one on the establishment of the Agency for the Cooperation of Energy Regulators ACER ((EC) No 713/2009). The package has laid out the framework conditions for a fully functioning and competitive internal market, with the objective of removing all technical barriers for the completion of the internal market by 2014 and the interconnection of all Member States by 2015.

In 2010, the Commission:

- Gave a status on the integration of the EU internal energy market[38], identifying that electricity and gas markets are not yet working as a single market but remain largely fragmented into national markets with numerous barriers to open and fair competition, such as high concentrations, often with incumbent companies having a *de facto* monopoly position and regulated energy prices. Given the remaining anti-competitive practice in the energy sector[39], pro-active competition enforcement by the Commission and Member States is considered necessary;

- Presented its energy infrastructure priorities till 2030[40], identifying in particular four electricity transport corridors (an offshore grid in the northern sea, interconnections in south western Europe, connections in central eastern und south eastern Europe and integration of the baltic energy market) and three gas transport corridors (a southern corridor to deliver

[37] COM(2008) 781

[38] Report on progress in creating the internal gas and electricity market - COM(2010) 84.

[39] After the Energy Sector Inquiry revealed manifold competition problems in the energy sector, which led to the adoption of nine major antitrust decisions, the Commission continues assessing the competitive landscape in European energy markets.

[40] COM(2010) 677

gas directly from the caspian sea to Europe, baltic energy market integration, and a north-south corridor in western Europe). As mentioned in the Monti Report, the challenge for 2020 is to provide the backbone for electricity and gas to flow freely within the EU for the energy market to deliver on its promises, but for this, and to ensure solidarity, further efforts need to be made to upgrade energy infrastructure particularly in Member States that joined as of 2004 as well as in less developed regions. Moreover, the EU is still lacking the energy grid infrastructure which will enable renewables to develop and compete on an equal footing with traditional sources, and today's grid will struggle to absorb the volumes of renewable power which the 2020 targets entail (33% of gross electricity generation). Smart meters and power grids are therefore key to the full exploitation of the potential for renewable energy and energy efficiency as well as improvements in energy services. A clear policy and common standards on smart metering and smart grids are needed before 2020 to ensure interoperability across the network and are being worked on[41];

- Adopted a communication "The future Role of Regional Initiatives"[42] on the regional initiatives set up in 2006 by the European Regulators' Group for Electricity and Gas (ERGEG) at the Commission's request, as an interim step in moving from national electricity and gas markets to a single internal energy market. These activities will be managed by an independent body with special expertise on these issues, the Agency for the cooperation of Energy Regulators (ACER), taking over from national energy regulators and ERGEG;

- Presented a proposal for a Regulation on "Energy market integrity and transparency"[43] aiming to ensure market transparency by obliging energy traders to respect clear market rules on wholesale energy markets to prevent market manipulation and insider trading.

4.2.3 Implementation of sustainable energy policy and regulation

For EU energy policy and regulation to be effective, the legislative framework must of course be implemented in the Member States. The Commission notes that the current state of implementation is overall poor.

The Commission has had to pursue many Member States for inadequate implementation of the Energy Performance of Buildings Directive dating from 2002. Moreover, a large number of National Energy Efficiency Action Plans submitted in 2007-8, as required under the Energy Services Directive, were disappointing. This means that the energy savings potential continues to be greatly underutilised. More financing, awareness-raising, qualified workforce, quicker uptake of energy efficient technologies and innovation as well as better functioning markets for energy services are all needed to facilitate a higher uptake of energy efficiency. Public awareness-raising and acceptance must also be better leveraged to deliver energy policy. The success of energy labelling suggests

[41]The European Commission has set up a smart grid task force to discuss the implementation of smart grids at the European level: http://ec.europa.eu/energy/gas_electricity/smartgrids/taskforce_en.htm.

[42] COM(2010) 721

[43] COM/2010/0726

that information that is fit for purpose (simple, concise and comparable) and awareness raising campaigns can impact behaviour.

In the area of renewable energy, where legally binding targets were agreed upon in 2009, there has been more progress but the economic crisis of 2009 may negatively impact planned industrial investments. However, public opposition to new energy infrastructure projects is a key barrier to new investments in grids that are necessary to enhance security of supplies and the integration of renewable energy sources in the supply system.

The Commission also had to pursue many Member States for inadequate implementation of the second internal market package, adopted 7 years ago (except for the Gas Regulation that was adopted in 2005).

4.2.4 Sustainable energy funding

4.2.5 An overview of other EU funding for sustainable energy

To fill the gap created by market failures and meet investment needs and EU energy targets, EU support is provided by a number of EU funding programmes and mechanisms in this field, covering a spectrum of activities from energy research and development to investment in energy infrastructure and promotion of best practices.

In the following paragraphs we cover these EU funding programmes and mechanisms, including the Framework Programme for Research and Development (FP7), the Structural and Cohesion funds (SF/CF), the European Energy Programme for Recovery (EEPR), the European Energy Efficiency Facility (EEE-F), the Trans-European Energy Network (TEN-E), the NER300 programme, the Common Agricultural Policy (CAP), the SET-Plan, the LIFE+ programme, and EIB lending in sustainable energy.

The **FP7** programme offers a great variety of opportunities for energy related research funding. The most obvious is the 'Energy Theme' of the Cooperation Programme which is solely dedicated to energy issues and provides funding of 2,35bnEUR over 2007-2013 for research, development and demonstration in hydrogen and fuel cells, renewable electricity generation, renewable fuel production, renewables for heating and cooling, CO2 capture and storage technologies for zero emission power generation, clean coal technologies, smart energy networks, energy efficiency and savings, and knowledge for energy policy making. Moreover, the Transport Theme of FP7 dedicates a part of its 4,16bnEUR for 2007-2013 to research, development and demonstration in reduction of emissions and alternative fuels in air transport, environmentally efficient aviation, as well as sustainable surface transport- rail, road and waterborne (development of clean and efficient engines and power trains, reducing the impact of transport on climate change, intermodal regional and national transport, clean vehicles, and integrative architectures) which are very relevant to energy policy. To give an order of magnitude, the Cooperation programme supports research and innovation in energy efficiency as a cross-cutting measure, resulting so far in more than 200 projects being financed with an EU contribution of 1 bnEUR. Aside from the Cooperation Programme, other FP7 programmes like 'People', 'Ideas' or 'Capacities' also offer many opportunities for energy related research.

Research, development and demonstration activities funded by FP7 programmes are diverse, and range from support to fundamental research through to promotion and dissemination of best practices and network creation, amongst others in the field of energy through programmes such as CONCERTO and CIVITAS.

The **Structural Funds** (European Regional Development Fund (ERDF) and the European Social Fund (ESF)) and **Cohesion Fund** support a vast range of activities, including funding for energy related matters. Examples are funding for energy efficiency improvements and renewable energies in industry, commerce, transport and public and residential buildings, cogeneration and local energy production, innovation for sustainable energy, and training for monitoring and evaluation of energy performance. As some of the energy-related investments may be reported by the Member States under other Cohesion Policy headings such as R&D, innovation, ICT, transport, buildings infrastructure, and integrated urban and rural regeneration, the actual overall support to the EU's Energy Policy is difficult to assess, but expected to be higher than the specific figures for energy funding below.

In the 2007-2013 programming period, allocated funding for energy-related activities under Structural and Cohesion Funds programmes totals about 11 bnEUR. The 11 bnEUR allocated to energy result from negotiations with the Member States which have varying levels of funding for energy, ranging from 7-8% for Italy to 0% for Denmark, and of which 9,2 bnEUR is dedicated to RES and EE (approximately 4,8 bnEUR of investments related to different types of reneawble energies and 4,4 bnEUR of investments related to energy efficiency, co-generation and energy management), while approximately 1,8 bnEUR is dedicated to traditional energy and interconnectors, again with varying levels across countries. Amendments to the ERDF Regulation have expanded its scope for sustainable energy investments in buildings. Whereas Regional Policy has traditionally financed energy efficiency investments only in public and commercial buildings, it is now possible to use these funds in the residential sector in all Member States. Up to 4% of the national ERDF allocations may now be used for energy investments in housing that supports social cohesion. Such investments have potentially multiple benefits in terms of local jobs and growth, tackling energy poverty and enhancing energy security. In addition, to encourage greater use of market instruments, another regulatory amendment extended the use of financial engineering instruments to energy efficiency and renewable energy in buildings, including existing housing. In this way, Regional Policy encourages public-private partnerships tailored to the specific market needs in this sector. A combination of grants and revolving funds can be developed in collaboration with financial institutions to set up regional support schemes.

There has, however, on average been a slow take-up of available Structural and Cohesion funds funding in the field of energy in the first years of the programming period, i.e. only 13% of available funding had been allocated to specific projects by September 2009, versus an average of 27% for other domains of the Structural Funds at that point in time, although this is expected to accelerate in the final years. To tackle this issue, and more generally the lack of take-up of EU funding, the Commission has created some financing instruments in cooperation with the European Investment Bank (EIB) as well as other IFIs like the EBRD, KfW or the CEB, addressing the dimensions of additional loan resources, contributing financial and managerial expertise from specialist institutions like the EIB, creating strong incentives for successful implementation by beneficiaries by combining grants with loans, and ensuring long-term sustainability through the revolving character of the ERDF contribution to financial engineering actions. Two specific initiatives are imple-

mented for the period 2007-2013 to provide loans, venture capital and guarantees for achieving Cohesion policy objectives:

1. JEREMIE - Joint European Resources for Micro to medium Enterprises - is an initiative of the Commission together with the European Investment Bank (EIB) and the European Investment Fund (EIF) in order to promote increased access to finance for the development of micro, small and medium-sized enterprises in the regions of the EU. JEREMIE offers to EU Member States and regions the possibility to invest some of their EU structural funds allocations in revolving funds and so recycle financial resources in order to enhance and accelerate investments in enterprises;

2. JESSICA - Joint European Support for Sustainable Investment in City Areas - is a joint initiative of the European Commission developed in co-operation with the European Investment Bank (EIB) and the Council of Europe Development Bank (CEB) which is aimed at supporting sustainable urban development and regeneration through financial engineering mechanisms. JESSICA offers to EU Member States and regions the possibility to invest some of their EU structural funds allocations in revolving funds and so recycle financial resources in order to enhance and accelerate investments in Europe's urban areas – also in the field of sustainable energy. For Member States or regions genuinely interested in the initiative, detailed JESSICA Evaluations Studies are being carried out to support them in determining how JESSICA could be best implemented in their respective constituencies.

In addition, the Joint Assistance in Supporting Projects in European Regions (JASPERS) provides technical assistance in the 12 new Member States (NMS). It will help the national and regional authorities to prepare large energy infrastructure projects, mainly for grant support.

While the Structural and Cohesion Funds are essentially oriented towards support for investment activities in the field of energy, certain sub-programmes like INTERREG IVB/C and the URBACT II programme are nonetheless of a softer nature and focus more on promotion and dissemination of best practices as well as network creation, amongst others in the field of energy.

The **European Energy Programme for Recovery (EEPR)** is a financing instrument providing grants for the development of projects in the field of energy in the EU that was introduced as a counter measure to the financial crisis in 2009. It aims to contribute to economic recovery, the security of energy supply, and the reduction of greenhouse gas emissions by providing a financial stimulus in the fields of gas and electricity infrastructures, offshore wind energy, and carbon capture and storage. Its total budget is 3.98 bnEUR which must be allocated by 2014, including the largest amount the EU has ever spent on energy infrastructure (as energy infrastructures are mostly private projects and are mainly funded by network operators through tariffs), and funding for the "Energy-efficient Buildings" public private partnership, providing 1 bnEUR in research methods and technologies to reduce the energy consumption of new and renovated buildings.

The **European Energy Efficiency Facility (EEE – F)** is a new investment fund complemented by technical assistance (TA) and awareness raising dedicated to sustainable agreed in December 2010 by The Council of Ministers and the European Parliament which aims to provide up to 800 mEUR of funding for EE, RES, and clean urban transport investments with approximately €146 million of its funding coming from leftover funds from the EEPR (125 mEUR of which will be placed as risk capital for investments and 20 mEUR to TA), 75 mEUR from the EIB, and 5 mEUR from

Deutsche Bank which will manage the fund (the facility has an initial fund volume of 205 mEUR - the remaining funding is yet to be found from development finance and the private sector).

The EEE-F will finance investments by local (municipal), regional and (where justified) national public authorities (having made demonstrated commitments to sustainable energy), or private companies representing these. The technical assistance will cover grants for project development services related to technical and financial preparation of projects to be financed by the fund. Finally, awareness-raising activities for national/regional authorities managing cohesion/structural funds in the field of sustainable energy are also envisaged.

The EEE-F funds (or at least the EU contribution therein) will have to be allocated to investment projects, project development services and technical assistance during a period of 3 years, which will end on 31st March 2014 (given this requirement for the EEPR funding).

The **Trans-European Energy Network (TEN-E)** programme encourages the effective operation and development of the internal EU energy market through interconnection, interoperability and development of trans-European networks for transporting electricity and gas. It thereby reinforces the security of supply and the diversification of energy suppliers and routes, facilitates the development and reduces the isolation of less-favoured regions, and contributes to sustainable development and protection of the environment, amongst others by developing renewable energies. TEN-E is essentially used on an exceptional basis to finance feasibility studies promoting infrastructure essential to the EU's energy needs without leading to distortion of competition in the internal EU energy market. Its budget is 155 mEUR from 2007-13 (around 20 mEUR per year). Other EU instruments such as the Structural Funds may in some cases part-finance investments related to TEN-E projects.

The **NER300** funding programme for demonstration of Carbon Capture and Storage (CCS) and innovative renewable energy technologies is a financing instrument managed jointly by the European Commission, European Investment Bank and Member States. It leverages 300 million allowances (rights to emit one tonne of carbon dioxide) from the New Entrants' Reserve of the European Emissions Trading Scheme which will be sold on the carbon market – potentially worth as much as 4.5 bnEUR if each allowance is sold for 15 EUR - to subsidise demonstration installations of CCS and innovative renewable energy technology, and thereby hasten the deployment of these new technologies, and ensure that knowledge about their functioning is quickly gained. The intention is to sign grant agreements in 2011 for its first call, and by 2013 for its second call, with projects from the first call (whether renewable energy, grid-related or CCS) having to be operating by Dec 31 2015, and those from the second call most likely by Dec 31 2017.

The **Common Agricultural Policy (CAP)** supports bioenergy by addressing both the supply of bioenergy from agriculture and forestry as well as the use of bioenergy on farms and in rural areas. Under the CAP, farmers producing bioenergy crops can receive EU support through an energy crop premium if they can prove that the crops enter the energy chain. Furthermore, the European Agriculture Fund for Rural Development (EAFRD) under the rural development policy addresses both the supply and the use of bioenergy including biogas production, perennial energy crops, processing of agricultural/forest biomass for renewable energy and installations/infrastructure for renewable energy using biomass, dedicating a part of the EAFRD's overall 96 bnEUR budget to this;

Under the **SET-plan**, a significant increase in investments in the supported technological avenues is foreseen, with 50 bnEUR to be invested by 2020[44]. Funding mechanisms are not yet in place for all of the initiatives but it has already been agreed that the EU-ETS will help to finance the SET-Plan through NER300 and through the auctioning of EU-ETS allowances from 2013 with the revenues being reinvested at national level in the development of more efficient and lower cost clean technologies (at the discretion of the Member States, but for at least 50% of the revenues). Moreover, the Joint Technology Initiative (JTI) on fuel cells and hydrogen was established for 2008-2013 with a budget of 470 mEUR of Community funding to be at least matched by industry to accelerate the development and deployment of cost-competitive European hydrogen and fuel cell based energy systems and component technologies for applications in transport, stationary and portable power.

The **LIFE+** programme funds projects focusing on environmental improvement, including initiatives on renewable energy, energy-efficiency, and sustainable transport. The general objective of LIFE+ is to contribute to the implementation, updating and development of Community environmental policy and legislation, including the integration of the environment into other policies. With regard to energy technologies, LIFE+ finances demonstration projects based on studies or tests that

[44] The amounts to be invested in total (by private and public actors) for the various initiatives are:

- 6 bnEUR for the European wind initiative aiming for 20% of EU electricity to be produced by wind energy technologies by 2020;
- 16 bnEUR for the Solar Europe Initiative to help photovoltaics and concentrated solar power become more competitive and gain mass market appeal and have up to 15% of EU electricity generated by solar power in 2020;
- 2 bnEUR for the European electricity grid initiative to support the internal market; integrate a massive increase of intermittent (renewable) energy sources, and manage the complex interactions between suppliers and customers, in order to have 50% of the EU's energy networks operating "smartly" (effectively matching supply and demand) by 2020;
- About 9 bnEUR for the sustainable bio-energy Europe initiative to bring the most promising bio-energy technologies to commercial maturity, and have large-scale, sustainable production of advanced biofuels and highly efficient combined heat and power from biomass for bio-energy to represent at least 14% of the EU energy mix by 2020;
- 13 bnEUR for the European CO2 CCS initiative to allow a wide commercialisation of CCS technologies by demonstrating these at industrial scale and reduce the costs of CCS by 2020;
- Approximately 7 bnEUR for the sustainable nuclear fission initiative to move towards sustainable new generation nuclear reactors, optimise the use of fuel and reduce the volume of radioactive waste with the first prototypes expected in operation in 2020;
- Around 11 bnEUR for the Smart Cities European initiative aiming to trigger the mass market take-up of energy efficiency technologies starting with 25 to 30 smart cities from which small networks, a new generation of buildings and alternative transport means will develop into European wide realities.

have shown initial promising results, bridging the gap between research funding and access to venture capital. Project themes include energy production and distribution, renewable energy technologies, energy-efficiency in different areas as well as the reduction of greenhouse gases. LIFE+ runs from 2007-2013 and has a total budget of 2.143 bnEUR;

The **EIB** is a major source of funding for energy projects in the EU. It increased its overall lending target in the field of energy to 9.5 bnEUR in 2009 and 10.3 bnEUR in 2010 (compared to 6.5 bnEUR in 2008), including lending for energy efficiency and renewable energy projects and a new equity fund (the "2020 Fund – Marguerite") dedicated to investments in Members States' renewable energy, TEN-T and TEN-E. Actual EIB lending for energy-related projects amounted to 37.4 bnEUR during the period 2005-2009 and 14.2 bnEUR in 2009 (13.3 bnEUR within EU-27), a 40% increase over 2008, with 1.5 bnEUR dedicated to EE in 2009 (11% of EIB lending to energy projects), 4.6 bnEUR to RES, an increase of 109% from 2008 and 29% of the EIB's energy financing, and 3.6% of 2009 RDI financing invested in energy. In doing so the EIB financed some 5% of installed capacity of wind to energy sector in Europe up to 2009 as well as leading edge investments in concentrated thermal power in Spain, funding both mature technologies – already used commercially (onshore wind farm, hydropower, geothermal and biomass) and emerging technologies – in an early implementation phase (photovoltaics, solar thermal and second generation biofuel production technologies).

The EIB's contribution to EU energy policy in fact concentrates on five priority areas being renewable energy, energy efficiency, research, development and innovation (RDI) in energy, security and diversification of internal and external supply (including trans-European energy networks), and carbon financing. It offers various loan formats in support of energy investment, depending on project size and category, as well as investing in equity funds and providing a Structured Finance Facility (SFF) and a Risk Sharing Finance Facility (RSFF) with the capacity to lend about 10 bnEUR to fund projects with a higher risk profile and enable equity financing as well as providing mezzanine and guarantee operations for infrastructure schemes to complement more conventional sources of finance such as grants, equity and loans. New instruments are currently under examination, including the "Europe 2020 Project Bonds" to provide EU support to private "project promoters" issuing bonds to finance infrastructure projects deemed as economically, financially and technically viable, and thereby attract capital market financing from institutional investors by absorbing part of the risk of the projects.

More generally, credit lines from IFI's and other public sector banks have provided an important source of finance for energy efficiency projects through intermediated finance via local banks. Use is often made of EU funding to provide technical assistance, either to the participating bank for capacity building, or for measures such as energy audits for final beneficiaries.

Next to these EU level funding sources is the **IEE II programme** with a budget of 727.3 mEUR from 2007-2013. This is detailed in the following subsection.

Finally, besides this EU level funding, the Member States naturally have a wide array of funding possibilities in place at national level, as well as different fiscal incentives, and the bulk of support for renewable energy is delivered at Member State level[45]. This is too broad to detail here.

[45] COM(2011) 31

4.2.6 The IEE II programme

The Intelligent Energy Europe II Programme (IEE II) supports projects to overcome energy market failures through activities aiming to remove the non-technological barriers to the development of sustainable energy, mainly consisting in the promotion and dissemination of good practices in RES and EE.

It is the successor of "Intelligent Energy for Europe" (IEE) (2003-2006)[46] which was designed as the main EU instrument for non-technological support in the field of energy, following on from the Energy Framework Programme (EFP) established between 1998 and 2002 to give unity to and co-ordinate six specific EU programmes in energy that had already existed for some time (SAVE covering energy efficiency, ALTENER renewable energy, SYNERGY co-operation with third countries, CARNOT some aspects of coal utilisation, SURE some limited aspects of nuclear energy, and ETAP energy modelling and analysis of energy policies.

IEE II like IEE I is intended to address the market barriers that hamper the efficient use of energy and increased use of new and renewable energies and therefore continues the ALTENER, SAVE and STEER programmes but not the SYNERGY programme which had been continued under IEE as COOPENER. It has also added a strong emphasis on raising awareness amongst those key organisations and individuals who are central to achieving the wider objective, namely that of accelerating the update of energy efficiency measures and the greater use of clean and renewable energy, in particular at regional and local level.

For this, and as recommended in the mid-term evaluation of the IEE programme, IEE II was included in the overarching Competitiveness and Innovation Framework Programme (CIP) in order to best contribute to achieving the objectives of EU energy policy and to implementing the Lisbon Agenda. The Competitiveness and Innovation Framework Programme (CIP) has several other schemes which also address sustainable energy amongst other areas including the high growth and innovative SME (GIF) equity financing scheme implemented for the Commission by the European Investment Fund (EIF) on a trust basis and. It covers different needs depending on the stage of development of the small business based on investment decisions using normal commercial criteria.

IEE II is managed by the Commission which adopts annual IEE II work programmes detailing the annual priorities, funding and evaluation criteria for each year of IEE II's implementation, after prior consultation of the Member States, via the IEE Management Committee (IEEC).

The Commission has however outsourced operational management of much of IEE II to the Executive Agency for Competitiveness and Innovation (ex "Intelligent Energy Executive Agency" (IEEA), which was created to facilitate the implementation of the programme by acting as an authorizing officer, by delegation of the DG Energy and Transport (DG TREN) for the promotion and dissemination projects, the largest part of IEE II). Exercising powers delegated by the Commission to implement the IEE II programme, the EACI carries out all operations necessary to implement the parts of the programme entrusted to it, in particular those connected with the award of grants and certain contracts (the management of some tenders for services have been transferred to the EACI – notably ManagEnergy, ELTIS, BUILD-UP, and SEEC). The EACI works on the basis

[46] IEE Programme was adopted by Decision No 1230/2003/EC of the European Parliament and of the Council of 26 June 2003.

of delegated powers, which are enshrined in the 'Act of Delegation'[47], and works in close cooperation with its parent Commission services – for Intelligent Energy Europe - in the Directorate-General for Energy. To date, the EACI has managed more than 400 IEE projects, the establishment of 80 new local or regional energy agencies, as well as 12 IEE II tenders. The EACI also jointly manages the concerted actions with the Commission.

Moreover, the Commission has outsourced part of the management of the market replication projects to several IFIs) - the EIB (ELENA-EIB), KfW (ELENA-KfW) and CEB (ELENA-CEB). The market replication projects (ELENA facility) are managed under sub-delegation agreements with DG ECFIN, and resulting Contribution agreements with the IFIs which allow to leverage existing know-how in these institutions.

The programme has a budget of 727,3 mEUR for the period 2007-2013 (within an overall CIP budget of 3,6 bnEUR). The bulk of this budget has been dedicated to over 200 relatively small promotion and dissemination projects to date led by different consortia of organizations from minimum three countries, but it is also used to provide technical assistance to investment projects in RES and EE (so-called market replication projects which aim to replicate good practices), and to fund initiatives to improve the implementation of sustainable energy legislation in Member States (concerted actions) based on the relevant EU legal framework, as well as tenders feeding the Commission's sustainable energy policy work. Within this overall programme budget, the annual operational budgets of the IEE II programme have increased from 65 mEUR in 2007 to over 104 mEUR in 2011, as shown below:

Table 3: Budget allocation for the IEE II work programmes 2007-2011

Budget (k €)	2007		2008		2009		2010		2011		Total	
Promotion and dissemination projects from calls	51904,6	88%	45446	72%	64741	73%	55770	54%	57084	55%	274945,6	66%
Market replication projects	0	0%	0	0%	15000	17%	15000	14%	30000	29%	60000	14%
Concerted action projects	3100	5%	2000	3%	0	0%	10000	10%	3000	3%	18100	4%
Tender projects	3886,4	7%	13720	22%	9000	10%	16750	16%	11175	11%	54531,4	13%
Others projects	0	0%	1750	3%	0	0%	6040	6%	3240	3%	11030	3%
Total budget for projects	58891	100%	62916	100%	88741	100%	103560	100%	104499	100%	418607	100%

Source: IEE annual work programmes, own calculations

IEE II has its objectives and scope defined in the CIP decision[48]. The programme's objective is to support the overcoming of non-technological barriers (including informational, behavioural, institutional and financial barriers) to the innovation, uptake, implementation and dissemination of solutions that contribute to sustainable, secure and competitively priced energy for Europe. The programme mainly focuses on "the removal of market barriers and creating a more favourable business environment for increasing energy efficiency and renewable energy markets (including clean transport), changing behaviour, raising awareness, and making EU energy policy better understood and implemented in Europe's cities and regions."

[47] Commission Decision C (2007) 3198 of 9 July 2007 delegating powers to the Executive Agency for Competitiveness and Innovation with a view to performance of tasks linked to implementation of the Intelligent Energy – Europe Programme 2003-2006, the Marco Polo Programme 2003-2006, the Competitiveness and Innovation Framework Programme 2007-2013 and the Marco Polo Programme 2007-2013 comprising in particular implementation of appropriations entered in the Community budget.

[48] Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme (2007 to 2013)

As stated in article 37 of the CIP decision, IEE II shall provide for action, in particular:

a) to foster energy efficiency and the rational use of energy resources;

b) to promote new and renewable energy sources and to support energy diversification;

c) to promote energy efficiency and the use of new and renewable energy sources in transport.

Furthermore, as stated under article 38 of the CIP decision, the programme's operational objectives are to:

a) provide the elements necessary for the improvement of sustainability, the development of the potential of cities and regions, as well as for the preparation of the legislative measures needed to attain the related strategic objectives; develop the means and instruments to follow up, monitor and evaluate the impact of the measures adopted by the Community and its Member States in the fields addressed by the Programme;

b) boost investment across Member States in new and best performing technologies in the fields of energy efficiency, renewable energy sources and energy diversification, including in transport, by bridging the gap between the successful demonstration of innovative technologies and their effective, broad market uptake in order to attain leverage of public and private sector investment, promote key strategic technologies, bring down costs, increase market experience and contribute to reducing the financial risks and other perceived risks and barriers that hinder this type of investment;

c) remove the non-technological barriers to efficient and intelligent patterns of energy production and consumption by promoting institutional capacity building at, inter alia, local and regional level, by raising awareness, notably through the educational system, by encouraging exchanges of experience and know-how among the main players concerned, business and citizens in general and by stimulating the spread of best practices and best available technologies, notably by means of their promotion at Community level.

The instruments and mechanisms of the IEE II programme (grants to promotion and dissemination projects through call for proposals and project development services for market replication projects, procurement through call for tenders, and concerted actions) are also defined in Articles 43 and 44 of the CIP Decision and the Financial Regulation applicable to the general budget of the European Communities.

The future prioritization and implementation of IEE II is not yet known given its annual programming. A final evaluation of the programme is currently ongoing and will perhaps identify potential improvement areas and orientations for 2012 and 2013. Moreover, although 2013 will likely be the last call for promotion and dissemination projects under IEE II, the programme's activities will most probably last until 2016 given that these projects last up to three years.

As recognised in a report on the synergies between IEE and other EU initiatives[49], IEE fills a gap in the EU sustainable energy funding ecosystem as it is unique in addressing the non-technological barriers to the development of sustainable energy in the EU.

4.2.7 Additional efforts in the challenging economic context

The EU has somewhat responded to the need for additional efforts on sustainable energy development in the challenging economic context, for instance by creating the EEPR funding programme, increasing SF/CF the funding envelope for sustainable energy, and more recently, contributing to the establishment of the EEE-F facility from EEPR funding. While this is a decided step in the right direction, further efforts are required as seen above.

In establishing appropriate financing mechanisms for the rapid development of sustainable energy at EU level, the Commission must now take into account the major needs in its work with various financial institutions to set up new funding mechanisms and financial instruments, and adapt existing ones for the financial perspective 2014-2020. The focus for this should be on opportunities to use EU and national funds to leverage private capital in energy projects of European interest on local, regional, national and European levels, and to ensure the wide diffusion of know-how in this area[50]. Better coordination of the many different EU funds which exist for stimulating sustainable energy will also be needed in order to stimulate energy innovation and push energy- and climate-related demand in the desired direction. Indeed, these are currently not optimally coordinated (as mentioned in the Energy Policy for Europe Commission communication and SET-Plan). The proposal for a new multiannual financial framework is planned to be proposed in second quarter 2011 and will likely streamline and simplify the existing architecture, for example with a stronger emphasis on financial engineering and leverage funding in order to optimise management and impact.

IEE II can play a role in this in several ways including the promotion and dissemination of existing best practices, as well as more direct support to mobilising investments, such as through the increasing ELENA funding under the market replication component of IEE II (this funding has increased throughout IEE II, and in the 2011 Work programme, it was extended with two additional compartments, to be managed under similar conditions to the first, by the Council of Europe Development Bank (CEB) and KfW Bankengruppe, respectively, for project development services for smaller sustainable energy investments (below 50 mEUR) specifically addressing social housing and carbon crediting connected to energy efficiency.) or the Mobilising local energy investments (MLEI) integrated initiative under the promotion and dissemination component of IEE II which has been launched in the 2011 work programme, and aims to support projects in providing technical assistance to mobilise local energy investments following the model of ELENA very closely (the initiative has been developed with assistance from the EIB) but through calls for proposals.

The EU funding in sustainable energy should only be phased out once the market failures hindering sustainable energy operating in a competitive energy market are alleviated. There is a long way to go before the full social costs and benefits of various energy forms and technologies are ade-

[49] Synergies between the EU 7th Research Framework Programme, the Competitiveness and Innovation Framework Programme and the Structural Funds, 2007, *ETEPS AISBL Network for European Techno-Economic Policy Support*

[50] COM(2008) 781

quately reflected in the price that consumers pay for the related products and services, and inadequate levels of emission taxes and the persistence of subsidies that create adverse incentives with respect to conversion from fossil fuels and excessive forms of transport make it difficult to achieve EU energy policy objectives.

4.3 Why is a successor to IEE II needed?

Several factors must be taken into account when assessing the need for a successor to the IEE II programme, including both theoretical and practical considerations:

- The existence of underlying EU sustainable energy development needs;
- The fact that the programme is the most appropriate undertaking in its field, in terms for instance of its cost effectiveness and added value;
- The alignment of the programme with the EU policy and objectives responding to these needs, as well as with the other elements of the EU's policy and interventions;
- The need for stability (continued efforts) in the programme's field, such that an environment of confidence can be created for undertakings aiming to address the non-technological barriers to sustainable energy.

The first above factor results from the previous section. The following three factors are addressed below.

4.3.1 Value of intervening at EU level for sustainable energy development

The EU's right to act on sustainable energy is integrated in the Treaty on the Functioning of the European Union, Article 194 (1) which states that: *"In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; (d) promote the interconnection of energy networks."*. It follows from the value of public intervention at EU level on sustainable energy, and the importance of sustainable energy to the EU's security of energy supply, competitiveness, and sustainability and climate change objectives.

Taking into account the principles of subsidiarity and proportionality, it exists because the value of coordinated and coherent EU-level intervention is higher than fragmented action in the different Member States in a number of activities in this field. This is due to the existence of the single EU internal energy market with free movement (e.g. energy-using products, vehicles) with a risk of internal market distortions if Member States take individual measures, because of the scale of some of the measures needed, due to the cost of a common approach often being lower than the costs of different national approaches, and because some barriers to higher uptake of sustainable energy are not sufficiently addressed at national level.

The barriers to the development of sustainable energy can be addressed in a number of ways for which the EU dimension adds value to interventions[51]:

- The definition of sustainable energy policy is best done at EU level as having different national rules, standards and regulations can distort the market's functioning or cost more. It is therefore appropriate to provide a detailed regulatory framework at the European level;

- Establishing a common framework which creates the basis for coherent and mutually reinforcing mechanisms for sustainable energy development is also better done at EU level to ensure consistency and coherence and gain economies of scale, while leaving the Member States to set specific details in a transparent and comparable way. This is most applicable in areas where there are major national differences (e.g. climate, construction, fiscal policies) and there is no need for full harmonization of the approaches but only for setting of common instruments and requirements (e.g. in buildings);

- Creating a platform for exchanging best practices and stimulating capacity building in sustainable energy is most relevant at EU level, again for consistency, coherence, and economies of scale. This is of course most applicable where less advanced Member states can profit from dissemination of the experience of more advanced Member States (e.g. awareness raising, training), given that EU action can allow for the wider dissemination of information;

- Using EU instruments to promote sustainable energy, e.g. through financing, and to mainstream it into the other policy areas complementing national funding. While the EU does not dispose of sufficient funds to match the need for funding it can fill gaps in existing initiatives to mobilise funding. EU funds can for instance be used to leverage third party financing. Once more, economies of scale can be created, and moreover the experience of EU level actors like IFIs can best be leveraged. Furthermore, a greater convergence of national support schemes can be achieved this way, as is needed to facilitate trade and move towards a more pan-European approach to development of renewable energy sources[52]. Moreover, too frequent changes in the legal framework make the investment climate risky. Some Member States lack administrative capacity to develop energy efficiency legislation and wait for its advancement at EU level. This has made the EU policies a key driver for energy efficiency legislation in some Member States but also reduces the national ownership of the policy instruments.

Within a common EU framework, Member State level intervention is naturally also essential for the realization of the EU energy policy given the specific national situations, and sufficient margin for manoeuvre therefore needs to be integrated into such a framework.

Furthermore, as mentioned above, addressing the needs for the development of sustainable energy must be done bearing in mind the continuum of activities from research and development of new sustainable energy technologies through to market deployment of existing and future technologies

[51] SEC(2011) 277

[52] COM(2010)639/3 Energy 2020: a strategy for competitive sustainable and secure energy, p10

and solutions, and the needed synergies between the different activities in this continuum. Public intervention (at EU level where appropriate) must cover all relevant market failures across this spectrum and strong links should be created between the different activities put in place to specifically cover the different market failures and barriers to the development of sustainable energy, which call for an integrated management and steering of these.

In this perspective, sustainable energy programmes at EU level, and particularly to address key barriers most effectively handled at that level in terms of information, capacity and financing, are of significant added value, and there is clearly a need for programmes like those in place today (see 4.1.2.1 above) including IEE. These should be integrated coherently with other initiatives in activities such as sustainable energy research and development, and market deployment.

The current period is pivotal in the development of sustainable energy, and the EU should ensure that increased focus in this area is leveraged to put in place adequate policy, regulation and funding to achieve its energy policy objectives, despite budgetary constraints.

4.3.2 Need to specifically tackle non-technological barriers to the development of sustainable energy

As seen above, there are a number of EU programmes in place to tackle the different barriers to the development of sustainable energy. These are mostly defined for the current financial perspective, i.e. till 2013, and while their continuation thereafter is under review, we take as a starting point that this will be the case for major programmes like the FP7 and the SF/CF.

We also note that besides the continued need for major R&D in sustainable energy (e.g. under the SET-Plan and FP7 energy theme), the successful achievement of EU energy policy objectives will strongly rely on better leveraging existing technologies in sustainable energy[53] by tackling the non-technological barriers which can be considered as market failures leading to their low market uptake, such as the lack of information, capacity, or financing for actors in this field.

Moreover, the evolution of the non-technological market barriers, and increasing general awareness on the topic of sustainable energy, does not make public intervention redundant. Indeed, while the barriers have evolved, and will continue to do so, significant barriers remain[54] and increased focus on these is needed to obtain results, as shown above.

The IEE programme has been unique to date in filling a gap in the EU sustainable energy funding ecosystem by providing support to many activities to address these non-technological barriers at EU level not taken up elsewhere, and has thereby performed a valued role, recognised to some extent by its continuation as IEE II under CIP. In so far as these activities are not taken up by other programmes, a gap in the abovementioned continuum of activities for supporting the development of sustainable energy at EU level would be created.

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[53] As mentioned in the Action Plan for Energy Efficiency (COM(2006)545) and Renewable Energy Roadmap (COM(2006) 848)

[54] Assessment of non-cost barriers to renewable energy growth in EU Member States - AEON, DG TREN No. TREN/D1/48 – 2008

Given this, and the added value of EU-level activities, we note that need to continue the type of activities undertaken under IEE II at this level, covering e.g.:

- Ensuring increased awareness and information on sustainable energy objectives and solutions, and address skills gaps to change the behaviour of energy users and suppliers;
- Reinforcing the capacity of actors in the field of sustainable energy by:
    - Setting up public-private partnerships for qualification and training schemes;
    - Building / reinforcing of networks of market actors so that they can more efficiently share know-how, procedures, and best practices;
- Generating and leveraging significant investments in EE and RES through:
    - Flexible financial instruments in collaboration with financial institutions and private investors;
    - Encouraging new suppliers of sustainable energy products and services to emerge and/or helping existing suppliers to grow by working to create more favourable market conditions and economies of scale in a single more competitive EU market.
- Supporting the development and implementation of the EU sustainable energy policy;
- Improving market conditions for sustainable energy activities;
- Addressing any other non-technology barriers to the deployment of the sustainable energy.

The extent to which these activities must be grouped together, and potentially with other related activities, depends mostly on whether synergies can be created which add value. IEE II has diversified the nature of activities undertaken under the IEE programme, and tried to integrate these with other innovation related activities under CIP. As detailed in a following chapter, there have correspondingly been synergies observed, although these can be improved, arguing to some extent in favour of maintaining the activities grouped, at least at the level of IEE. Another point worth noting in this respect is that of the need for stability in order for actors in the field of sustainable energy development by tackling non-technological barriers, to avoid stop-start public interventions, and ensure a reasonable degree of risk to undertakings. The IEE programme provides a known and appreciated form of support today (as testified by results of the websurveys performed for this evaluation in which project participants identified the programme as adding more value than potential alternatives where these exist), and as such, its continuation would contribute to the sustainability of public intervention in the domain, albeit incorporating any necessary adaptations based on lessons learned from the past. This is true both for the participants of the programme and its beneficiaries and targets, and for the management structure in place which benefits from years of experience accumulated since the programme's inception.

5.Policy objectives

This section of the report provides an updated view of the potential objectives, scope, and intervention logic of a successor to the IEE II programme, based on desk research and outcomes of discussions with stakeholders.

It addresses the impact assessment question: what are the general, specific and operational objectives of the EU initiative?

In doing so, it takes into account the full scope of potential IEE objectives, independently of the fact that a potential successor to IEE II would not necessarily cover this full scope, but might focus on a more limited perimeter considering the available means, and based on the expected effectiveness and efficiency of such an approach. The objectives defined below should therefore not be taken as such as the objectives of a successor to IEE II, but rather as the envelope within which these objectives could be defined.

The policy options presented in a subsequent section then develop potential focus areas within the full scope of potential IEE objectives.

5.1 Contributing to sustainable energy by tackling non-technological barriers

The overall EU energy policy goals and the "20/20/20" targets to which the IEE programme contributes are ambitious, and specific, measurable, achievable, relevant and time bound objectives ("smart" objectives) are required for participating initiatives such as IEE in order to measure progress against, and take action to achieve these. Such objectives are also needed to define the adequate budget level for the programme taking into account cost-effectiveness.

As the IEE programme only addresses a part of the EU energy policy in the field of sustainable energy development through tackling the non-technological barriers within a greater overall framework, and is one among a number of policy initiatives and programmes contributing to the attainment of these targets, its objective and expected impact cannot be the overall attainment of the EU energy policy targets in this field. The difficulty is then to identify which specific objectives and expected impacts can be accounted for by IEE within the overall EU energy framework, all the more so due to:

- *The programme's "soft" nature* in that it does not directly fund investments in sustainable energy technology deployment leading to measurable impacts on the energy policy targets, but rather participates to the reduction of barriers to their wider uptake. For this reason, measurable objectives may need to be defined based on standards and accepted methodologies for assessing the impacts of indirect measures, or related to the links between the programme and other initiatives delivering direct measurable impacts.

- *The fact that IEE funding is a small proportion of the overall available funding* for the development of sustainable energy – its 2007, 2008 and 2009 operational budgets represented roughly 0,06%, 0,06%, and 0,08% of new global investment in sustainable energy respec-

tively[55]. With respect to subsidizing investments in energy-efficiency improvements, renewable energy supply and cleaner transport, direct EU funding of greater magnitude is provided by FP7, the Structural and Cohesion funds, EEPR, and various loans and financial instruments of EU-level IFIs such that IEE funding for RES accounted for roughly 1% of EU-level RES funding in the period 2007-2009, although that proportion increases to roughly 7% if only non-loan funding at EU level is considered[56].

These figures, although rough estimates, give some perspective, especially when taking into account that the majority of sustainable energy funding is covered by a vast number of national funding schemes that vary greatly in magnitude. Notwithstanding, feedback from the IEE II final evaluation shows a lack of consensus amongst stakeholders as to whether the budget of the IEE II programme is adequate to achieve the programme's objectives and maximum impact for money invested. Budget magnitude considerations are relevant in assessing a potential successor to the IEE II programme, since there is a need for action despite the current tough budget climate given the recent financial and economic crisis.

- *The existence of large outside influences, strongly impacting on IEE's potential success.* The main outside influence for IEE, given it mainly encompasses existing technology, is the cost of energy generated by different non-renewable sources. This is not significantly influenced by IEE which likely only very marginally impacts the cost of energy generated by renewable sources, although it may be influenced to a larger extent by other elements of the EU energy policy including financial or fiscal instruments – national energy taxes and subsidies related to the generation of consumption of specific energy products, CO2 taxes, and the Kyoto-related instruments for CO2 emissions trading such as the EU ETS – also make a substantial contribution in stimulating (and sometimes creating disincentives) to behaviour that leads towards the EU targets for sustainable energy. Binding measures for specific energy- and climate-related actions and standards with respect to buildings, industry, transport, electrical appliances and other products and technologies also play a role.

In essence, we can qualify the IEE programme in its current format as a small accelerator of sustainable energy development within the EU, complementing the many other activities at National and EU levels, and which cannot in itself be held accountable for the somewhat disappointing recent progress towards the EU's "20/20/20"[57]. If IEE were to remain at its current scale (budget-wise) and in its current format, it could only be responsible for a small fraction of the ultimate "20/20/20" objectives (although it should aim for multiplication effects), and would continue to be faced with the policy disentangling problem. Therefore, despite the difficulty to identify smart objectives (specific, measurable, achievable, relevant and time bound) for the potential successor programme this effort should be undertaken as these would be necessary for it to be able to be effectively measured and optimally managed on this basis. An inverse approach to deriving the appropriate budget for the programme could be followed, and the appropriate objectives defined based

[55] Own calculations based on IEE programme data and UN estimates for global new investment in sustainable energy in 2009

[56] Own calculations based on publicly available data from the EC

[57] See COM(2011)31 final

on the set budget, were this to be a fixed parameter. Defining these objectives would then provide a solid foundation for justifying and following up the activities undertaken.

The key underlying assumption of the current IEE II approach demonstrated by its large scope, objectives, and range of instruments today, is that it is more effective and efficient to cover a broad spectrum of activities in tackling non-technological barriers to the development of sustainable energy to a relatively small extent than to focus on a smaller number of these to a larger extent.

This assumption should be re-assessed - as we have done below - in defining the objectives for the potential successor to IEE II as it is fundamental, and not necessarily valid. The reasoning behind the assumption is that the critical mass of activities is low, or that it can be achieved by consolidating a number of smaller fragmented activities. Given the difficulty to measure the effective impacts of IEE to date we have not found available research-based evidence in this area (this could be a determining factor of future policy orientation and worth undertaking). Our assessment of this point is therefore based on the perceptions of IEE programme management and participants.

Taking into account that there is no consensus between stakeholders on the appropriateness of the current budget level to tackle the full scope of defined IEE II objectives, or on the allocation of budget within the IEE II budget to the different activity types and instruments, and that they believe that more budget could be allocated to a successor to IEE II in order to best tackle its objectives, we conclude that choices must be made between the different activity types and instruments to be covered by a successor to IEE II if the budget remains at its current magnitude. The underlying assumption is that programme activities should be performed at a slightly larger scale or at least with stronger coordination to ensure achieving critical mass in the defined priority areas (e.g. for activities related to energy efficiency in buildings).

Given the difficulty to identify the “silver bullet” in the different fields covered by IEE, such increased focus should not be pushed to the extreme, but should be marginal with respect to the current structure. Indeed, although IEE II’s approach cannot be objectively measured as optimal, there is plenty of anecdotal evidence to suggest that the programme’s projects have positive impacts, and that the nature of its activities makes these best be carried out at EU level.

Nevertheless, the perception is that the programme would need a leaner focus (although opinions differ on how to achieve this and which objectives to maintain) and corresponding more quantitative operational targets from which a link could be established between project and programme performance and progress towards the overall policy objectives. These could take into account the different types of activities funded by IEE (see next sections), and the fact that some IEE projects have measurable impacts on energy savings, renewable capacity, investment and CO2 reduction (e.g. the EUREM.NET project) while, for others, these indicators are not appropriate (eg Odyssee-Mure, the EU reference for monitoring EE progress). Ultimately, the success of the IEE programme must be measured, both quantitatively, on the basis of measures corresponding to the "20/20/20" targets where possible, and qualitatively, e.g. through selected learning or adoption curves for supported technologies.

Besides the relative impacts of the different types of activities, synergies and overlaps with other EU initiatives are important to consider as they indicate the potential for creating critical mass through combined efforts, or of de-prioritizing overlapping activities. Furthermore, the cost of managing a potential successor to IEE should not be neglected. These aspects are all treated in the

subsequent sections on the impacts and comparison of the defined policy options for a successor to IEE II.

5.2 Full potential scope and objectives of the IEE programme

In the previous section we confirmed the continued needs for the development of sustainable energy, including in the field covered by the current IEE II programme, as well as the EU's right to act, and current responses. We noted that the major EU programmes in place are defined for the current financial perspective, i.e. till 2013, but will most likely be continued in the next financial perspective, in line with the continued EU energy policy. Given this, and the added value of EU-level activities, we therefore concluded that there is a definite need to continue the type of activities undertaken under IEE II at EU level.

In as far as the activities funded under a successor would be similar to those under IEE II, and the IEE II programme objectives are considered relevant for the current and future programming period, and are sufficiently broad to cater for the adapting barriers to sustainable energy development, these should form the basis for the objectives of a successor programme. We highlight these in section 5.2.1 below.

Notwithstanding:

- The barriers to the development of sustainable energy are evolving, having somewhat shifted from a lack of awareness of RES and EE solutions to a lack of understanding of how to implement such solutions in practice, linked to a lack of capacity and financing to do so. Correspondingly, the balance of EU support activities should also shift from pure promotion (awareness raising) towards more capacity building and support for financing – not only direct, but also in terms of know-how, as it is not sufficient to devise policy and legislation, but follow-up of these "on the ground" is also needed for successful implementation;

- It is noteworthy that the current objectives of IEE do not score highly in terms of being smart objectives as they are neither easily measurable, nor time bound;

- Taking into account the existence and ongoing development of different funding support mechanisms similar to those foreseen under the current market replication component of IEE II, the question of whether the different types of activities currently grouped under IEE II should remain so can be asked. The answer to this question would naturally impact on the objectives of a successor to IEE II, and is a key element of our subsequent policy options and impact analysis.

We therefore identify some potential adaptation needs to the IEE objectives and scope of activities to ensure effective intervention in section 5.2.2.

5.2.1 Existing IEE objectives and scope

The IEE programme's specific role within the overall EU energy and climate policy is currently enshrined in the legal base of the Competitiveness and Innovation Framework Programme (CIP)[58] in which IEE II was integrated for 2007-2013. As per the CIP decision, IEE's objective is to support the overcoming of non-technological barriers (including informational, behavioural, institutional and financial barriers) to the innovation, uptake, implementation and dissemination of solutions that contribute to sustainable, secure and competitively priced energy for Europe by focusing mainly on *"the removal of market barriers and creating a more favourable business environment for increasing energy efficiency and renewable energy markets (including clean transport), changing behaviour, raising awareness, and making EU energy policy better understood and implemented in Europe's cities and regions."*. It is to contribute to secure, sustainable and competitively priced energy for Europe, "*by providing for action:*

- *to foster energy efficiency and the rational use of energy resources;*
- *to promote new and renewable energy sources and to support energy diversification;*
- *to promote energy efficiency and the use of new and renewable energy sources in transport."*

More specifically, it aims to:

- *"Provide the elements necessary for the improvement of sustainability, the development of the potential of cities and regions, as well as for the preparation of relevant legislative measures;*
- *Bridge the gap between the successful demonstration of innovative technologies and their effective, broad market uptake in the fields of EE, RES and energy diversification, including in transport;*
- *Remove non technical barriers to efficient and intelligent patterns of energy production and consumption by promoting institutional capacity building; the exchange of experience and best practices."*

As a general conclusion, the interim and final evaluations of IEE II (the final evaluation of IEE II is ongoing and given the parallel timing with this study, results of this evaluation can only partially be used to inform this ex-ante evaluation/impact assessment)[59] identify that the programme is in line with the current EU energy policy which confirms sustainable, secure and competitive energy as core its objectives, and a pillar of the Europe 2020 strategy. They note that IEE II is contributing to meeting the objectives of more secure, competitive and sustainable energy by promoting energy

[58] Decision N°1639/2006/EC of the EP and the council of 24 October 2006 establishing a Competitiveness and Innovation Framework Programme (2007 to 2013), OJ L 310/15, 09.11.2006

[59] Interim Evaluation of the Intelligent Energy-Europe II Programme within the Competitiveness and Innovation Framework Programme (27/04/2009) and Final Evaluation of the Intelligent Energy-Europe II Programme within the Competitiveness and Innovation Framework Programme

efficiency and the utilisation of renewable energy in Europe, including in the transport sector, and that the general and specific objectives of the IEE programme, as stated in the CIP decision, are clearly still in line with the EU energy goals and remain relevant for the next programming period, taking into account that:

- The IEE II programme is still consistent with the EU policy initiatives and actively contributes to meeting the set targets;
- The covered needs are best addressed at the EU level, at least when overall policy, frameworks, and exchange of knowledge and best practices are concerned (with different instruments needed in these fields);
- The IEE II programmes' specific and operational objectives directly respond to the general EU policy objectives in the field of energy. The actions supported under promotion and dissemination projects (SAVE, ALTENER, STEER, and the Integrated Initiatives) and market replication projects (ELENA facility) as well as the tenders oriented towards the support of EU policy implementation in the field of energy are in line with the IEE II programme objectives. Expected results of the actions supported are to provide EU added value and positively support the EU policies in the field of energy;
- In addition to the relevance of its objectives, the use of annual work programmes allows the IEE II programme to follow the most recent EU energy policy developments;
- IEE II reduces the non-technological barriers by supporting activities in the fields of policy support, capacity building, dissemination and promotion and market replication projects. IEE II strengthens the European dimension by fostering the transnational exchange of information and creation of networks;
- The problem and needs analysis demonstrates that there remain non-technological barriers which slow down the uptake of sustainable energy technologies. While substantial awareness and information barriers remain crucial (moreover in the New Member States), it seems that these have on the whole shifted from a lack of awareness of RES and EE solutions to a lack of understanding of how to implement such solutions in practice**;**
- It cannot clearly be shown that alternative activities to those of IEE would be more effective in supporting the uptake of sustainable energy through addressing demand-side and supply-side non-technological barriers.

To some extent the current IEE objectives remain relevant, not only at strategic level, but also at operational level, due to their broad scope and coverage which allows them to take into account the evolving context and EU priorities in the development of sustainable energy. The CIP decision also institutes that the funding priorities of the IEE II programme are to be defined in annual work programmes[60], in order to be able to adjust to future developments, thereby allowing for flexibility within the broad covered scope. Changing needs, as perceived by the Commission and the IEEC,

[60] Subject to consultation by other relevant DG's via the inter-service consultation, opinion by the IEEC and scrutiny by the European Parliament before being adopted by the Commission

can indeed be reflected in the annual work programmes to the extent these are within the covered scope.

The current scope of IEE programme activities encompasses a number of instruments and fields which are felt to be sufficient[61]. The instruments covered are:

- Co-financed promotion and dissemination projects (typically of about one to two million €, and currently amounting to two thirds of the IEE II programme) involving minimum three EU partners and which can include:
    - Strategic studies on the basis of shared analysis and regular monitoring of market developments and energy trends for the preparation of future legislative measures or for the review of existing legislation, including as regards the functioning of the internal energy market, for the implementation of the medium and long term strategy in the energy field to promote sustainable development, as well as for the preparation of long-term voluntary commitments with industry and other stakeholders and for the development of standards, labelling and certification systems;
    - Creation, enlargement or reorganisation of structures and instruments for sustainable energy development, including local and regional energy management, and the development of adequate financial products and market instruments;
    - Promotion of sustainable energy systems and equipment in order to further accelerate their penetration of the market and stimulate investment to facilitate the transition from the demonstration to the marketing of more efficient technologies, awareness campaigns and the creation of institutional capabilities, in particular aimed at implementing the clean development mechanism and joint implementation under the Kyoto Protocol;
    - Development of information, education and training structures, the utilisation of results, the promotion and dissemination of know-how and best practices involving all consumers, dissemination of results of the actions and projects and cooperation with the Member States through operational networks;
    - Monitoring of the implementation and the impact of Community legislative and support measures;
    - Provision of technical assistance assistance to mobilize local energy investments by local or regional public authorities (municipalities, cities, provinces, regions)[62].

[61] Detailed in Articles 39 to 44 of the CIP Decision and the Financial Regulation applicable to the general budget of the European Communities

[62] The condition of projects involving minimum three EU partners is not valid for these projects which must be submitted by one or more local or regional public authorities (municipality, city, province, region) or other public bodies based within a single country or in more than one country. Groupings of local authorities must represent neighbouring local authorities located in a determined geographic area.

While there may be some similar projects to those undertaken under IEE II in rare cases (e.g. under INTERREG IVC or LIFE+), no other programmes at EU-level undertake these with a similar approach and focus to IEE II.

- Co-financed market replication projects, currently amounting to 14% of the IEE II programme budget, which consist of project development services (or so-called technical assistance) to facilitate local energy investment programmes by regions, municipalities and cities through the European Local Energy Assistance facility (ELENA) which covers a share of the cost for technical support that is necessary to prepare, implement and finance the investment programme, such as feasibility and market studies, structuring of programmes, business plans, energy audits, preparation for tendering procedures - in short, everything necessary to make cities' and regions' sustainable energy projects bankable. Their aim is to promote and achieve broader utilisation of innovative techniques, processes, products or practices of EU relevance, which have already been technically demonstrated with success within the participating countries, and facilitate their market uptake by addressing the human resource and transaction costs barriers that often prevent local governments from going ahead with large scale energy-saving and energy conversion programmes.

  The support for market replication projects was first introduced in the 2009 IEE work programme. It somewhat resembles the technical support provided under certain other existing or future facilities at EU level (JASPERS, JEREMIE, JESSICA, EEE-F) with the key differences that it is independent from the financing instrument and source for the underlying investments (similarly to the new MLEI integrated initiative), and ensures a more programmatic approach to investments;

- Fully financed calls for tenders (procurement) currently amounting to 13% of the IEE II budget, covering:

  - Studies to obtain information needed for future policy making;

  - Technical inputs for reports required by EU Directives in the field of sustainable energy;

  - Services assisting the Commission in the management and implementation of specific initiatives in sustainable energy development, such as ManagEnergy, the Covenant of Mayors or the Sustainable Energy Europe Campaign.

  Tenders are for procurement tailored to the needs of the Commission for the development of EU energy and climate policy, reports or services. Those for studies and technical inputs for reports are managed by the Commission while those for services are increasingly outsourced to the EACI. Some other tenders for DG ENER in the field of sustainable energy are managed outside of the IEE II programme (and budget), but there is no other source of funding of similar scale for such tenders;

- Other financed specific activities for restricted target groups such as:

  - Concerted actions (CA) with Member States and participating countries for the optimised implementation of EU legislation (4% of the IEE II budget). Three such

actions have been created under IEE II for the implementation of the EPBD, Energy Services, and RES Directives (the first two of which were renewed after the end of their initial three year duration). These are managed jointly by the Commission and the EACI and provide a confidential forum for the responsible officials from Member States to share their experiences in the implementation of the Directives;

- Actions with standardisation bodies, etc.

No similar activities with the same scope and focus were identified as being undertaken by other EU initiatives.

The IEE fields are:

- Energy efficiency and rational use of energy (SAVE)[63] supports projects that:
  - improve energy efficiency and the rational use of energy, in particular in buildings and industry;
  - support the preparation and application of Community legislation;
- New and renewable energy resources (ALTENER)[64] co-finances projects that:
  - promote new and renewable energy sources for centralised and decentralised production of electricity, heat and cooling, and thus supporting the diversification of energy sources;
  - integrate new and renewable energy sources into the local environment and the energy systems;
  - support the preparation and application of legislative measures;
- Energy in transport (STEER)[65] to promote energy efficiency and the use of new and renewable energy sources in transport co finances projects that:
  - support initiatives relating to all energy aspects of transport and the diversification of fuels;
  - promote renewable fuels and energy efficiency in transport;

[63]Article 39 of Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme (2007 to 2013).

[64]Article 40 of Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme (2007 to 2013).

[65]Article 41 of Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme (2007 to 2013).

- support the preparation and application of legislative measures;

- Integrated initiatives[66] which supports projects where energy efficiency and renewable energy sources are integrated and synchronised in several sectors of the economy and/or where various instruments, tools and players are combined in the same action;

5.2.2 Other potential IEE objectives and scope extensions

With the abovementioned instruments and fields, IEE covers the five main types of activities needed at EU level to address the market failures linked to non-technological market barriers, i.e.:

- Ensuring increased awareness and information on sustainable energy objectives and solutions, and address skills gaps to change the behaviour of energy users and suppliers (AWARENESS RAISING). Such activities should do more than raise the awareness of individual citizens, householders and public- and private-sector decision-makers. They should lead to changes in their purchasing, investment and authorisation decisions and in their daily demand for energy, and should focus on areas where awareness is lowest (be it by field or geography). One major component of this type of action should involve education authorities, schools, colleges and universities;

- Reinforcing the capacity of actors in the field of sustainable energy (BUILDING CAPACITIES AND SKILLS) by:

    - Setting up public-private partnerships for qualification and training schemes, including training for technicians and professionals whose daily work has an impact on the design, selection, approval, installation, operation, maintenance, sales and marketing of sustainable systems;
    - Building / reinforcing of networks of market actors so that they can more efficiently share know-how, procedures, and best practices;

- Generating and leveraging significant investments in EE and RES (PREPARING THE GROUNDS FOR NEW INVESTMENTS) through:
    - Flexible financial instruments and linked technical assistance in collaboration with financial institutions and other investors;
    - Encouraging new suppliers of sustainable energy products and services to emerge and/or helping existing suppliers to grow by working to create more favourable market conditions and economies of scale in a single more competitive EU market;

  Such activities should involve the financing community (bankers, financial institutions, fund managers, venture capitalists, etc.) and aim to address the financing needs on the markets for small and medium-sized energy efficiency and/or renewable energy systems. Other important measures of this type would be projects aiming to build investor confidence and to establish long-term financing mechanisms that will accelerate growth on the markets for sustainable energy;

[66] Article 42 of Decision No 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme (2007 to 2013).

- Supporting the development and implementation of the EU sustainable energy policy (FACILITATING POLICY IMPLEMENTATION) through activities which monitor, promote and/or build on the existing EU policy and legislative frameworks which have been put in place in recent years. They should contribute to more effective implementation of the relevant Directives and/or to providing feedback on implementation to policymakers and/or contribute to further development of the relevant EU policy and regulatory frameworks;

- Improving market conditions for sustainable energy activities (CREATING FAVOURABLE MARKET CONDITIONS) through projects which help to convert policy into action on the market and contribute to improving the competitiveness of European EE and RES industries, especially SMEs. As far as possible, projects should help to move EE and/or RE technologies, systems and fuels into mainstream market structures and supply chains.

Using this typology would perhaps in itself create greater clarity on the programme activities (both within and outside the programme). The CIP decision could be adapted to take it into account, although that might not be necessary given that all types of activities can be funded with the current text. Given their greater clarity, we take these categories into account in our subsequent analysis.

Within these five types of activities a number of potential additions to the more specific IEE objectives might be considered, given the evolving market situations for sustainable energy, and taking into account improvement recommendations from the interim and final evaluations of IEE II (these adaptations might be integrated into the typology of IEE projects described above). The following points could be integrated:

- Promoting energy technologies, processes and products with an already demonstrated viability, e.g. via an analogous component to the Eco-innovation programme that would cover sustainable energy. This could be another form of market replication to that undertaken under IEE II;
- Supporting financial arrangements and business partnerships that improve the conditions for large-scale investment in innovative new technologies in sustainable energy;
- Further mobilising industry and finance, including business sectors, investors, and financial institutions (besides research institutions and public authorities);
- Improving the coordination between Member State organisations in the implementation of sustainable energy development measures;
- Improving the coordination with other EU funding schemes;

As noted above, there is also a need for more quantitative operational objectives (and indicators) for IEE, which, while tailored to the projects, could be consolidated at programme level. This would hopefully lead to "smarter" objectives (measurable, time-bound) for the programme overall, and could also take into account the five types of IEE activities described above, e.g. as follows:

- AWARENESS RAISING: objectives to raise awareness in various groups of actors in sustainable energy by a given amount in a given time (there could be weighting of the different categories depending on their respective importance);

- BUILDING CAPACITIES AND SKILLS: objectives to train and qualify a given number of stakeholders in a given time;
- PREPARING THE GROUNDS FOR NEW INVESTMENTS: objectives to mobilise a given level of investment within a given time;
- FACILITATING POLICY IMPLEMENTATION: objectives to develop, transpose or support a given number of EU directives or regulations;
- CREATING FAVOURABLE MARKET CONDITIONS: objectives to increase the number of actors (jobs) and size of sustainable energy markets (turnover) by a given amount in a given time.

These adaptations are suggested taking into account the lack of strong evidence of differentiated results across the current IEE fields, and existing lack of visibility on impacts, although it should be noted that the interim evaluation was carried out at an early stage in the programme at which almost no IEE II projects were completed and reported, and that the final evaluation furthermore only provided limited evidence given the time needed to identify impacts of activities in sustainable energy development.

These needed adaptations are taken into account further in our study.

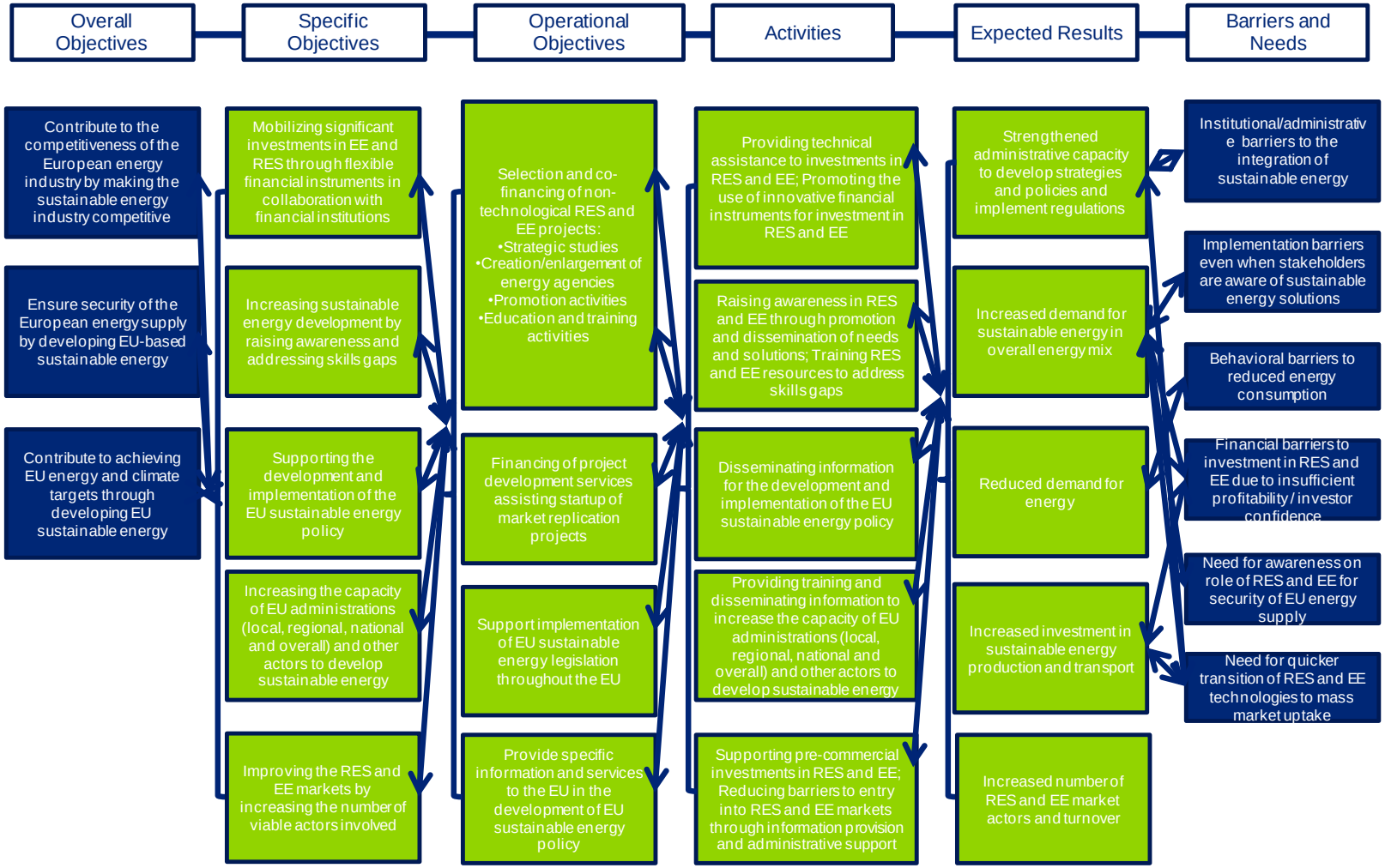
5.3 Full potential IEE Intervention logic

The IEE intervention logic links the objectives of the programme to the identified needs through the programme's intervention mechanisms. It broadly remains similar to that for the current IEE programme despite being reformulated in terms of the five identified types of activities, and taking into account some adaptations for the evolving barriers.

As for the above programme objectives, the intervention logic covers the full scope of IEE potential objectives and might need to be tailored to the final choice of objectives for the potential successor to IEE II.

A point worth addressing linked to this intervention logic is the current lack of an overall roadmap for IEE II until 2013 (or even 2016) giving oversight of how the various activities fit together into a coherent whole over the next years, aiming to tackle given non-technological market barriers to the development of sustainable energy in the EU. It would be interesting to create such a roadmap for a potential successor to IEE II spanning the period to 2020 and identifying how the different programme activities link together over time.

Table 4: Intervention logic for the future IEE programme



Source: Deloitte

6.Synergies and coherence between IEE and other EU initiatives

IEE should not only be unique in addressing certain non-technological market failures in EU sustainable energy development, but must equally take into account that these failures are linked to others which are tackled by various other existing and future EU initiatives.

Given this, and that IEE is a relatively small programme amongst the large number of EU policy initiatives and programmes contributing to the development of EU sustainable energy, it is paramount that it (including all programme components) be coherent and synergise with the other elements of the greater overall framework to achieve success irrespectively of the policy options followed.

In this chapter we therefore assess the coherence and synergy between IEE and other EU initiatives in sustainable energy development for the full scope of IEE policy objectives defined above in order to identify a coherence and synergies baseline independently of the policy options detailed below. In doing so, we address the four following impact assessment questions[67] for the full defined scope of IEE policy objectives:

1. Is IEE coherent with other EU expenditure programmes?
2. Are there any overlaps?
3. Is IEE well placed under the CIP umbrella?
4. With which other EU programmes could IEE be brought together to better address the needs?

This is done by:

- Identifying IEE II's current and potential interactions, coherence, overlaps and synergies with other EU initiatives under the CIP umbrella, and beyond, including the impacts of programme components or individual projects on these;
- Predicting the anticipated situation in 2014 and onwards for IEE and to a limited extent for the key programmes with which it interacts. We furthermore identify opportunities to bring IEE together with other EU initiatives (in this case to better integrate it into a potential successor to CIP) for enhanced synergies.

The impacts of the policy options on the programme's interactions, coherence and synergies with other EU initiatives are detailed in a subsequent chapter by predicting the degree to which the changes proposed to IEE programme components or structure, or to individual projects within the

[67] These are the questions from the terms of reference

programme components, are likely to affect the programme's interactions, coherence and synergies with other EU initiatives, taking into account the baseline.

6.1 Current and potential coherence and synergies between IEE and other EU initiatives within the area

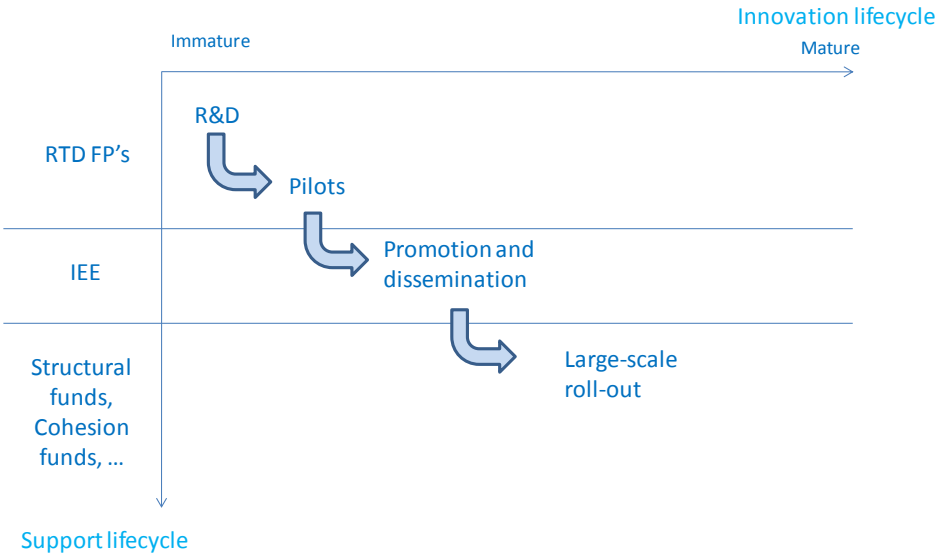
6.1.1 Coherence

In this section we address coherence from the perspective of the role and objectives of IEE and other related EU initiatives.

Coherence of IEE with other EU initiatives

There are several ways of representing the role of IEE in the sustainable energy technology and innovation lifecycle. One such simple representation in which the main EU-level initiatives involved in the sustainable energy innovation life cycle are portrayed, and which essentially shows that IEE must interface with other initiatives, is shown is the below figure (other representations would define IEE as supporting each stage of the innovation life cycle transversely, or as participating to the sustainable energy innovation cycle alongside other programmes within CIP).

Figure 5: EU RES & EE support cycle



Source: Deloitte

Correspondingly, IEE II was specially designed with attention to offer possibilities for synergies with the FP7 and the SF[68], taking into account that FP7 is oriented towards research, technology development and demonstrations, while IEE II focuses more on the non-technical barriers to the market uptake, promotion and dissemination of energy technologies, and the SF/CF on the de-

[68] As detailed in the IEE II annual Work Programmes

ployment of mature energy technologies at large scale. The three programmes should thus complement each other and form a continuum of EU support for sustainable energy technologies of strategic importance. A report[69] on the synergies between the CIP, FP7 and the SF/CF consequently showed that these instruments are coherent, both in terms of their differentiated objectives, and of their inter-linked nature. It pointed out that all three programmes share the broad Lisbon objectives, but that within each of them a specific focus is placed on different actors and phases of the innovation process. For example, Structural funds are meant to be used by regions to invest in sustainable energy technology. The CIP focuses on the innovation and replication phase - with IEE II specifically oriented towards promotion and dissemination and market replication in sustainable energy -, whereas the FP7 focuses on the research and development phase.

Given the related nature, size, and complexity of the activities mentioned above, it is almost inevitable that certain overlaps exist between them, as is the case in practice. As it is difficult to eliminate all such potential overlaps for IEE II, the key is to eliminate major overlaps at the level of programme objectives, and ensure that minor overlaps are cost-effectively managed in the implementation of the programmes.

The interim and final evaluations of IEE II noted that this has been the case for the IEE II programme which is perceived by its management and participants as complementing other existing EU programmes in sustainable energy well (whether research or physical investment programmes), and we conclude from the above that IEE is coherent with other EU expenditure programmes in sustainable energy development despite some potential overlaps to be managed in its implementation.

Coherence of IEE under the CIP umbrella

The IEE programme was specifically placed in CIP (and under management of the EACI) to benefit from synergies in the implementation of the project management cycle, in communication, and in programme management by the EACI.

Several examples of management synergies were mentioned by EC interviewees. DG ENTR manages coordination of horizontal issues across IEE and other CIP programmes (status, evaluations, impact assessments, communication), and tries to identify common issues or opportunities across the programmes (joint reviews are held). This allows for exchange of best practices, bearing in mind that IEE has the possibility to use the same instruments (e.g. financial facilities, etc.) as those used for the other constituent programmes of CIP, although there have not been examples of this. Links between CIP programmes have also been established at project officer level, e.g. with DG INFSO, to foster exchanges between the IEE programme and the "ICT for Energy Efficiency" initiatives (under the CIP/ICT-PSP programme). Meetings are held twice a year to update and share information on ICT supported projects. The EACI is also increasingly trying to leverage the Enterprise Europe Network (within DG ENTR) to promote IEE.

However, there is limited evidence of synergies in sharing of knowledge and communication, or in projects. A number of IEEC members and project participants point to a need for more alignment

[69] Synergies between the EU 7th Research Framework Programme, the Competitiveness and Innovation Framework Programme and the Structural Funds, 2007, *ETEPS AISBL Network for European Techno-Economic Policy Support*

in the approach and image of the programmes, and further cross-fertilization. Indeed, the positioning of IEE II under the CIP is questioned by certain IEEC members. It is felt to be potentially misleading as CIP is generally linked to the commercialisation of innovative products and services, and attracts participants in line with this perception, while IEE II has limited funding for commercialisation activities (through projects promoting products and services on a generic basis, i.e. not for specific products or makes), and certain applicants for IEE II may not be attracted to the CIP programme because of its "commercial" perception. This is particularly the case for certain components of the programme (e.g. concerted actions and tenders) but less so for the main promotion and dissemination component.

6.1.2 Interactions, synergies and overlaps

As noted in the interim and final evaluations of IEE II, there is evidence of interactions and synergies between IEE II and other EU initiatives, notably within the CIP, and with the FP7 and SF/CF programmes.

We distinguish several types of interactions and synergies between IEE II and other EU initiatives in sustainable energy development in the following subsections. These range from synergies for the overall programme to those which are specific to the various IEE II programme components, as well as the types of activities. Indeed, while the different components of the IEE programme share common objectives, they are fairly distinct in nature, addressing different actors in the sustainable energy supply chain, with alternative methods, such that their interactions, coherence and synergies with other EU initiatives are somewhat distinct as detailed below.

Interactions and synergies at programme level

A first type of synergies consists of those observed in the management of different IEE II activities and of certain related EU initiatives and programmes:

- The management of IEE activities under different components is already grouped to a certain extent as the Commission and EACI jointly manage the three concerted actions;
- As IEE II is one of the constituent programmes of the CIP framework programme, some aspects of its overall management are also shared with that of CIP, and there are interactions in the management of certain IEE II programme components with other constituent programmes of CIP (notably those managed by the EACI);
- Beyond the CIP, there are both formal and informal links between the management of IEE II and other related EU initiatives. Co-ordination between the IEE programme and the FP7, and the SF/CF mainly takes place through inter service consultation, and meetings between officials from relevant DG's at specific points in time. What is important in these interactions is to ensure alignment of objectives and adherence to an overarching structure and strategy which today may not always be the case given the broadness of the IEE II programme's mandate. This could potentially be addressed through more systematic alignment of priorities across DG's on the theme of sustainable energy, and through the elaboration of a clearer roadmap for a potential successor to IEE II.

A second type of synergies concerns sharing of knowledge:

- Between EU officials involved in the various components of IEE and with other EU initiatives, as well as between other stakeholders of the initiatives;

- Joint communication between the EU initiatives and their applicants and participants is another example. Progress has been made between DG ENER, the EACI, DG RTD and DG Regio on common promotion of their respective programmes and project engineering, and there have been a number of initiatives to ensure coordinated communication between IEE II and other EU programmes.

Finally, there can also be concrete links or interactions between projects under the different IEE components or other EU initiatives:

- Promotion and dissemination projects may raise awareness or build capacity for undertaking projects under other EU initiatives such as the SF/CF;

- Market replication projects may be stimulated by promotion and dissemination projects having raised awareness or increased capacity.

Synergies relating to promotion and dissemination projects

The main component of IEE II to date, the promotion and dissemination projects, is managed by the EACI, which also manages some other CIP programmes as well as the Marco Polo programme. Common activities across these programmes are performed by the same EACI resources, e.g. for central programme communication activities which are performed by the EACI. There are naturally also continuous exchanges within the EACI between colleagues managing the Eco-innovation and Marco Polo programmes, and those managing IEE II, as well as with colleagues managing the Enterprise Europe Network.

Punctual initiatives for joint communication between IEE II and FP7 have been undertaken, including a *"funding info day on sustainable energy"* joint information session held in 2010 on available EU funding for energy, including participants from IEE II, the FP7, and the SF/CF, and organised by the EACI.

Furthermore, a number of IEE II promotion and dissemination projects have been directly linked to the SF/CF, and notably on the promotion and dissemination of information on how to access such financing for investments projects[70].

Similarly, the potential overlaps for promotion and dissemination projects are relatively limited and concern a small number of specific projects, as the other EU initiatives undertaking related activities have a different general approach or focus:

- On the research side: the CONCERTO and CIVITAS programmes under FP7;

[70] Examples are the Collaborative Actions for Triggering Investments in Sustainable Energy Actions using Regional and Structural Funds (SF-ENERGY INVEST), Promoting the use of Structural Funds and Cohesion Funds for energy investments in New Member States and Candidate Countries (PROMOSCENE) and Sustainable Energy Actions for Europe's Cohesion (Energy 4 Cohesion (E4C)) projects

- On the demonstration and deployment side: the "SMART CITIES" initiative, or projects such as RECORA, REGENERGY, REGIOSUSTAIN, ENERCYREGIO, or ÖKOPROFIT within the INTERREG IVC programme or the LIFE+ programme;

Synergies relating to market replication projects (ELENA projects)

Effective interactions already occur between ELENA EIB projects and EIB loans on the projects where these are taken (a majority of the ELENA projects so far but only for parts of the large-scale investments, highlighting the fact that ELENA funding is independent of downstream funding in this facility), as the EIB is deeply involved from the start such that loan applications can subsequently be processed smoothly.

Beyond the link to EIB loans, the ELENA projects have rapidly established a link with SF/CF funding with two of the 12 approved ELENA EIB projects involving JESSICA funding already. ELENA EIB projects could also in theory synergise with the new EEE-F facility, or with other SF/CF funding (e.g. JEREMIE or JASPERS).

The two additional ELENA compartments are to be managed under similar conditions to the current ELENA-EIB, by the CEB and KfW, respectively for project development services for sustainable energy investments specifically addressing social housing, and carbon crediting connected to energy efficiency below 50 mEUR. The key difference is that these will have direct links to the loan procedures within these IFIs or other financial intermediaries involved in their facilities. Furthermore, the ELENA CEB facility will target ERDF funds with an Urban Development Fund (UDF) type delivery mechanism furthering the link to SF/CF funding. Future facilities could be developed along similar lines to optimise exploitation of the links of such technical assistance instruments to the SF/CF.

Synergies relating to concerted actions and tenders

We have not found any other EU activities with a similar focus and scope to concerted actions but it is clear that the targets of concerted actions, the Member States, are key stakeholders with which the EU is in constant communication on sustainable energy in the context of national RES and EE plans, and that synergies could be sought in the overall management of the EU level efforts on sustainable energy development with them, even if concerted actions have a specific well-defined scope. As a key channel of communication the concerted actions could for instance be leveraged to promote and disseminate relevant information from the other components of the IEE programme within the scope of the Directives covered.

Tenders are fundamentally different to the activities under other components in that rather than letting the market dictate which activities and outputs are most appropriate (as done in the promotion and dissemination, and market replication projects – although there is naturally a degree of control on these by the EU), they follow a directive approach, with the Commission or EACI specifying the needed outputs and activities. They are therefore by nature designed not to overlap with other activities as they should produce specific outputs which it is felt cannot be produced in similar conditions by other IEE components;

Nonetheless, as tenders cover a broad range of activities, some of these have very close links to the promotion and dissemination activities (e.g. communication related tenders) and should be closely

integrated as relevant. An effective example is the management synergies created by the management of an increasing number of tenders by the EACI (especially those linked to services).

There may be some minor potential overlaps in specific tender projects with similar promotion and dissemination projects, but the ongoing due diligence on the adequacy of using this instrument versus other available instruments for procurement of specific outputs and given the available knowledge is considered adequate by the Commission and the EACI (taking into account different factors such as the need for precise control, ownership of outputs, relative cost, etc.). Where this is relevant knowledge gained from tenders is widely published, for example, the study of Energy Agencies[71], which was one of the first study Tenders to be managed for the Commission by the EACI.

Other minor potential overlaps are mainly with the tenders carried out for other DG's, although the inter-service consultations around IEE ensure these are minimised.

6.1.3 Evolution of IEE's interactions and synergies with other EU initiatives by 2014

It is unlikely that the synergies between IEE and other EU initiatives will evolve significantly by 2014 given the short time left before the next programming period, the potential for improvements within the various programmes, and the difficulty to adapt certain interactions and synergies within the current structures, including the current financial regulation.

Interactions within IEE between the different programme components might however be developed, e.g. in furthering the links between the market replication component and promotion and dissemination component of the programme (the MLEI integrated initiative in particular but also other promotion and dissemination projects), both in management and in sharing of information.

6.2 Future coherence and synergies between IEE and other EU initiatives within the area

6.2.1 Future coherence

Future coherence of IEE with other EU initiatives

It is difficult to project ourselves into and beyond 2014, both with regards to the components of IEE, and to the main programmes with which IEE interacts, as key orientation documents on the options for the future of the Energy efficiency policy, CIP, FP and Structural funds/Cohesion funds programmes have not yet been made public and there is ongoing debate on the EU energy policy given recent admissions by the EC that targets in EE would not be met unless significant further efforts are made by Member States[72].

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[71] Energy agencies: evaluation of the relevance of Community funding of local and regional energy agencies, Matrix Insight and Ecologic Institute

[72] COM(2011) 109

Nevertheless, we assume that programmes like the FP7 and SF/CF will be continued, and will have broadly similar objectives and roles to those of today. Regarding the SF/CF, one line of thought is the use of conditionality for funding in the next programming period to ensure optimised alignment of priorities with other upstream programmes such as FP7 and CIP. This could for instance be through defining certain criteria for the selection of investments in line with outcomes of IEE best practice identification. It would certainly have an impact on the interaction of IEE and more broadly of CIP with the SF/CF. This subject is currently under discussion.

A potential successor to IEE II must equally take into consideration the other major EU initiatives in sustainable energy, such as the SET-Plan, the EEPR, and the developing facilities for technical assistance and support to investments in sustainable energy such as EEE-F, as well as EIB lending in its future objectives to ensure coherence.

As its objectives are non-technological, and do not include providing funding for direct investments, it will à priori remain coherent with these sustainable energy development initiatives with objectives which lie in its current full scope (as exposed above), as a complementary initiative.

Besides sustainable energy initiatives, a potential successor to IEE II should also consider its coherence with other related initiatives such as the Strategic framework for European cooperation in education and Training which aims to make lifelong learning and mobility a reality, improve quality and efficiency of education and training, promote equity and active citizenship , and foster innovation and creativity including entrepreneurship, and is therefore related to IEE activities aiming to build capacities and skills. This is particularly relevant for the Building Workforce initiative which synergises with enhanced EU cooperation in vocational and education training to improve transparency and recognition of qualification and competence in its field.

Future coherence of IEE under CIP

As concerns the potential successor to CIP, interviewees of the public consultation identify several possible scenarios, not all of which include IEE as a constituent programme, with some stakeholders feeling that more links could (and perhaps should) be created between IEE and other programmes within CIP to warrant this.

Nonetheless, as the IEE II programme has a high level of participation of SME's and is perceived by its participants as being at the forefront of innovation in sustainable energy, and especially from the perspective of its objectives, we believe that it would fit the general approach of a potential successor to the CIP (in as far as this potential successor would continue the current focus) and would be coherent under it. While IEE could potentially equally function in another context, some adaptations could suffice to further increase the current alignment, and it is not easy to demonstrate that there would be added value to moving a potential successor to IEE II from a potential successor to CIP.

6.2.2 Future interactions, synergies and overlaps

Future interactions and synergies at programme level

Further synergies in the management of certain IEE activities and sharing of knowledge between EU officials involved in the various components of IEE could possibly be achieved, e.g. as some similar activities to those under the market replication component will be undertaken under the

promotion and dissemination component MLEI integrated initiative as of the 2011 work programme. This may be assessed in several years on the basis of practical experience with the management of the ELENA component and of the MLEI integrated initiative.

The interim evaluation of the IEE II programme recommended that the Commission should undertake an analysis of inter-relations with the SF/CF, in order to maximise the potential of collaboration between the two programmes, and evidence of some success stories in IEE II promotion and dissemination and market replication projects linked to the SF/CF, as well as punctual initiatives for joint communication between IEE II and FP7 show that this has somewhat been taken into account.

Nonetheless, while the programmes are all considered coherent, their links and synergies are not yet fully exploited as per many IEE stakeholders. Both IEE II's programme management and participants still mention currently unexploited potential synergies between IEE II and other EU initiatives in sustainable energy development. IEEC members and project participants mention that these unexploited synergies with other EU programmes could be further materialised, and would concern the upstream links between IEE and FP7 (e.g. through more formalised management interactions, possibly even integrated into objectives), and the downstream links between IEE and SF/CF to promote sufficient take-up of sustainable energy investments in the latter. A majority of IEE II project participants would also like to see stronger links between IEE and other investment-related programmes including the SF/CF, in the vein of those which are currently being developed by a number of ELENA and promotion and dissemination projects.

While the need for further synergies is widely acknowledged, the route to achieve these is less obvious. It will involve tackling a number of existing barriers to the implementation of the currently unexploited synergies, mostly corresponding to those mentioned in the abovementioned study on synergies[73], namely *"time lags and delays, eligibility or targeting of different types of beneficiaries, bottom-up versus top down strategies of stakeholders and beneficiaries, formal and actual geographical targeting of the programmes"*, but also the difference in scale of the programmes – IEE funding is significantly smaller than that of sustainable energy-related operational programmes under the SF/CF or FP7, and the cyclical nature of the programmes such that e.g. priorities and best practices identified through IEE should "feed" the SF/CS at specific points in time when priorities are set, so as to be most effectively used. The barriers can be summarised as:

- EU regulation prohibiting overlaps in funding;
- The differing scale of EU initiatives;
- Time lags between EU initiatives;
- Different target groups and key stakeholders across EU initiatives.

The elaboration of the potential successors to IEE, CIP, FP7, and the SF/CF provide the ideal opportunity to address these barriers and ensure that future programmes will not only have the poten-

[73] Synergies between the EU 7th Research Framework Programme, the Competitiveness and Innovation Framework Programme and the Structural Funds, 2007, *ETEPS AISBL Network for European Techno-Economic Policy Support*

tial to create synergies, but will actually do so in practice at sufficient scale. The status quo situation for IEE links to other EU initiatives should therefore definitely not be taken for granted as of 2014.

Future synergies relating to promotion and dissemination projects

Certain potential synergies for promotion and dissemination projects are as yet unexploited or insufficiently exploited:

- Those with the European Strategic Energy Technology Plan (SET-Plan)[74] on joint strategic planning and more effective implementation of programmes to accelerate the development and deployment of cost-effective low carbon technologies. Indeed, as the SET-Plan touches on demonstration, market introduction processes, and market take-up for the main RES and EE technologies[75] (through its European Industrial initiatives), synergies with the IEE programme could be found even if the IEE programme is non-technological given that it aims "*bridge the gap between the successful demonstration of innovative technologies and their effective, broad market uptake in the fields of EE, RES and energy diversification, including in transport"*. This would require overcoming some of the abovementioned barriers such as those related to different scale and target groups as well as time lags;

- Those with learning related programmes such as the Leonardo Da Vinci sub-programme (for vocational training) of the Lifelong Learning Programme (LLP)[76], e.g. for initiatives such as the workforce building initiative being instituted, the Build Up Skills initiative developed with the involvement of resources from the Commission's lifelong learning teams, or other training-related promotion and dissemination projects. The idea would be to leverage existing structures and networks in learning for the needs of IEE.

These synergies should be quickly capitalised on in order to achieve the objectives of the respective initiatives taking into account the horizon of 2020 for the fulfilment of the EU's 20/20/20 sustainable energy targets.

Future synergies relating to market replication projects (ELENA projects)

There is potential to further exploit synergies for the market replication projects:

- The fact that ELENA is co-managed separately to the other components means that the market replication projects are not as integrated with the other IEE programme compo-

[74] COM(2007) 723

[75] The SET-Plan has a very narrow focus on EE

[76] The LLP funds a range of actions including exchanges, study visits and networking activities. Projects are intended not only for individual students and learners, but also for teachers, trainers and all others involved in education and training. Within the LLP the Leonardo da Vinci sub-programme funds many different types of activities of varying scales. These include 'mobility' initiatives enabling people to train in another country, co-operation projects to transfer or develop innovative practices, and networks focusing on topical themes.

nents in their management as these others are between themselves. Extra coordination efforts would ensure overall programme management alignment;

- Between promotion and dissemination projects and market replication projects, as the former may raise awareness and build capacity to undertake the latter in local and regional authorities. An effective synergy of this type to date has been through the covenant of mayors (COM) initiative, as local authorities participating in this initiative are clearly committed to tackling sustainable energy, one of the conditions for participating in the market replication projects, and information on the availability of such facilities circulates within the COM. Moreover, in the Local Energy Leadership promotion and dissemination projects funding has been granted for the preparation by cities and communities of Sustainable Energy Action Plans (SEAP) which have been a first step in the preparation of investment projects by the cities and communities.

  Besides this first type of synergies, as the MLEI integrated initiative from the 2011 work programme will mean that similar technical assistance activities to those under ELENA will be undertaken by promotion and dissemination projects, synergies between these must naturally be sought;

- With the technical assistance and funding activities carried out under certain other existing or future facilities at EU level (JASPERS, JEREMIE, JESSICA, EEE-F), with which ELENA has already established initial links which must be further exploited. This is also where the main potential overlaps for the market replication projects lie despite the key difference between these facilities and those under IEE which are not linked to specific funding sources and seek a programmatic approach to investments where possible.

- With other programmes in CIP such as eco-innovation, with which further alignment could potentially generate added value if market replication activities were to be extended beyond their current scope in a potential successor to IEE II to include activities like eco-innovation in sustainable energy, i.e. support for commercialisation of innovative energy technologies and services (as is currently the case to a limited extent under certain (perhaps incorrectly categorized) promotion and dissemination projects supporting the commercialisation of innovative services such as ESCOs. Given the apparent need for such activities, market replication projects under IEE might include new forms of projects different to the current ELENA facilities and not necessarily limited to technical assistance activities, but rather seeking to fill the gap between demonstration and market uptake for technologies and services deemed to be commercially viable in the long term.

7.Formulation of policy options

One of the important objectives of the analysis is to settle on a limited number of policy options that provide the basis for the subsequent impact assessment and hence the ex-ante evaluation of future strategies for the IEE programme. In this chapter the background and process leading to these policy options will be presented.

The starting point of the policy options is the four original options which were formulated in the task specifications and described in brief in the first section of the chapter. The following section presents the elaboration of these policy options in the initial phase of the project which led to a revised framework for formulating the policy options based on preliminary analyses and consultations with EC. The last section comprises a description of the four policy options which where formulated in the context of this framework and which provide the basis for the impact assessment.

7.1 Initial EC proposal for policy options

In the task specifications, the EC suggested four alternative policy options that should be considered as a starting point:

1. No continuation, i.e. abandoning the idea of an expenditure programme aiming at tackling non-technological barriers to the development and deployment of energy efficiency and renewable energy.

2. Baseline scenario, i.e. maintenance of the programme in its current format with a slight budget increase to off-set inflation;

3. "Business as usual" with a budget top-up, i.e. maintenance of the programme in its current format, but recognising the growing importance of such elements as financial facilities supporting local and regional authorities to invest in sustainable energy projects and skills by increasing their budgetary envelopes;

4. Extending the scope of the programme with a budget top-up, could integrate additionally the financial instrument(s) proposed by the Commission in revised European Energy Efficiency Action Plan

7.2 Further development of the policy options

According to the task specifications and the proposal of Deloitte, the relevance of the abovementioned policy options has been assessed – and possible sub-options, changes and further specifications has been considered – during the initial phase of the project. This resulted in a revised set of strategic policy options that were discussed and finally agreed as the outcome of the inception and interim report.

Regarding the budget level, the initial discussions led to the conclusion that a large extension of the IEE budget is probably not feasible in view of the current budget situation and the future energy strategy, although increased funds to stimulate energy investments and innovation are seriously

considered. However, most of such additional energy funding will probably be channelled into investment and financing funds which will co-exist with IEE programme and other specific programmes and funds focusing on energy research, energy technology and infrastructure investments, e.g. through cohesion policy funding which could deliver the funding through national, Jessica type or even EU-wide investment funds.

The original option 4 where the budget and scope of the IEE would be greatly extended to encompass new financial instruments including, for example, large-scale loans and direct investments was therefore not considered relevant by the main stakeholders. However, it was agreed, that there is a need to consider also policy options involving a higher budget and new focus areas. These should nonetheless be within the scope and objectives of the current IEE II programme and, accordingly, the budget top-up should be relatively limited.

In the inception report it was agreed that the specification of the policy options that will be the subject of the combined ex-ante evaluation / impact assessment in the final report should proceed according to a two-stage bottom-up approach.[77] In stage A, which was concluded after the inception meeting, a framework defining possible and relevant combinations of policy options was established. In stage B, leading up to the interim report, Deloitte gathered information and carried out preliminary analyses on the expected effects of various types of changes in focus and budget (the two dimensions across which the options may vary), and used this information to propose those policy options that appear to be the most relevant and attractive alternatives among the relevant combination of budget level and focus in terms of instruments and priority areas (i.e. different scopes of the programme).

On the basis of the preliminary analyses (interviews, surveys and data collection) carried out with respect to the experiences with the existing P&D and MR programme elements within the IEE I and IEE II programme, and after extensive discussions with the Commission, Deloitte proposed to analyse a maximum of four different policy options for a successor to the IEE II programme.

The proposed policy framework which has been summarised in Figure 6 is based on two dimensions.

1. Instruments including tenders, concerted action, promotion and dissemination projects and market replication projects

2. Priority areas (scopes) including facilitating policy implementation, creating favourable market conditions,

The scope dimension refers to priority areas with different underlying project objectives and focus. A set of definitions applying to very similar scopes were provided in the 2008 Work Programme:

[77] It should be noted that the two-phase procedure to define the policy options refers to different phases within the policy option step (step number 3) in the six-step approach to impacts assessments (see the figure in the theoretical section).

1. **Awareness raising.** Priority will be given to projects which do more than raise the awareness of individual citizens, householders and public- and private-sector decision-makers. They should lead to changes in their purchasing, investment and authorisation decisions and in their daily demand for energy. One major component of this category of action will involve education authorities, schools, colleges and universities.

2. **Facilitating policy implementation.** Priority will be given to projects which monitor, promote and/or build on the existing EU policy and legislative frameworks, which have been put in place in recent years. They should contribute to more effective implementation of the relevant Directives and/or to providing feedback on implementation to policymakers and/or contribute to further development of the relevant EU policy and regulatory frameworks.

3. **Building capacities and skills.** Priority will be given to training for technicians and professionals whose daily work has an impact on the design, selection, approval, installation, operation, maintenance, sales and marketing of sustainable systems. Although not explicitly stated in the 2008 Work Programme, the capacity building priority area contain not only projects focusing on training of technicians and professionals, but also projects related to institutional capacity building, for example the establishment of organisation, administration and planning capacities for promoting sustainable energy. Hence, there may be some overlap between this priority area and the facilitating policy implementation priority area.

4. **Creating favourable market conditions.** Priority will be given to projects which help to convert policy into action on the market and contribute to improving the competitiveness of European energy efficiency (EE) and renewable energy (RE) industries, especially SMEs. As far as possible, projects should help to move EE and/or RE technologies, systems and fuels into mainstream market structures and supply chains.

5. **Preparing the grounds for new investments.** Priority will be given to projects which involve the financing community (bankers, financial institutions, fund managers, venture capitalists, etc.) and which aim to address the financing needs on the markets for energy efficiency and/or renewable energy systems. Other important measures in this category are projects aiming to build investor confidence and to establish long-term financing mechanisms that will accelerate growth on the markets for sustainable energy.

7.3 The final policy options

Figure 6 below shows the basic framework we use to illustrate each of the policy options. The policy options consist of different building blocks in the form of certain combinations between instruments and scopes (priority areas). Hence, within the current instruments and scope of the IEE programme there are 20 potential building blocks. Yet, some of the combinations are considered largely irrelevant and therefore are not included in any of the policy options. The irrelevant building blocks are illustrated by empty grey fields in the framework.

Figure 6: Basic policy options framework

Scope / Instruments	Awareness raising	Facilitating policy implementation	Building capacities and skills	Creating favourable market conditions	Preparing the grounds for new investments
Tenders	Tenders focusing on awareness raising	Tenders focusing on policy implementation	Tenders focusing on capacity-building		
Concerted action		Concerted action focusing on policy implementation			
Promotion and dissemination projects	P&D projects focusing on awareness raising	P&D projects focusing on policy implementation	P&D projects focusing on capacity building	P&D projects focusing on market conditions	P&D projects focused on leveraging energy investments
Market replication projects					Project development services (ELENA) and related funding

For the potentially relevant non-grey building blocks, there is continuum of possibilities regarding their degree of inclusion in each of the policy options, ranging from no inclusion where there is no budget for building block to the highest possible extent of inclusion where the building block has a very high focus and budget and broad coverage. For simplicity the policy options will be characterised by the following degrees of inclusion of each building block:

- High focus/budget/coverage of this building block
- Some focus/budget/coverage of this building block
- No focus/budget/coverage of this building block
- Building block not relevant

Policy option 1: No continuation

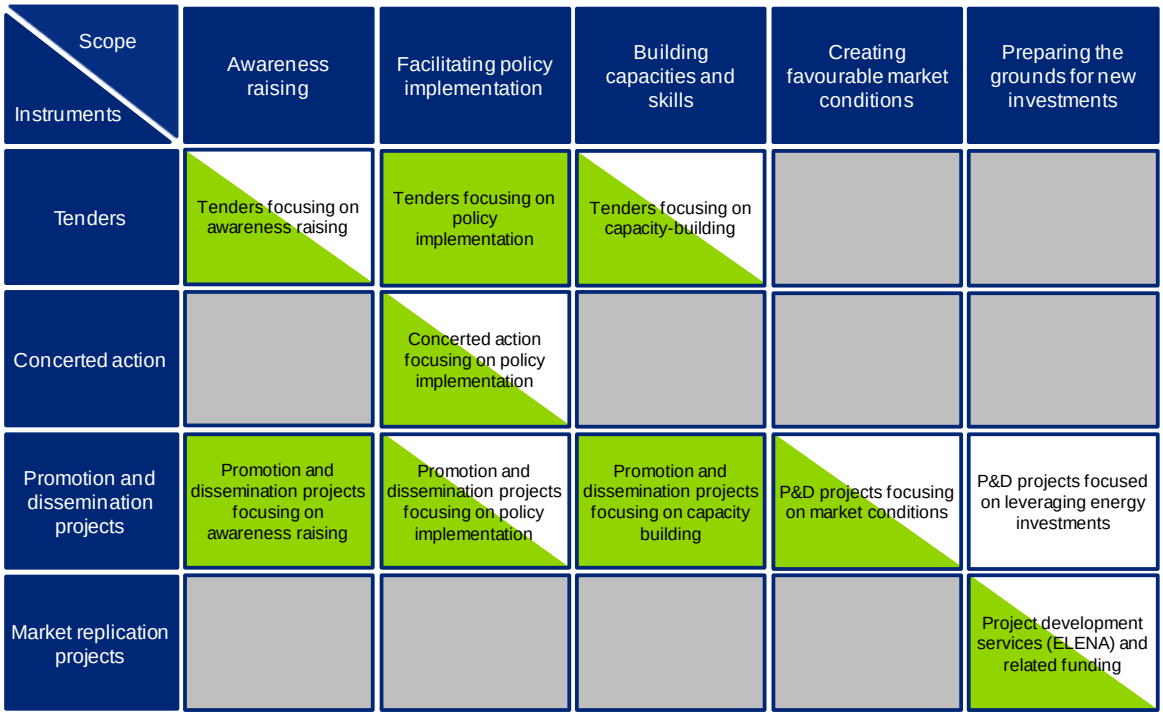
This policy option is relatively straightforward and similar to the one described in the task specifications, i.e. abandoning the idea of an expenditure programme aiming at tackling non-technological barriers to the development and deployment of energy efficiency and renewable energy. It means that, in the future, no budget is allocated to the IEE programme.

As it is always relevant to assess the magnitude of forgone benefits of having no programme and hence no IEE actions financed by the EU up against the budget savings, this option needs no further justification.

Policy option 2: Continuation of current programme

This policy option is illustrated in Figure 7. It implies maintenance of the programme with its current focus and budget size (with a slight budget increase to off-set inflation). It implies that the priority between the main programme elements (P&D projects and MR projects) remains unchanged and also that no substantial changes are foreseen with respect to the funding rules within the programme elements.

Figure 7: Continuation of current programme (policy option 2)



In the terminology used here, this means that the building blocks are the same and are given the same focus and priorities as in the current programme:

- High focus/budget/coverage allocated to awareness raising projects with the majority of the focus/budget of this scope being concentrated around promotion and dissemination projects.
- High focus/budget/coverage allocated to capacity building projects with the majority of the focus/budget of this scope being concentrated around promotion and dissemination projects.
- High focus and budget allocation to facilitating implementation of EU policies aiming at sustainable energy, especially within tenders, but also some focus/budget within concerted actions and promotion and dissemination activities.
- Some focus and budget allocation to creating favourable market conditions, mainly on the supply side. Promotion and dissemination projects are the main instrument for this purpose although the market replication projects should also positively impact the ESCO market.

An increasing budget has recently been allocated to projects that create favourable market conditions on the supply side, although as shown in Table 27 in Section 9.2, the budget is still lower than the budget spent on demand side oriented projects. It can hence be argued that the coverage of the former priority area is not high as the awareness raising and capacity building priority areas which, taken together, provides a good coverage of the demand side.

- Some focus and budget allocation to preparing the grounds for new energy investments. Market replication projects in the form of ELENA project development services are the main instrument for this purpose but should be complemented by promotion and dissemination projects, especially among renewable energy projects, focusing explicitly on preparing the grounds for new energy investments, as well as projects under the new integrated action on Mobilising Local Energy Investments (MLEI) from the Work Programme 2011).

Policy option 3: Capacity building oriented programme

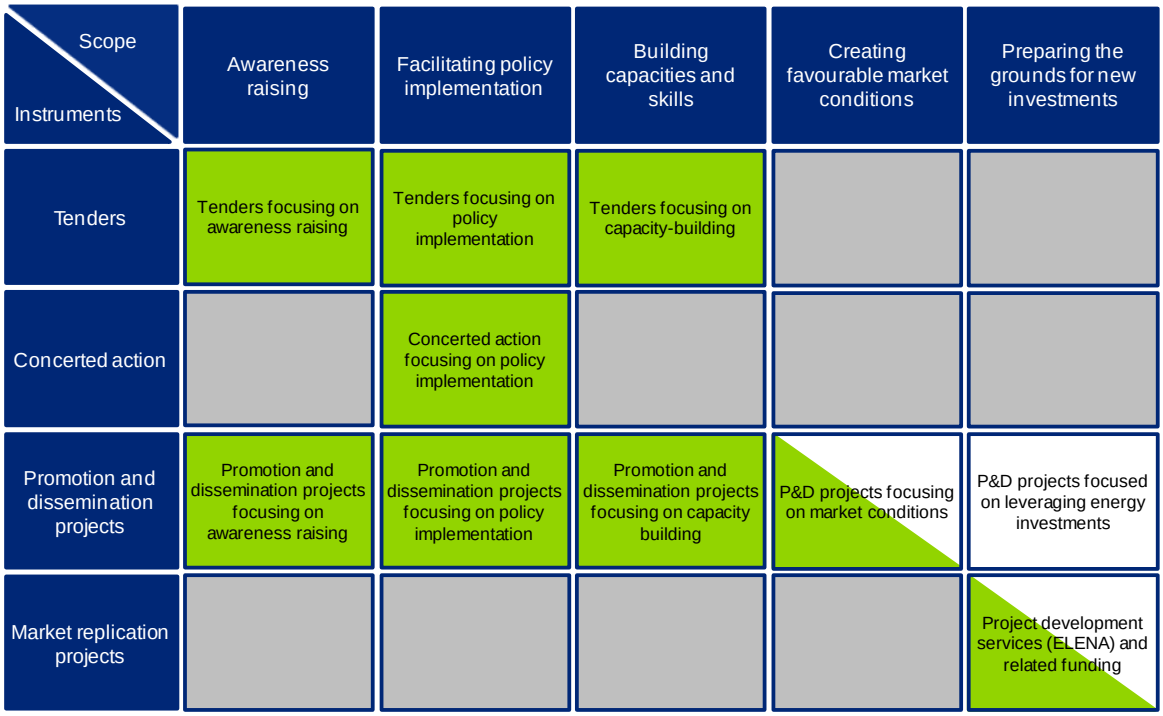
This policy option which is illustrated in Figure 8 gives maximum priority to building blocks focusing on awareness raising, facilitating policy implementation and building capacities and skills which constitute the classical activities of the IEE programme.

- High focus/budget/coverage allocated to facilitating the implementation of EU policies aiming at sustainable energy qua the use of tenders, concerted actions and promotion and dissemination activities.

- High focus/budget/coverage allocated to capacity building qua the use of promotion and dissemination projects and tenders.

- Some focus and budget allocation to awareness raising but proportionally less than under the current programme (one possibility would be to reserve budgets mainly for projects within the new member states where basic capacity building is more needed).

Figure 8: Capacity building oriented programme (policy option 3)



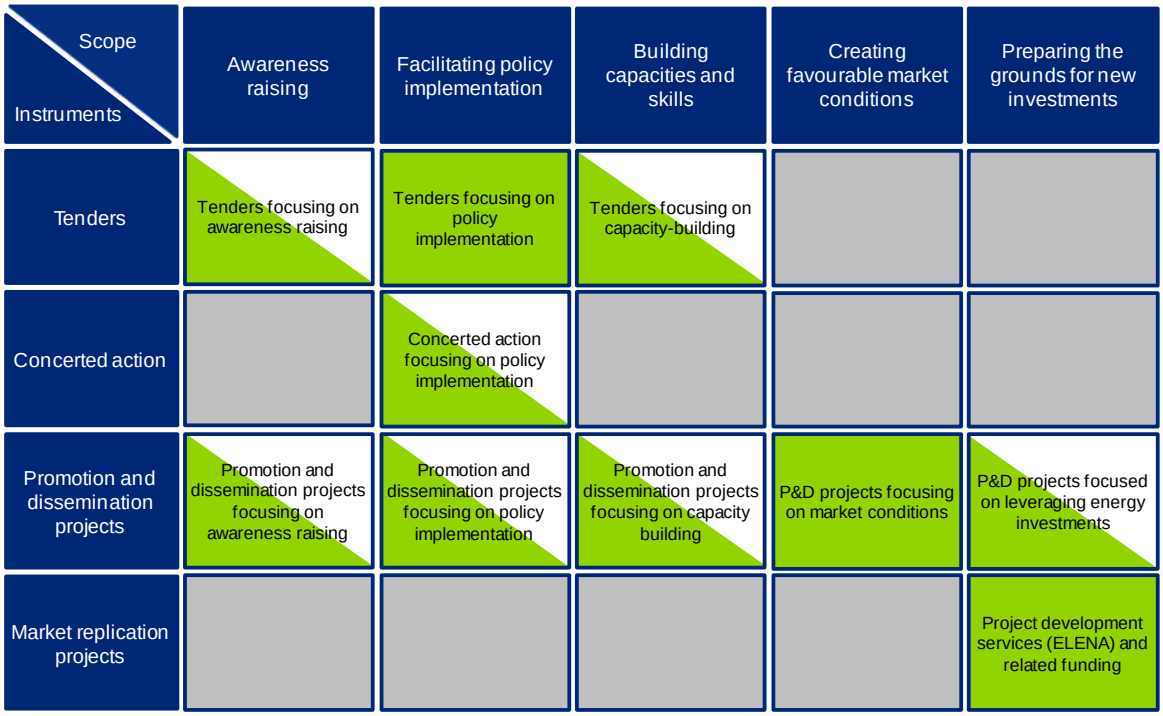
Building blocks focused on creating favourable market conditions and preparing grounds for new investments also have some focus/budget, but are significantly less prioritised than the other basic building blocks.

Policy option 4: Investment oriented programme

This policy option which is illustrated in Figure 9 is more focused on investment leverage and improving market conditions but less focused on facilitating policy implementation and capacity building compared to the other policy options. In includes higher budget and broader coverage of promotion and dissemination projects focused on investment leverage and the scope of the market replication block is extended.

- High focus/budget/coverage allocated to creating favourable market conditions for innovative energy technologies on the supply side.
- High focus/budget/coverage allocated to preparing the ground for new energy investments. This would be carried out firstly through both market replication projects but also through promotion and dissemination projects including developing projects under the MLEI key action and increasing other investment-related promotion and dissemination projects.
- Some focus and budget allocation to awareness raising but less than under the current programme (one possibility would be to reserve budgets mainly for projects within the new member states where basic capacity building is more needed)
- Some focus and budget allocation to capacity building and facilitating the implementation of EU policies aiming at sustainable energy – but less than under the current programme

Figure 9: Investment oriented programme (policy option 4)



8. Impact analysis of the programme instruments

This chapter provides an overview of the general performance of the programme instruments based on project data and perceived impacts by survey participants and interview respondents. Taking departure in lessons from the past and the current performance of the instruments, the present chapter will arrive at forward-looking conclusions on the need for, and likely future performance, of each set of IEE instruments. In the subsequent Chapter 9, these assessments of the policy instruments will serve as input to the more general impact assessment of policy options (which are defined by certain combinations of policy instruments and priority areas).

8.1 Impacts of the promotion and dissemination instruments

Since the beginning of the IEE programme, funding of promotion and dissemination projects as part of the open call procedure has so constituted the major instrument for achieving the programme objectives.

Table 5: Budget of the IEE II programme 2007-2011

Programme component	Field	2007	2008	2009	2010	2011
Promotion and dissemination projects from calls	SAVE	8,9	8,3	16,9	19,6	10,0
	ALTENER	17,7	15,1	19,0	19,2	13,1
	STEER	10,5	12,9	10,8	10,3	10,0
	INTEGRATED	14,8	9,2	18,0	6,7	24,0
Budget for promotion and disseminations projects		*51,9*	*45,4*	*64,7*	*55,8*	*57,1*
Market replication projects	ELENA EIB	0,0	0,0	15,0	15,0	19,0
	ELENA KfW	0,0	0,0	0,0	0,0	8,0
	ELENA CEB	0,0	0,0	0,0	0,0	3,0
Budget for market replication projects		*0,0*	*0,0*	*15,0*	*15,0*	*30,0*
Concerted action projects		3,1	2,0	0,0	10,0	3,0
Tender projects		3,9	13,7	9,0	16,8	11,2
Other projects		0,0	1,8	0,0	6,0	3,2
Budget for concerted action and tenders		*7,0*	*17,5*	*9,0*	*32,8*	*17,4*
Total budget for project funding		**58,9**	**62,9**	**88,7**	**103,6**	**104,5**
EACI operating expenses		6,1	6,7	6,7	6,6	6,6
Administrative expenses		0,0	0,8	0,8	1,0	0,9
Budget for administrative costs		6,1	7,5	7,4	7,6	7,5
Total operational budget		**65,0**	**70,4**	**96,2**	**111,2**	**112,0**

Yet, the budget share of promotion and dissemination projects of the total IEE budget for project funding (excluding administrative costs) has dropped from nearly 90 per cent in 2007 to a little more than 50 per cent in 2010 and 2011.

8.1.1 Overview of the promotion and dissemination projects under the open call procedure

Open calls for promotion and dissemination projects have existed since 2003 and, so far, it is the most well known part of the IEE programme.

Table 6 below shows the actual grants provided for promotion and dissemination projects since 2003 as well the number of eligible proposals and the budget and requested funding of these proposals.

Table 6: Statistics for open call applications and grants under IEE I (2003-6) and IEE 2 (2008-10)

	2003	2004	2005	2006	2007	2008	2009	2010
Number of eligible proposals	241	214	265	294	431	339	367	346
Proposals which received a grant	87	120	120	97	72	55	62	44
Total budget of all projects, MEUR	264	243	278	307	495	412	543	550
Total requested EC funding, MEUR	132	120	136	153	367	304	407	413
Total EC grants, MEUR	47	55	53	45	64	52	74	58
Grants as % of requested funding	35%	46%	39%	29%	17%	17%	18%	14%
Grants as % of proposals	36%	56%	45%	33%	17%	16%	17%	13%

Table 7: Percentage of proposals receiving a grant, IEE II

	2007	2008	2009	2010	Total
SAVE	13%	11%	13%	9%	**12%**
ALTENER	15%	15%	19%	15%	**16%**
STEER	30%	23%	22%	17%	**22%**
INTEGRATED	19%	20%	15%	13%	**18%**
Total	**17%**	**16%**	**17%**	**13%**	**16%**

Table 8: Grants as a percentage of total requested funding, IEE II

	2007	2008	2009	2010	Total
SAVE	16%	12%	15%	10%	**13%**
ALTENER	15%	17%	19%	16%	**17%**
STEER	38%	27%	22%	18%	**24%**
INTEGRATED	17%	18%	19%	17%	**18%**
Total	**17%**	**17%**	**18%**	**14%**	**17%**

The overview provided by Table 6 shows that there has been a growing interest over the years for the open call projects within the IEE programme, both in terms of number of proposals and budget size.[78] Except for 2007 and 2009, that has not been paralleled by an equal growth in the total EC grants which in 2010 were back at IEE I levels when taking into account inflation.

Interviews with representatives from the EC institutions responsible for policies relating to sustainable energy generally confirm the view that many attractive projects are forgone when funds only allow for the acceptance of a very low share of proposals received under the open calls (1 out of 7-8 proposals in 2010, cf. Table 4). A number of interview respondents express the view that a rate of 1 out of 4 proposals would be more reasonable, but that would require either a higher budget or stricter eligibility criteria. Another problem with the low acceptance rate, besides the forgone opportunities, is that it raises the overall administrative burdens compared to the chance of receiving a grant. When that becomes generally known it will have the effect of reducing the interest for applying, and there is no guarantee that the most attractive proposals will be those that remain.

[78] The drastic increase in the size of requested EC funding between IEE I and IEE II is largely due to the fact that projects generally only received support for 50 percent of the project budget in IEE I.

8.1.2 Performance and impacts of the P&D programme instrument

Since consolidated programme monitoring data on the projects' actual impacts are not available in a form that allows for quantitative analysis, the impacts have been addressed in surveys sent to project partners/coordinators and EACI project officers. The survey participants have rated the expected impacts in continuation of their projects, and these ratings are presented below. Generally the project partners have found it difficult to quantify the impact of their project, which is illustrated in the table below.

Table 9: Difficulty of quantifying project impact across fields of action, project partners/coordinators

	Frequency	Easy	Achievable	Difficult	Almost impossible
SAVE	26	0%	29%	50%	21%
ALTENER	41	0%	36%	55%	10%
STEER	15	0%	25%	63%	13%
INTEGRATED	43	0%	33%	53%	14%
Total	**125**	**0%**	**32%**	**54%**	**14%**

Table 10: Difficulty of quantifying project impact across priority areas, project partners/coordinators

	Frequency	Easy	Achievable	Difficult	Almost imposible
Facilitating policy implementation	34	0%	47%	41%	12%
Creating favourable market conditions	21	0%	19%	62%	19%
Preparing the grounds for new investments	10	0%	40%	40%	20%
Awareness raising	32	0%	31%	56%	13%
Building capacities and skills	32	0%	22%	66%	13%
Total	**129**	**0%**	**32%**	**54%**	**14%**

As indicated in Table 9, 68 per cent of respondents find it difficult or almost impossible to quantify the expected project impacts. There is little difference in the perceived difficulty between fields of action although managers of projects within the ALTENER field find the quantification of impacts somewhat less difficult compared to what is the case in the other fields of action. Table 10 shows, that there is more difference between priority areas with respect to the difficulty of quantifying the impacts. Managers of projects where it is a priority to facilitate policy implementation or to prepare the grounds for new investments generally find the quantification of impacts less difficult compared to what is the case when projects fall within priority areas of creating more favourable market conditions or capacity building.

The difficulties are also highlighted in the interviews. Since work programme 2009, each project partner has been required to set quantitative impact targets for CO_2 emission reductions, energy-savings, leveraged energy investments (and also installed capacity (MW) in the case of renewable energy projects). However, many representatives within DG Energy, EACI and the other central EC institutions, point out the difficulties in formulating realistic targets, given the indirect causal relation between the focus and activities of P&D projects (facilitating policy implementation, capacity building, awareness raising, etc.) and the resulting effects when (and if) such activities, after a considerable time lag, result in changing behavior into more sustainable use of energy. The reason for that is especially the soft, indirect nature of project activities, which are focused on networking and communication efforts rather that direct investments and implementation of innovative energy technologies and solutions.

A few respondents within the EC institutions and among the project beneficiaries have pointed out that the target setting imposed on all projects force the participants into setting ambitious targets that look good on the paper, but which will never be measurable and not at the end realistic. Yet, several other respondents emphasise that the applied approach to quantitative target setting makes use of the best available indicators and is strictly necessary in order to focus the project partners on delivering concrete quantifiable results towards the overall environmental and economic goals they are supposed to contribute to. Nevertheless, only very few projects have so far succeeded in measuring actual progress towards the applied targets or in delivering methods for how to accomplish that in the future.

Due to the lack of systematic measuring and quantitative evidence on the impacts, we have made an attempt to address this question through surveys. On the basis of the answers provided by project partners and project officers to survey questions where they were asked to rank the relative performance of their respective projects compared to direct energy investments and best practise projects in a number of impacts categories, impact scores have been computed for each project. The impact score for each project consists of a total average impact score, an environmental impact score, an economic impact score and a social impact score. The underlying questions and the construction of the score are accounted for in Appendix A.

Below in Table 11 and Table 12 is a presentation of the expected average impact scores of the projects estimated by both project partners/coordinators and project officers. Both groups generally rate the impact of the projects for which they are responsible quite high with a total average of 4 on a scale from 1 to 5. This means that the average impact of P&D projects is rated as "higher impact" compared to if the funds had been used for direct energy investments. When asked to compare the project impacts against a best practice project, the average answer is "higher than average impact" (4) which is second only to "best practice – maximum impact" (5). The high ratings should be seen against the background that the answers constitute self-evaluations in the sense that project coordinators answer for their own projects and project officers answer for their respective pools of projects. The fact that the average rating is "higher than average impact" confirms the assumption of an upward bias. It indicates that the impact ratings are more useful for relative than for absolute ranking of projects.

Table 11: Impact across fields of action, added scores by project partners/officers

	Frequency	Environmental	Economic	Social	Total
SAVE	26	3,9	3,6	4,1	3,9
ALTENER	41	3,7	4,1	4,0	3,9
STEER	15	3,9	3,6	4,2	4,0
INTEGRATED	42	4,1	3,9	4,2	4,1
Total	**124**	**3,9**	**3,9**	**4,1**	**4,0**

Table 12: Impact across priority areas, added scores by project partners/officers

	Frequency	Environmental	Economic	Social	Total
Facilitating policy implementation	34	4,2	4,1	4,2	4,2
Creating favourable market conditions	20	3,9	3,9	4,1	4,0
Preparing the grounds for new investments	10	3,9	4,2	3,9	3,9
Awareness raising	29	3,7	3,5	4,0	3,8
Building capacities and skills	31	3,8	3,8	4,3	4,0
Total	**124**	**3,9**	**3,9**	**4,1**	**4,0**

The impacts would not necessarily be rated equally high by more neutral observers, but since there is no quantitative evidence on the effects except from in a few successful case studies and since there are no neutral observers with sufficient insight in the projects to rate the impacts, this cannot be tested. Yet, the interviews with representatives from EC institutions and NCPs that have reasonable insight into the general effects of the P&D programme instrument show a general consensus that P&D projects are important and generate significant positive impacts that would not have been achievable by similar instruments at the national level.

Both the environmental and social impacts are emphasised. First, it is believed that through the networking and communication activities, the P&D projects generate substantial leverage in terms of multiplier effects with respect to adoption of sustainable energy solutions and investments in innovative energy technologies. Second, it is believed that these multiplier effects could not have been obtained in an equally cost effective way through similar national initiatives. The main reason asserted for that point are the substantial synergies in organising the promotion and dissemination activities in a broader European network rather than several countries repeating the same activities individually.

Table 11 shows the average expected impacts by the partners/coordinators across fields of action. There are only small differences between the impacts, which are generally expected to be somewhat higher with regard to social aspects (awareness-raising and capacity building) than environmental aspects (energy-savings and CO_2 reductions) and economic aspects (security of supply and growth). The overall added assessed impact scores of the partners/coordinators and officers are highest for INTEGRATED initiatives while the economic impacts are generally indicated by respondents to be highest for the ALTENER projects.

The differences in the added impact scores are generally not very high which should be kept in mind when interpreting the results. Yet, because of the little variance in the impact scores a few of the major differences in the scores within these and other tables throughout chapter 8 and 9 are actually statistically significant. However, statistical analysis has not been used to interpret the results because of the subjective character of the impact assessments which put more limits on the reliability of the impact assessment compared to what would have been the case if more objective data had been available.

While the impact scores are based on subjective judgments, they are still considered as valuable input to the analysis in a view of the fact that project partners and project officers are the only ones who have more detailed insights into the performance of the individual projects. Generally those insights are expected to give realistic indications about the projects' actual impacts, although potential subjective biases will limit the certainty by which one can draw genereal conclusions from the survey scores.Yet, the survey results are considered to be at least as important and credible as the results from the stakeholder interviews which are also, by nature, influenced by subjective biases, and (to a greater extent than the project surveys) by limited detailed knowledge.

Table 12 shows, that there are also very little variation in the respondents opinions on impacts across priority areas, although projects focusing on facilitating policy implementation are rated a little higher than the other in terms of expected impacts. The awareness raising projects are not

expected to have as high economic impacts as the other projects, but again the differences are moderate.

Project partners/coordinators have assessed the expected target realisation of their projects across different impact categories. More specifically, they were asked about the expected fulfillment of the project targets towards 2020. These answers are summarised below.

Table 13 shows that a high degree of target realisation is expected across all impact categories, and except for one category, less than 10 percent of the participants expect a realisation below 50 percent. On average, almost 80 percent expect a target realisation above 75 percent. Weighing the percentage of respondents that have rated each chance category one obtain the results that (even if the low part of the intervals apply), the average target realisation will be around 80 per cent for CO_2 emissions reductions and energy savings (for which targets have been set in 53 respectively 56 of the total 124 projects) . For targets relating to energy investment and installed renewable energy capacity (which have been applied in 30 respectively 41projects), the expected weighted average realisation is around 85 per cent.

Table 13: Expected target realisation across impact categories

	Frequency	0-25 per cent	25-50 per cent	50-75 per cent	75-100 per cent	100 per cent	>100 per cent	Minimum average
Expected energy savings	53	4%	6%	8%	39%	35%	8%	80%
Reduction in CO_2 emissions	56	6%	6%	10%	42%	27%	10%	77%
New investments in sustainable energy	30	8%	0%	12%	35%	19%	27%	85%
Reduced transport work	2	0%	0%	0%	100%	0%	0%	75%
Quantified increases in the use and consumption of specific products/technologies /behaviours that contribute to sustainable energy	26	8%	8%	8%	32%	36%	8%	76%
Quantified increases in the awareness of certain products/ technologies/behaviours that contribute to sustainable energy	23	0%	4%	9%	22%	26%	39%	97%
Quantified increases in renewable energy production	41	5%	3%	16%	32%	18%	26%	84%
Number of people/organisations impacted by the project's and promotion and dissemination activities	80	3%	0%	4%	27%	28%	39%	98%

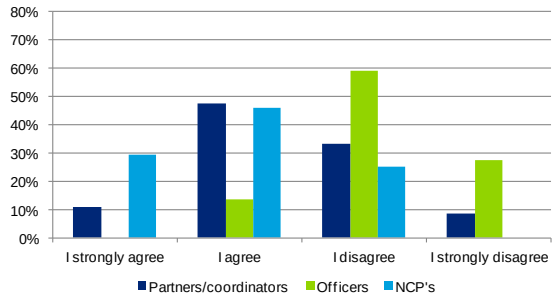
Note: Minimum average is calculated using the minimum value in the specified interval. For indications of >100 percent, a value of 125 percent is used.

8.1.3 Forward looking assessments of the P&D instruments

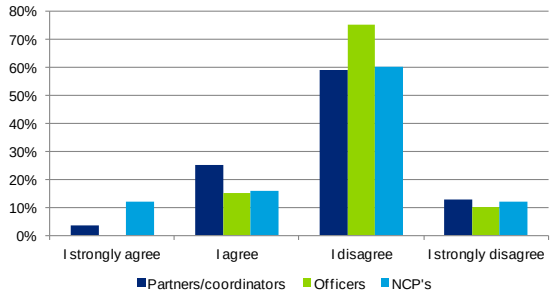
The survey among partners/coordinators and officers has investigated a possible change in the focus of the IEE programme, and more specifically a change in priorities between general programme fields (SAVE, ALTENER, etc.). Figure 10 below shows the results.

Figure 10: Effect of changing sector focus and budget per project of the IEE programme

The relevance/impact of the IEE programme could be increased by giving more focus and priority to certain general programme sectors.



The relevance/impact of the IEE programme could be increased by raising the budget per project



As seen from the first chart in Figure 10, both project partners/coordinators representing the beneficiaries and NCPs agree that the relevance and impact of the IEE programme could be improved by giving more focus and priority to certain general programme fields. On the other hand, EACI project officers disagree that it would be beneficial to give priority to certain fields.

When asked about specific suggestions for change, SAVE and ALTENER are mentioned most frequently by the partners/coordinators as fields of action which should be given more focus and priority[79]. The far majority of the project officers, on the other hand, openly state that all four fields of action should be given priority. Some project officers, however, point to the advantages of devoting more focus to INTEGRATED projects – a view that has also been expressed by some of the interviewed external stakeholders. The NCPs favour SAVE which is mentioned by almost half of the respondents who answered the question. Several respondents nonetheless mention ALTENER and STEER, while others indicate that they think all sectors should be given more priority. Accordingly, these figures provide no clear answer on the relevance of a change in focus and priority between the different fields of action within the P&D programme.

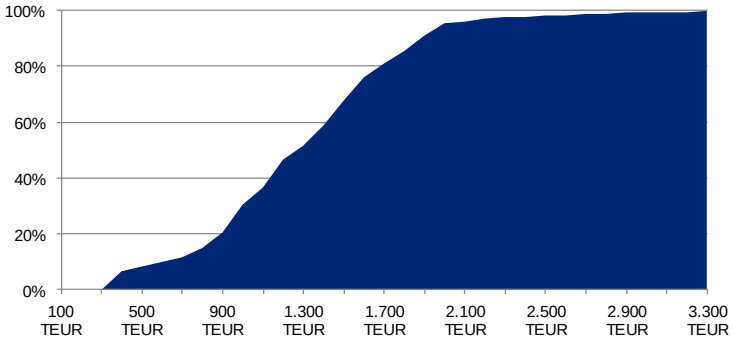
Based on the interviews with representatives from the EC institutions and the NCPs, there appears to be more consensus regarding the need for a change of focus with respect to some of the major priority areas (scopes) included in the policy options in chapter 7. Hence, a substantial number of respondents express the view that the marginal returns of further awareness raising projects are rather limited, at least in the old Member States where the general awareness of sustainable energy solutions has already been substantially raised compared to a few years ago. By contrast, there is a general view that more focus should be devoted to projects where the participants commit to concrete obligations for carrying through actual changes in behaviour and increased levels of investment in innovative energy solutions. This could be done through projects that create obligations for achieving more favourable market conditions on the supply side or projects that directly prepare the ground for new investments. So far such projects have been fewer in number than projects in the other priority areas (cf. the frequencies in Table 9 for example).

[79] This conclusion is based on answers from other fields of action. That is, answers from partners/coordinators of SAVE projects stating that SAVE should be given more priority are left out of the analysis.

According to the interviewed stakeholders, there is still much support for keeping a strong focus on projects that facilitate the implementation of EC policies in the area of sustainable energy. This is considered an essential component in the IEE programme due to the fact that there are still major practical and institutional difficulties in the member states with respect to having the policies implemented. Moreover, no other EC programme than the IEE programme instruments within promotion and dissemination and concerted action has a direct focus on enabling policy implementation within the area. Finally there is a clear need and synergy potentials for a coordinated European level approach to cross-national projects focusing on removal of administrative barriers to EC policy implementation in the member states.

The project partners and officers have also been asked about the expected effect of changes in project size as measured by the budget per project. The second chart in Figure 10 shows that there is little agreement that increasing the budget per project will improve impacts. Hence, there is no case for a change in priorities with respect to project size. This should be seen against the fact that currently there is very little spread in the budget size which lies between 0.9 and 2 mEUR in approximately 75 per cent of the projects (cf. Figure 11).

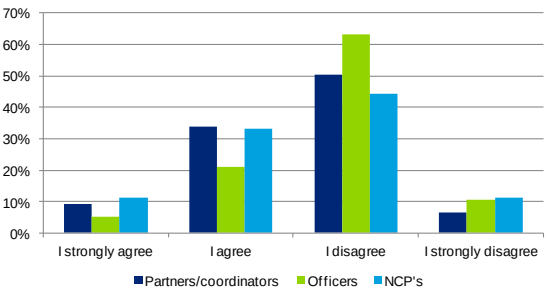
Figure 11: Distribution of budget size among all P&D projects under IEE2



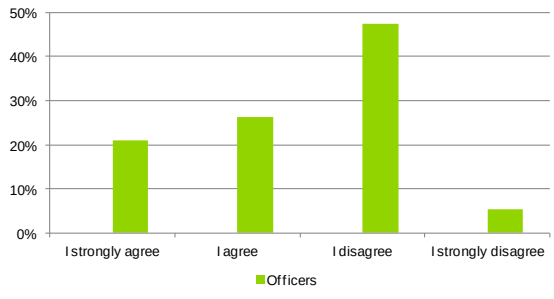
Other questions deal with a possible change in project duration and defining multi-annual key actions. Figure 12 shows the answers to these questions.

Figure 12: Effect of changes in project duration and definition of key actions

The relevance/impact of the IEE programme could be increased by extending the duration of the projects selected



The relevance/impact of the IEE programme could be increased by defining multi-annual key actions per programme field



Both among partners/coordinators and project officers, there is little support for an extension of the project duration; officers are more opposed to the idea than partners/coordinators and NCPs. A

slight majority of officers also disagree that the relevance of the programme could be increased by defining multi-annual key actions although this is strongly debated.

Both in the open survey questions and during the interviews many respondents stated that the possibility for setting annual priorities in the form of key actions with associated budget in the open calls reduces the need for more general reorientations of the P&D programme. That may help to explain why there is not much support for changing priorities along the various dimensions.

Although the answers to the direct questions showed little support for changing priorities within the P&D programme, it might be the case that some project types performed better in the past than others. In that case, there may nevertheless be sufficient reason for changing some of the priorities in the future.

Table 14: Impact across key actions, added scores by project partners/officers

	Frequency	Environmental	Economic	Social	Total
AGENCY	14	4,2	4,0	4,3	4,2
BIOENERGY	16	3,8	4,0	3,9	3,9
BUILDINGS	14	3,9	3,7	4,2	4,0
EDUCATION	5	4,0	3,8	4,3	4,1
ENERGY SERVICES	6	4,3	3,8	4,3	4,2
INDUSTRY	6	3,3	3,2	3,8	3,3
LOCAL ENERGY LEADERSHIP	17	3,9	3,8	4,2	4,0
PRODUCTS	6	4,3	3,9	4,3	4,2
RENEWABLES IN BUILDINGS	2	4,0	4,1	3,9	4,1
RES SMALL SCALE	8	3,4	3,8	4,0	3,8
RES-E	9	3,7	4,4	4,2	4,2
RES-H/C	6	4,1	4,0	3,9	4,0
TRANSPORT	15	3,9	3,6	4,2	4,0
Total	**124**	**3,9**	**3,9**	**4,1**	**4,0**

indicates that projects within the industry and renewables small scale key actions are expected by project partners/coordinators and officers to have lesser environmental impacts than for example projects within the products, energy service and agency key actions. With respect to economic performance (security of supply and growth stimulation), some of the underlying key actions within the ALTENER field of action, for example RES-E, renewable energy systems and renewables in buildings are assessed by the respondents to be the best performing, while projects within the industry key action are expected to have less economic impacts compared to the other. The small number of observations within several key actions however implies that we cannot make firm conclusions based on these indications.

More precise results may be achieved by direct comparison of projects in terms of their expected cost-effectiveness across all impacts categories. The project officers who each have responsibility for a number of projects have been asked to perform such cost-effectiveness ranking of their respective pools of projects against a general average. A selection of the most interesting results with respect to average cost-effectiveness scores are shown in Table 15 below.

The cost-effectiveness scores in the table are based on the ratings performed by EACI project officers. They have been asked to indicate how they think the cost-effectiveness of the project relates to that of the average IEE promotion and dissemination project. Scores are assigned to their answers according to the following: (1) Much lower cost-effectiveness; (2) Lower cost-effectiveness; (3) Same cost-effectiveness; (4) Higher cost-effectiveness; (5) Much higher cost-effectiveness.

Table 15: Cost-effectiveness rankings by project officers across different project types

Fields of action		**Priority area**		**No. of countries involved**	
SAVE	3,4	Facilitating policy implementation	3,9	1 country*	4,3
ALTENER	3,9	Creating favourable market conditions	3,6	3-5 countries	3,6
STEER	3,5	Preparing the grounds for new investments	3,9	6-9 countries	3,9
INTEGRATED	4,0	Awareness raising	3,7	10-14 countries	3,4
		Building capacities and skills	3,8	15-28 countries	3,4
Key actions		**Coordinators' organisation profile**		**Stakeholder participation**	
AGENCY	4,3	Governmental	3,6	Public authorities	3,7
BIOENERGY	3,6	Public commercial organisation	4,3	Policy makers	3,6
BUILDINGS	3,4	Private non-profit Organisation	3,7	Utilities	4,0
ENERGY SERV	3,1	Private Commercial Organisation	4,0	Energy agencies	3,7
INDUSTRY	3,6	European Economic Interest Group	-	Transport agenci	3,5
LOCAL ENERG	4,0	International Organisation	-	Education system	3,8
PRODUCTS	3,1	Other	3,9	Financial Investor	3,8
RENEWABLES	4,5			Citizens	3,7
RES SMALL SC	4,0			Building professic	3,7
RES-E	4,1			Manufacturers	3,7
RES-H/C	4,1			Farmers, landow r	3,7
TRANSPORT	3,5			Industry	3,6
				Transport operato	3,6
				Standards bodies	3,3
				Media	3,7
				Other	3,8
				Don't know	-

* Agency setup projects

The results indicate that INTEGRATED and ALTENER projects are generally considered by project officers to be more cost effective than projects within the other main fields of action. With respect to priority areas, projects that prepare the grounds for new investments and projects that facilitate policy implementation are considered to be the most cost effective. The cost-effectiveness scores are based on subjective internal comparison and judgments with respect to the respective pool of projects administrated by each project officer. Moreover, the results are based on a small number of observations in some cases. This should be kept in mind when considering the differences, such that firm conclusions are difficult to draw.

Looking at the key actions, the perceived cost effectiveness of renewable in buildings and agency projects stands out. The expected cost effectiveness of agency projects is an important underlying reason why the category of projects that facilitate policy implementation is regarded as the best performing priority area. Projects within the products and energy services key actions, which were assessed very positively in terms of their absolute impacts, are undoubtedly considered by respondents to be somewhat costly to implement as they are ranked relatively low in terms of perceived cost-effectiveness.

Both in the open survey questions and the interviews with representatives from the EC institutions, a number of respondents particularly regret the termination of the agency key action which is no longer among the annual IEE II priorities, and the limited period of support for the newly established local and regional energy agencies co-funded by this action. There have been very positive experiences and impacts from P&D projects providing assistance in setting up local and regional energy agencies within EC countries where these did not exist or were insufficient. Compared to the rest of the world, the EC is leading with respect to the set up of local and regional energy agencies which are very important for stimulating both policy implementation and thereafter continuously setting new ambitious energy targets and following up on these with concrete local actions, and support to involved stakeholders. If successful, such projects will have a high and long-term leverage factor. Although it is reasonable to change the focus of future P&D projects in this area from the establishment of local and regional energy agencies given their perceived sufficient coverage, many respondents feel that the agencies still face many challenges after their establishment for which extended support would be relevant through a new P&D agency key action aiming to ensure a smoother transition to autonomy from EU co-funding.

An external evaluation of the energy agencies started-up with co-funding from the IEE programme has been performed[80] and found that the agencies provide local assistance to support the dissemination of more sustainable energy. Below is an overview of the main conclusions:

- There is still a demand among public authorities for energy agencies.
- Energy agencies should only be created where they can address specific local demands, which can differ across member states.
- Contrary to expectations, the EU funding of agencies has not lead to creation of additional agencies established without EU funding.

[80] 1.Energy agencies: evaluation of the relevance of Community funding of local and regional energy agencies. 2010 Matrix Insight and Ecologic Institute.

- Communication between agencies and policy makers should be better structured, so agencies can act as a local source of expertise on EU energy policies.

- IEE funds are needed for the establishment of agencies, and public authorities generally do not set up the agency when the application has been refused. Moreover, some agencies are not funded beyond the IEE funding period which highlights the challenge of finding new sources of funding. Political support is a main success factor for the agencies beyond the three years of IEE funding.

- To allow for better monitoring and evaluation of the agencies, a simple reporting system should be introduced, ideally focusing on a few key indicators such as CO_2 saved etc.

The cost-effectiveness scores in Table 15 moreover indicate that having too many countries involved in the project may impair cost-effectiveness. Cost effectiveness indeed appears to decrease where there are more than ten countries involved in projects. Furthermore, projects managed by public or private commercial organisations seem to be more cost-effective than those coordinated by non-commercial organisations. Finally, including for example utilities in the stakeholder group appears to be a valuable asset for making the project more cost-effective as projects where utilities are involved have a higher average cost-effectiveness score than other projects.

In the open question within the survey related to impact/relevance of changes in the programme, and during the interviews, some suggestions appeared more frequently than others:

- Several partners/coordinators, NCPs and central EC institutions request more coordination and communication across the different IEE projects, and some mention that EACI should guide the communication and exchange of experience. Moreover, some suggest more coordination with other EU activities outside the IEE programme. The need for more coordination is also emphasised in relation to P&D projects. Some argue that requirements should be made, more budget should be reserved, and procedures should be designed for better coordination across projects within the same area which is said to have little or no focus in the existing programme. It is suggested that more common meeting places and events should be arranged for the project partners. It is believed that such cross-coordination could increase substantially the dissemination effects of the individual projects. This is why the EACI manages some projects in clusters, and holds annual contractor meetings when resources permit and in sectors where it makes sense to do so.

- It is also suggested that the individual projects should have more budget for communication and dissemination of the results after they are completed which, in some cases, might imply granting for project extensions after the 3-year period (on the other hand, Figure 12 above showed that there is no general consensus on extending the project duration), but would more generally mean planning for dissemination activities after the end of other project work packages within the 3-year duration of the projects.

- Although, in general, the administrative burdens are considered reasonable, some respondents request a reduction of the administrative burden connected to applying for the programme which is particularly high in view of the decreasing acceptance rates and non-eligibility of such costs. Some project officers suggest that transaction costs could be reduced and more high-quality projects attracted through a two-step selection procedure for the open calls, with an initial assessment of an abstract. Such a solution could help, in par-

ticular, to attract more proposals with financial institutions being involved which is usually not the case in the existing programme, by lowering the barrier to entry.

- Several respondents also suggest including possible funding of equipment and small-scale technology investments for demonstration purposes as part of the projects to be carried out within the P&D programme. As in the two proposals above, that would imply either a higher budget for each individual project and hence for the P&D instruments as a whole, or having fewer projects

- A number of respondents suggest continuing to focus on ensuring reasonable consortium sizes, typically up to 10 members. This stems in accordance with the self-evaluation of impacts by project partners and officers, according to which projects with a higher number of involved countries (more than 10) generally appear to be less cost-effective in than those with a more moderate number, even if exceptions to this generalization may be relevant in cases where a broad EU coverage is relevant. The minimum consortium size of three participants is considered adequate.

8.1.4 The role of the promotion and dissemination instrument in the future

The evidence above indicates that, despite the rather limited budget (compared to for example the framework energy research programmes, the regional funds for energy investments and the recently established EEE-F funds) promotion and dissemination projects make a valuable contribution to achieving the EC objectives relating to sustainable energy. In particular, they fill out gaps and build bridge between the upstream R&D&T energy innovation and the downstream adoption of energy technologies and solutions that emerge from the innovation process. In this respect, and through their dissemination activities, the more successful projects may have long-lasting high leverage effects far beyond their original limited scope. Moreover, promotion and dissemination activities at the European level will often be more cost effective than similar activities at the national level which, by nature, have a more limited reach and impact and not the same opportunities for discovering best practices across a broader pool of experiences.

Yet, because of their soft, intangible nature, P&D projects face problems with respect to monitoring and disclosing of the actual impacts. That makes it difficult to ensure continuous improvements within the P&D programme, since there is too little basis for knowing how to devote focus and budget from the less to the more effective parts of the programme. These problems may also be an important reason why the P&D projects still face a rather limited budget and a declining budget share of the overall IEE programme despite the wide recognition of success stories on a case by case basis and the wide agreement on the continuous need for the instrument. Yet, the impact assessment carried out above has shown that certain changes in focus may improve the future impacts of the P&D programme instrument and which should be taken into account in the assessment of the policy options identified in chapter 7:

- The marginal returns from awareness raising activities are probably not as high as in the beginning of the programme although there may still be areas where it is relevant, and in particular some activities may be more relevant in the new member states than in the old ones.

- Given the difficulties member states face in implementing sustainable energy policies, including EU legislation in the field, there is still a great need for projects that focus on faci-

litating policy implementation. Projects within this priority area have been considered as successful in the past by project partners and coordinators, especially the agency and local energy leadership key actions, and should therefore continue to be focused on in the future.

- Within the P&D programme, there has been increasing focus on projects that goes beyond the traditional awareness raising and capacity building projects in terms of creating more favorable market conditions for innovative solution on the supply side and even further in terms of preparing the grounds for new investments. However, there are still a rather limited number of such projects and the approach, target-setting and monitoring is still not sufficiently focused to exploit the high potentials of such projects for creating downstream effect. Hence, there are indications that more focus and budgets to the latter kinds of projects in the future could increase the marginal returns of the P&D programme instrument.

- A very high number of project partners from different countries being involved tends to make the projects more complex and less cost effective (typically where more than 10 partners are involved) which is counterproductive to the objective of maximum promotion and dissemination for the money invested. This should be considered in the future prioritisation of open call applications, although exceptions should of course be considered where relevant.

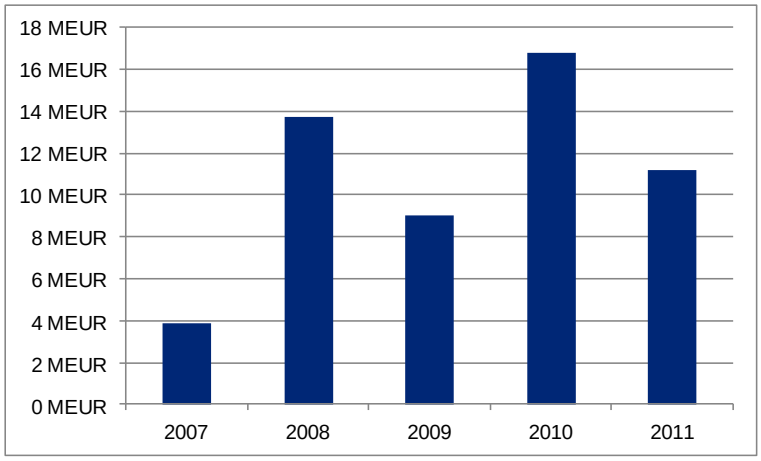
- There also indications that the P&D programme has not yet been sufficiently successful in attracting applications from new member states which are still underrepresented on the project management side although the highest potential may sometimes be in these countries. The problem is augmented by the small budget and the low acceptance rate which makes it very difficult for less experienced applicants to receive a grant. In the future, it may be considered to design certain award criteria and announce certain key actions in order to increase the chances that a greater share of the P&D funding will be allocated to projects within the new member states. Moreover, tenders might be used with a view to awareness raising and training activities in order to stimulate more and better applications from the new member states.

8.2 Impacts of the tender programme instrument

The main distinction between tenders and open calls for promotion and dissemination projects is that, in the case of tenders, the EACI or DG ENER specifies the tasks and end products (deliverables) of a project which they define within the IEE programme, and thereafter the suppliers are selected through a tender competition between the bidders proposing to provide these end products. By contrast, in open calls, it is the suppliers (project partners) who define the projects and draft project proposals within certain key actions prioritised by the EACI and thereafter apply for funding in an open call competition.

The figure below shows the tenders size in the budget according to the IEE annual work programmes.

Figure 13: Tenders budget in work programmes



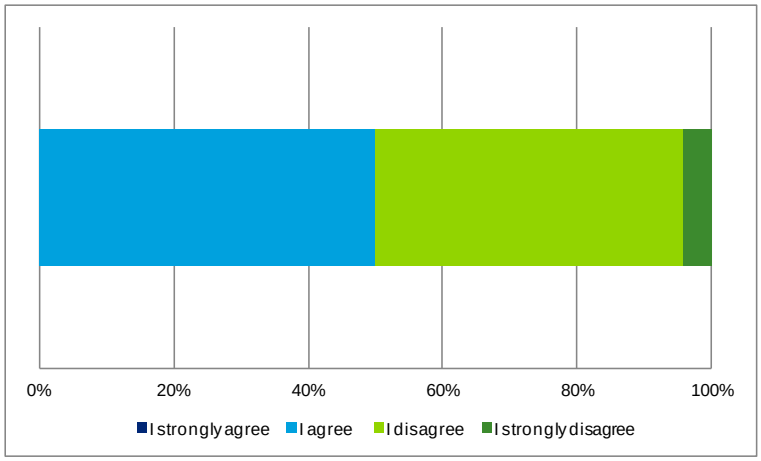
The figure shows there have been a lot of variation in the yearly budget for tenders, and the budgets in the last four years have been significantly higher than in 2007. The 2010 work programme contained 25 calls for tender, including the final evaluation of the IEE II programme, compared to 16 and 15 calls in the 2009 and 2011 work programme respectively. Generally, the budget for tenders is not decided in advance but depends on the Commission's need for information and input each year.

There is limited evidence on the effects of tenders from recording, tracking and monitoring activities. The general view among interview respondents is that tenders fulfil important roles – especially in providing studies which are used to improve the administration of the IEE and in providing other kinds of support to facilitate the implementation of EU directives within the area – and therefore are a valuable part of the IEE programme which should remain.

However, many respondents would like to see more documentation of the results and effect of tenders and some suggest that the budget of tenders should be reduced to increase the resources available for the open calls.

Below is an overview of the answers by NCP's to the question *"In your opinion, is the budget allocation between the promotion and dissemination projects, the market replication projects, and the tenders within the IEE II programme adequate compared to the needs and issues in the respective fields?"*

Figure 14: Is budget allocation between P&D projects, ELENA projects and tenders appropriate?



The figure shows, that more than half of the 26 respondents disagree that the budget allocation is appropriate. Four respondents out of the 13 which have elaborated their response state that the budget for tenders should be reduced, while many of the other elaborations are less concrete and do not address specific instruments. This provides some indication that the impact of tenders are perceived to be lower than for the other parts of the programme.

A few stakeholders point out, that there is little transparency and communication about tenders, while a few state that they think that tenders should not necessarily be a part of the IEE programme, as their results are only used by EC. In fact, there is no obligation to communicate the results of tenders as with P&D projects. Since it is considered ideal to centralise programme-related communication on tenders, the EACI have nevertheless included all tenders in their communication plan for 2011.

As confirmed by the EACI, tenders can be launched for different reasons:

1. to obtain information needed for future policy making (studies).

2. to obtain technical inputs for a report, which was required by an EU Directive.

3. to purchase services which would assist the Commission in the management and implementation of a special initiative, such as ManagEnergy, the Covenant of Mayors or the Sustainable Energy Europe Campaign.

Tenders falling under the first two categories are mainly initiated to inform the Commission, and this is the reason for which there is little communication of their results (although this is done when relevant and possible). The management of some of the tenders under the third category, which are to a larger extent of public interest, have been transferred to EACI during the last couple of years.

Interviews have indicated that the awareness of the P&D and the MR programme, and also awareness of the dedicated structural/regional funds for energy investments and their possible links with the IEE programme, is still rather limited among relevant stakeholders throughout the European member states. This indicates that an increased focus on tenders in the direction of funding awareness-raising campaigns with respect to these opportunities may help to attract more qualified pro-

ject applications with high potential to the IEE programme, and hence improve conditions for the future programme performance.

Accordingly, while tenders are still relevant to include in a successor to the IEE II programme, it should be considered to adjust the current scope and focus of the instrument. The size of the budget should also be considered as both representatives from the EC institutions and NCPs have pointed out that the budget for tenders should be reduced although there is potential to increase their use for awareness raising. It might in this perspective be relevant to increase the focus on tenders funding awareness-raising campaigns throughout Europe with respect to the opportunities associated with the different IEE programme instruments, including promotion and dissemination projects, ELENA projects and concerted action. Reducing the funding for tenders providing the EC with information would moreover require an alternative to be found given their role in policy making and implementation.

8.3 Impacts of the concerted action programme instrument

Concerted actions address common challenges for the Member States and the need for the organisation of such actions at a European level is therefore obvious. They have a very specific aim of providing a confidential forum for responsible officials from the Member States to share their experiences in the implementation of selected EU Directives in sustainable energy. For this reason, only one designated organisation in each Member State is eligible to participate, typically ministries, government energy agencies etc. which are chosen because of their administrative powers, technical competence or specific expertise.

Due to their different focus and structure to P&D and MR projects as well as tenders, concerted actions should be regarded as complementary to these.

The Concerted Actions are managed jointly by DG ENER and the EACI, and there are three of these under IEE II, the first two of which have been renewed as they are planned for three years:

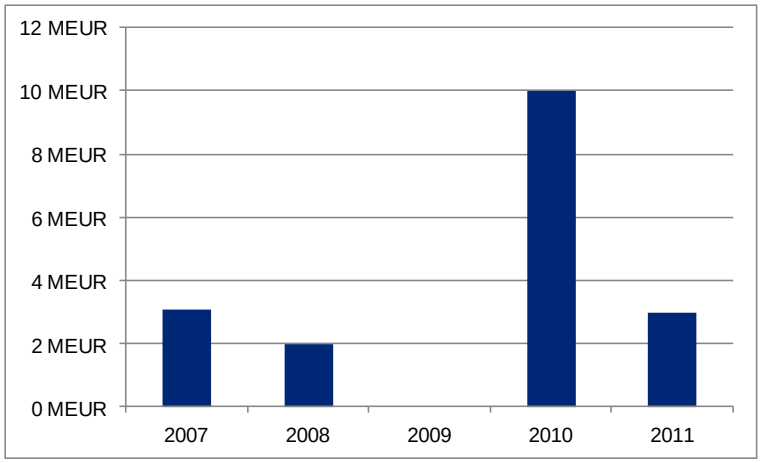
1. Concerted action on the implementation of the Energy Performance of Buildings Directive (EPBD)

2. Concerted Action on the implementation of the Energy Services Directive

3. Concerted Action on the implementation of the Renewable Energy Directive

Below is an overview of the yearly budget for concerted actions in the annual work programmes.

Figure 15: Concerted actions budget in work programmes



There is much variation in the budget, though this is due to the fact that concerted actions are budgeted in their first year although they last three years (as is also the case for all other IEE projects), and to the fact that concerted actions are only defined for key directives in sustainable energy, therefore following their timelines. The actual costs allocated to concerted actions each year do not correspond to the pattern in the figure above (as is the case for all other IEE projects).

As for tenders, and due to the somewhat confidential nature of concerted actions, there is generally not much evidence on the effects of concerted actions. The interviews have shown that concerted actions fulfil an important role especially in organising joint project efforts that address the removal of administrative barriers to member state implementation of community legislation related to energy objectives.

Energy efficiency is regarded as an effective way to reduce emissions and improve energy security. However, in order to increase energy efficiency it is crucial that the legislative framework is implemented.

Directives have been put in place to strengthen the legal framework, but implementation of legislation has proven to be difficult, even though some progress has been made recently. The Renewable Energy Road Map pointed out, that the indicative nature of national targets is a possible reason for the slow progress. While directives exist and targets have been formulated, reports have indicated that Europe will fail to meet the short term targets. These circumstances accentuate the need for initiatives, which stimulate legislation implementation by removing non-cost barriers. Concerted actions address these barriers by focusing on exchange of experiences regarding required activities and procedures necessary for effective implementation of specific directives

The fact that concerted actions focus on policy implementation is perceived as valuable by several of the interviewed stakeholders. Generally, they find the sharing of best practice across EU important. A few interviewees points out, that while the concerted actions are valuable, there is too little communication, transparency and structure surrounding them.

Concerted actions serve as a confidential forum where officials can share experiences about the implementation of directives. Therefore, much information is not shared publicly. Yet, each concerted action has a website used for sharing information which is relevant and suitable for public communication.

Concerted actions are particularly relevant in addressing administrative barriers to energy efficiency improvement because they can bring together civil servants from member states and local governments to discuss the administrative barriers, exchange best practise solutions and identify needs for further community action.

Hence, the concerted actions are indeed considered a relevant instrument that should be continued in a successor to the IEE II programme. The actions address a challenge, which studies have pointed out to be important in order for the European policies to be implemented. Stakeholder interviews support this view, and there is general agreement that the actions are valuable. However, communication about this programme element is very limited and should be improved.

8.4 Impacts of the ELENA programme instrument

The market replication programme element is relatively new and, until the 2011 work programme, it consisted of the ELENA-EIB facility which was introduced in 2009 and launched its first projects in 2010. Since the 2011 work programme it has been extended with the ELENA-KfW and ELENA-CEB facilities though no projects have been approved or signed for these facilities yet.

8.4.1 Overview of supported ELENA projects and expected results

Below is a table summarising the status of projects which have been signed or are in the process of being signed within the ELENA-EIB programme.

Table 16: Status of ELENA projects per 1 February 2011

	Frequency
Approved projects	11
Signed projects	*5*
Project applications in progress	24
Total	**35**

The numbers show that only five projects have been signed which indicates, that the programme element is still in an early phase.

On the basis of data provided by the EIB and data extractions from the contracts, we have created a table that provides basic information on all signed ELENA projects and projects in the pipeline.

Table 17: Overview of signed and approved ELENA projects

Beneficiary	Project Name	Country	Sector	Total Project Development Budget (EUR)	Requested ELENA Contribution (EUR)	Total Investment (EUR)	Leverage Factor	Energy savings p.a. (GWh)	CO2 avoided p.a (tonnes)	Renewable energy production p.a. (GWh)
Prov. of Barcelona	REDIBA	Spain	EE/RES	2.700.000	1.999.925	500.000.000	250	280	185.000	114
Prov. of Milan	Energy efficiency - Covenant of Mayors	Italy	EE	2.161.000	1.944.900	90.000.000	46	27	9.000	1
Stadtsverwarming of Purmerend	CHP/District heating	The Netherlands	DH/CHP	1.991.000	1.791.900	98.000.000	55	50	70.000	287
City of Paris	Efficacité énergétique écoles Paris	France	EE	1.530.000	1.377.000	180.000.000	131	33	6.500	0
Fundación Movilidad Madrid	MOVELE	Spain	Transport	1.304.640	1.148.083	53.400.000	47	4	1.800	0
Signed total				**9.686.640**	**8.261.808**	**921.400.000**	**107**	**394**	**272.300**	**0**
Vila Nova de Gaia	Vila Nova de Gaia Sustainable programme	Portugal	EE/Transport	1.022.572	920.315	73.400.000	80	35	12.100	6
City of Malmö	SPIS: Rail & tram intercity project	Sweden	Public Transpo	3.300.525	2.970.472	170.500.000	57	82	25.000	0
DAFNI	Development of smart-grid infrastructure in autonomous island grids of the Aegean Sea	Greece	Smart Grid/RES/EV	810.200	688.670	52.820.000	77	42	18.770	21
Greater London Authority	RE:FIT	United Kingdom	EE	3.205.199	2.884.680	114.950.000	40	0	99.200	0
Transports Metropolitans de Barcelona	Electrobus: Energy efficient bus network for Barcelona	Spain	Transport	2.260.000	1.921.000	163.880.000	85	61	16.400	0
Approved total				**10.598.496**	**9.385.137**	**575.550.000**	**61**	**220**	**171.470**	**0**
Greater London Authority	Decentralised Energy	United Kingdom	EE	3.227.493	2.904.744	113.700.000	39	275	74.700	0
Under appraisal total				**23.512.629**	**20.551.689**	**1.610.650.000**	**78**	**889**	**518.470**	**0**
Total				**43.797.765**	**38.198.634**	**3.107.600.000**		**889**	**518.470**	
Average							**78**			

For confidentiality reasons, the projects in the pipeline are excluded from the table above which shows only the five projects for which a contract has been signed (in the top part of the table) and five additional projects which have been approved but not yet signed. Finally, one project is under EC appraisal. Of the five projects initiated so far, only one - the REBIDA project in Barcelona - has been in operation long enough to produce its first six monthly progress report.

Taken together the signed and approved ELENA projects imply project development support in the magnitude of 20,5 mEUR and energy investments of 1,6 bnEUR that is by a leverage factor of 78. When implemented they are expected to lead to reduction of 0,5 Mtonnes CO2 per year plus energy savings of nearly 1 TWh per year and additional other environmental improvements such as reduction of air pollution within the cities.

8.4.2 Updated status report on ELENA projects

An updated status report on ELENA states that the direct and indirect jobs created during the implementation and lifetime of the investment programmes is estimated to 25.400 person-years if fully achieved. The current pipeline comprises 23 projects with a good distribution on sectors, and a majority of projects with investments in multiple sectors. The total potential investment is 3,7 bnEUR, and the pipeline includes three projects in new Member States.

The status report presents some remaining barriers relating to the institutional framework:

- A lack of capacity for the preparation of large scale projects.
- Unfamiliarity with requirements of ELENA, in particular the conditional link between technical assistance and underlying investment.
- The low level of communication between different sectors inside the administration.
- The fact that projects with underlying investments below 50 mEUR were rejected so far for ELENA-EIB.

and the economic/financial framework:

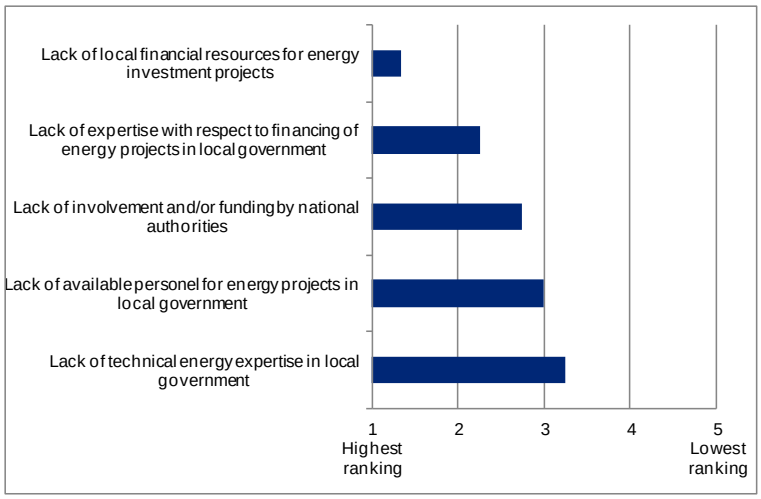
- Reluctance from public bodies to commit to large investment programmes in short period of time.
- The level of indebtedness and creditworthiness of some local authorities.
- Limited knowledge on alternative financing opportunities.

8.4.3 A survey of initial experiences with ELENA

To gather more detailed information we have conducted a survey among the project managers of the five signed ELENA-EIB projects. All five of the project managers have submitted their answers to the distributed questionnaire. When interpreting the results it should be noted that the projects are still at a very early stage, and therefore expectations about realisation of targets are based on experience from a short period of the project.

The figure below gives an overview of the main reasons for applying.

Figure 16: Average importance of reasons for applying (ranking with 1 being most important), ELENA project managers

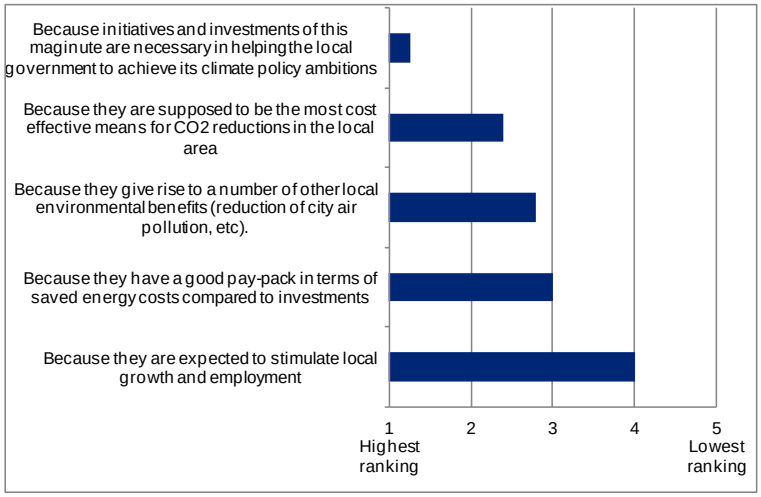


The figure clearly indicates that the main reason for applying is a lack of local financial resources and expertise within financing.

Below is a presentation of the project managers' main reasons for committing to the initiatives and investment stipulated in the project.

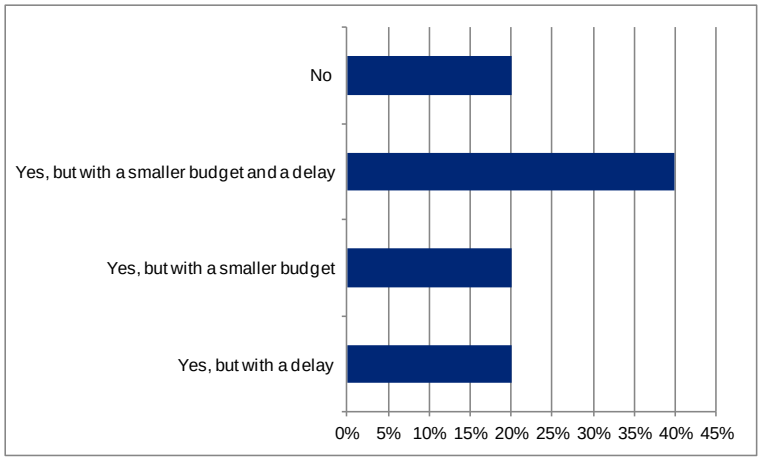
It appears that the main reason why projects managers (and the local governments they represent) have agreed to the investments plans committed to in ELENA projects, is that the investment plans are considered as an important contribution to local climate policy ambitions. Some even find that the agreed initiatives and investments are the most cost effective means to CO_2 reductions in the local area. Good pay-back in terms of saved energy costs and other local environmental benefits are also mentioned as a reason by some of the respondents, but are considered less important.

Figure 17: Main reasons for committing to the initiatives and investments stipulated in the project (ranking with 1 being most important)



Stimulation of local growth and employment is considered the least important of the five reasons mentioned above which is a bit surprising in view of the fact that one of the central objectives of the whole IEE programme and especially the more investment oriented part like the ELENA, is to stimulate growth through market adoption of innovative energy technologies. The results may thus indicate that the projects managers have difficulties is seeing how the assumed growth potentials can be realised in their local areas, or do not look beyond their individual projects at the development of the ESCO market linked to these.

Figure 18: Opinion on whether project would be realised without ELENA funding

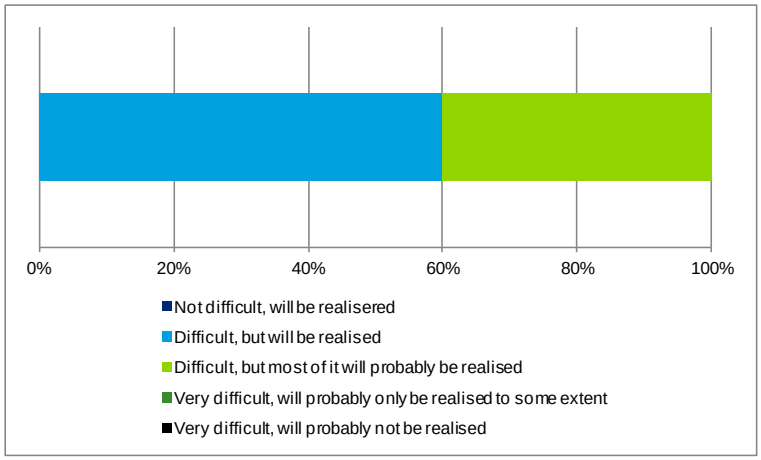


A measure of the ELENA impact is whether the projects would have been realised without ELENA funding. If the projects would not have been realised, the impact is significant, while the impact on the other hand is negligible if projects would have been realised with the exact same scope without ELENA support.

Figure 18 provides an overview of the project managers' opinion on this question. It clearly indicates, that the projects would not have been initiated in the same form - i.e. with a programmatic approach leading to a rapid large scale investment - without ELENA funding. One project manager indicates that the project development would not have been initiated at all without the funding. One manager indicates that the project would have been delayed with 6-12 months, while two others estimate delays of more than two years four to eight years. Two respondents answer that a smaller budget would have caused the external assessment to be left out. It is key to note that delays and smaller investment levels, probably without a programmatic approach would most likely affect the bankability of such investments, perhaps even making these impossible.

For the projects to be effective, it is important that the planned investments are realised to a large extent. The figure below shows the expected difficulty to achieve this.

Figure 19: Expected difficulty for municipality/local government to realise planned investments



The figure shows that the programme managers expect the realisation of investments to be difficult but think that most or all of the investments will be realised. Slow administrative procedures and lack of financial resources are mentioned by two project managers each as some of the main difficulties. This complicates the work to get access to private companies and private financing in the energy sector.

Figure 20: Expected difficulty to keep within timeframe of planned investments

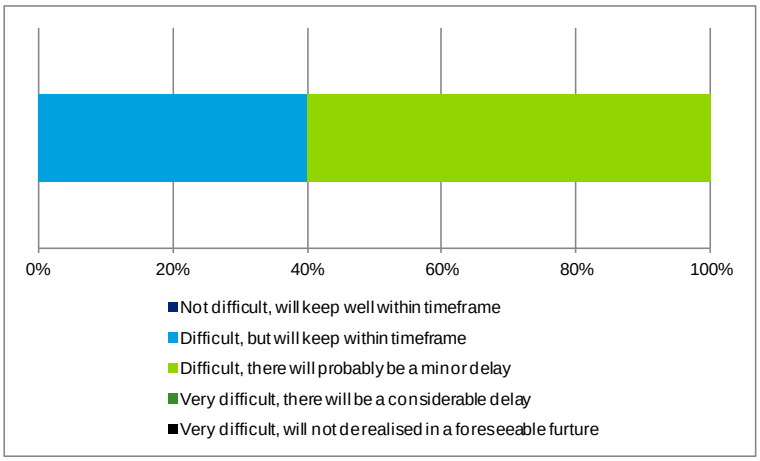
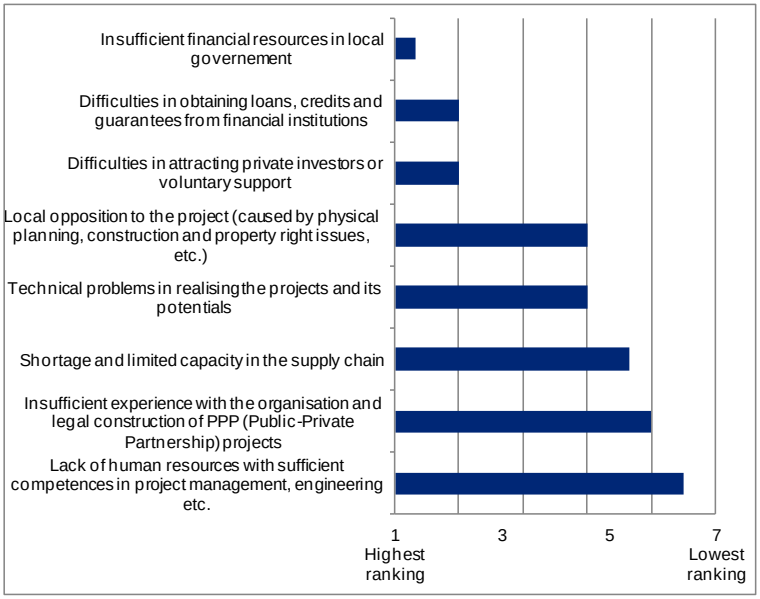


Figure 20 provides an illustration of the expectations about keeping the planned timeframe of the planned investments. Three of the five project managers expect some delay and the remaining two project managers expect to keep within the timeframe.

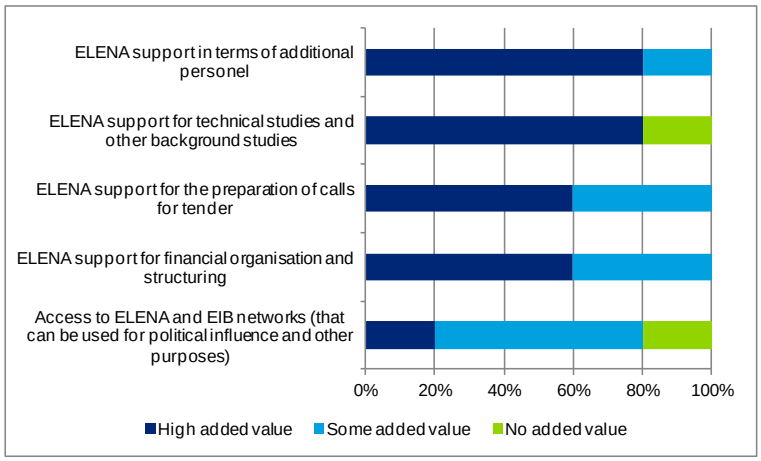
There are several potential risks to the realisation of targets. Figure 21 shows the project managers' ranking of a number of major risks.

Figure 21: Major risks that project targets will not be achieved (ranking with 1 being most important)



As were the case with the main reasons for applying, insufficient local financial resources are considered a major problem. Hence, insufficient financial resources from local government, local financial institutions, and local investors are seen as the major risks that the specified targets will not be achieved. This indicates that ELENA support is no guarantee that the projects will be realised since, in the end, the fate of the projects is decided by the availability of financial resources for the direct energy investments which the ELENA support is supposed to facilitate. The survey shows that it considered a major risk factor that such funds will not be available in the end. The results are in accordance with the listed remaining barriers from the ELENA status report mentioned above.

Figure 22: Expected added value from ELENA services



ELENA support comprises several services available for the projects. Figure 22 shows the expected added value of these services. Generally, most project managers expect to gain added value from all ELENA services. Additional personnel and ELENA support for technical studies and other background studies is expected to give a high added value by most project managers, while the access to ELENA and EIB networks is only expected to give high added value by one project manager.

When asked whether the project development services have provided sustainable benefits for the project, all project managers indicate, that this is the case. New skills and a new vision of the global initiatives are mentioned as examples.

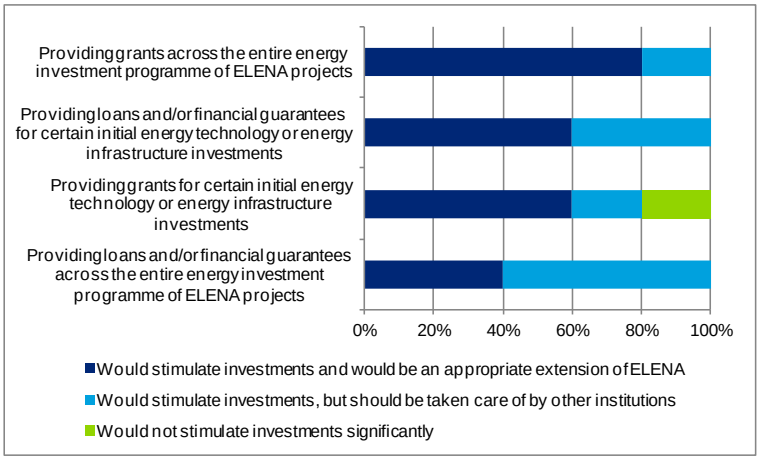
8.4.4 Forward-looking assessments of the ELENA programme

In a forward-looking perspective it could be considered to extend the programme scope in order to stimulate investments further, albeit with a clear approach to the type of underlying investments to be supported. Below in Figure 23 is a presentation of the project managers' opinion on different proposed extensions.

As can be expected, all project managers believe that extending the ELENA programme to provide grants for investments would further stimulate the level of local energy investments, and a majority think that this is an appropriate extension of ELENA although that is clearly not the case given that the IEE programme is not supposed to provide support to overcoming -technical barriers including the costs of investing in the relevant technologies). Providing loans and/or financial guarantees is also expected to stimulate investments by all project managers, and three of them believe that this extension could be a part of ELENA.

While the other suggested extensions are generally expected to stimulate investments as well, there are mixed opinions on whether they should be taken care of by ELENA or other activities.

Figure 23: Opinion on whether investments could be stimulated by extending the programme scope



During the interviews, the majority of respondents from the EU institutions in the area expressed the opinion that, besides this not being the purpose of IEE, the scope and budget of the ELENA programme is far too small to provide a substantial stimulus to energy investments among local governments and cities. In consequence, some respondents took the view that the ELENA facility should either be abolished or clearly focused on a specific type of investment. Furthermore, despite some synergies in the mobilisation of investments between ELENA and the other EU funds for direct energy investments (for example the JESSICA SF/CF funds) the limited number of cases is also emphasised as a reason why local energy investment potentials have not yet materialised to a very high extent. Based on that, a number of respondents suggest that more conditionality could be built into the ELENA programme, for example, conditions and plans for applying for regional funds (and/or other EU energy investment funds, for example the established EEE-F funds to be administered by Deutsche Bank). This may pose problems in practice, and a preferable approach could be to simply ensure better promotion and dissemination of the results of such projects to stimulate their faster replication.

A number of respondents suggest that the ELENA facility should possibly not be co-managed (via subdelegation and contribution agreements) by IFIs as it would be preferable to involve more national and local financial institutions with project development services performed as independently of downstream financing as possible to allow maximum flexibility in support to local mobilisation of financial resources.. The results of the various ELENA facilities, and MLEI activities should provide some orientation on this, as they take different approaches, and could be taken into account for a potential successor to IEE II.

8.4.5 New ELENA facilities combining technical support and loans for small-scale projects

In an open question, three of the five surveyed project managers state that they think ELENA should be extended to include projects of a smaller scale. This view is also echoed among some of the interviewed representatives from the EC institutions who suggest that the required investment

threshold of at least 50 mEUR[81] rules out a great number of medium-scale energy investments. Some even suggest that the programme should be extended to small and medium sized enterprises.

In line with this perceived need, a budget has been set aside in the 2011 programme for two new ELENA facilities, respectively:

- A KfW-ELENA facility to be co-managed by the German KfW Bankengruppe with the purpose of supporting local sustainable investments of small and medium scale through both ELENA technical assistance (with an IEE budget of 8 mEUR in 2011), loans provided by KfW and financial intermediaries (i.e. not funded by IEE) and new possibilities for carbon crediting arrangements as part the project financing structure.

- A CEB-ELENA facility to be co-managed by the Council of Europe Development Bank (CEB) with the purpose of providing support for sustainable investments in social housing through both ELENA technical assistance (with an IEE budget of 3 mEUR in 2011) and loans provided by CEB and financial intermediaries (i.e. not funded by IEE).

The new ELENA facilities provide support for projects with underlying investments volumes of up to 50 mEUR and hence for smaller projects below the minimum level of the original ELENA facility co-managed by the EIB. The required leverage factor is reduced to 20 under the new facilities compared to 25 under the original, reflecting an expected decrease in leverage for smaller investment projects.

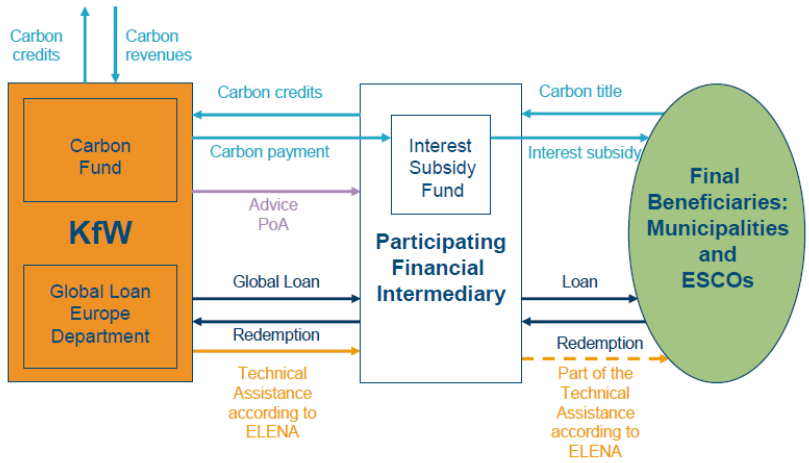
Moreover, there is a more direct link between the ELENA support provided under the new facilities and the access to loans for the underlying investments. In fact, a condition for receiving support under the KfW-ELENA facility is that the investments are financed through loans from the KfW and its financial intermediaries, that is, local banks in the Member States that have been selected to act as participating intermediaries. This has the advantage that better guarantees for realising the investments are provided for all projects for which ELENA-KfW support is granted, since the beneficiaries (local governments) can rely on the financial arrangements provided through KfW and do not therefore have to search the local market for available loans after the initiation of projects. Hence, the risk of not being able to mobilise the necessary financial resources for the investments are less than under the original ELENA facility where subsequent loans may, or may not be, provided by the EIB, and usually only for a part of the entire investment. However, it has the disadvantage of fixing the potential sources of funding at a very early stage, as well as of ultimately constituting a form of grant financing linked to loans which requires careful management.

Like the original ELENA-EIB facility, the KfW-ELENA facility covers up to 90% of eligible costs required for technical support related to a clearly identified investment programme and it provides support for the same sort of activities, that is, feasibility and market studies, structuring of programmes, business plans, energy audits, preparation of tendering procedures and contractual arrangements, project implementation units (including staff).

[81] All surveyed project managers were from the ELENA-EIB facility for which this threshold holds true, unlike for the ELENA-KfW and ELENA-CEB facilities.

Moreover, the KfW-ELENA facility also provide project development support for a new carbon credit financing mechanism that may provide additional cash flows for climate oriented projects that are expected to achieve substantial CO2 reductions (20 per cent CO2 reduction is defined as the minimum target for being eligible for a KfW carbon crediting arrangement). Hence it is assumed that some projects that will be eligible for KfW loans and ELENA support will also be able to generate CO2 reductions that may qualify as joint implementation carbon credits or European CO2 allowances provided that the project charters, management and infrastructure, and monitoring and verification procedures, are set up for that purpose. This is technically difficult and involves significant transaction costs which the ELENA support may help to overcome.

Figure 24: Funding possibilities in KfW-ELENA projects



The figure above illustrates the structure of the KfW-ELENA programme, which may involve ELENA support together with both loans and carbon crediting, or just one of the two.

We find the new ELENA facilities to be promising innovations which specifically address some of the shortcomings identified during the initial practice of the ELENA programme.

8.4.6 The role of the ELENA instrument in the future

While ELENA beneficiaries claim that the some of the underlying investment projects supported by ELENA might be expected to be realised without ELENA funding, this would most likely be with a non programmatic approach (i.e. much smaller scale and more fragmented investments) and a longer horizon, if at all, as such changes to the scale and timing of the investments might put their bankability at risk. This indicates that ELENA stimulates activities which would certainly not have taken place with the same scope and ambition without such funding. The ELENA component therefore can be expected to play a role in a potential successor to IEE II.

Given the short period with active ELENA projects, an assessment of the impacts at this stage is still mainly based on expectations. The value of the services provided by ELENA is generally considered to be significant, as all services are expected to give some or high added value and as they provide an important contribution to leverage large-scale energy investments which, if realised, will have high and measurable environmental and economic impacts. The project managers are still relatively optimistic about the realisation of the project targets, most of which are expected to be realised on time or with at small delay.

The two new ELENA facilities have opened up project development funding for small- and medium scale energy projects in local governments besides larger scale projects. The former also has the ambition to exploit the opportunities for carbon crediting which however will depend on the global agreements on carbon crediting that can be reached after the termination of the Kyoto protocol. Both the existing and the new ELENA facilities have significant potential to directly stimulate innovative energy investments which generate significant environmental and economic effects, and could therefore play a larger role, also in terms of budget, in a successor to the IEE II programme.

The low availability of financial resources are both the main reason for applying for ELENA funds and the biggest risk that targets will not be realized. For a potential successor to IEE II, ELENA might need to find its niche in terms of the type of underlying investments to support, probably best linked to providing support independently of downstream financing of underlying investments and to the ability for similar independent investments projects to follow these. Results from the three current facilities in which different approaches are being piloted should serve to confirm such an orientation. Indeed, the independence of ELENA support from investment funding and loans in the original ELENA-EIB facility contrasts with their coupling in the new KfW-ELENA and CEB-ELENA facilities – the optimal approach may only be determined based on the results of the projects.

ELENA projects are by definition market replication projects although certain interviewees highlight that they have a more narrow focus on project development assistance which could be extended with other types of market replication projects. If the IEE programme intends, in the future, to pursue market replication activities of a significant scale, the ELENA programme may be supplemented for that purpose. Systematic large-scale marked replication projects thus require either new programme instruments administered by EIB or other banks that could form an integrated part of a more investment oriented IEE III programme or an extension of the scope and budget of the P&D programme administered by the EACI to include investment oriented priority areas oriented towards market replication activities and associated investment commitments.

In the Work Programme 2011 a new integrated action on Mobilising Local Energy Investments (MLEI) was introduced under the promotion and dissemination component of IEE II. The action is launched under the call for proposals managed by EACI, and has been subject to significant interest according to EACI. It very closely follows the model of ELENA, and has been developed with help from the EIB, such that it is in essence a market replication facility within the promotion and dissemination component. Its first period of operation is expected to lead to important conclusions regarding possibilities for including such activities in a potential successor programme.

9.Potential impacts of the alternative policy options

Optimally, the ex-ante impact assessment of the policy options would be based on reliable quantitative assessments of the environmental, economic and social impacts related to each building block within the policy options framework, that is, each combination of IEE instruments and priority areas in the respective policy options (cf. Figure 7- Figure 9)

However, as described earlier, it is not possible to quantify the benefits associated with each building block, and even less so the marginal benefits of increasing/decreasing the focus, budget and coverage of the respective building blocks. Hence, it is not possible to base the ex ante impact assessment on a full cost–benefit analysis with monetary valuation of all benefits arising from the policy options. Also, it is not possible to base it on a MCDA approach in which all benefits of the policy options are scored on a cardinal 1-100 scale as that would require at least a physical measure of each impact which are not available due to the lack of monitoring results.

Yet, quantitative environmental and investment targets have been set for some promotion and dissemination projects, and for all ELENA projects, these targets can be used – together with the subjective estimates of expected target realisation from the survey, and the survey responses as to whether the projects would have been realised without the funding – to estimate potential average project benefits. In the ex-ante impact assessment contained in this chapter, such figures will be used, in combination with more qualitative evidence and arguments, to assess the likely marginal environmental, economic and social benefits of the future policy options.

The ex-ante impact assessment presented below will focus on the marginal benefits and costs of the three policy options that diverge from the status quo, that is, no continuation, capacity building oriented programme and investment oriented programme. For each of these three policy options, the marginal benefits, marginal costs and marginal returns (i.e cost effectiveness including consideration of synergies with other programmes) will be assessed.

For the status quo policy option (continuation of current programme) a major part of the impact assessment is already contained in chapter 8. Moreover, in order to be able to select the optimal policy option for the IEE programme, it is sufficient to consider the marginal impact of changing policies compared to the status quo.

9.1 Policy options 1 and 2: no continuation vs. status quo

As the marginal impacts and associated costs and benefits of the no continuation option are the inverse of the existing and foreseen impacts of the entire programme, these will provide the reference for the evaluation of this option.

9.1.1 Marginal costs – forgone benefits in case of no continuation

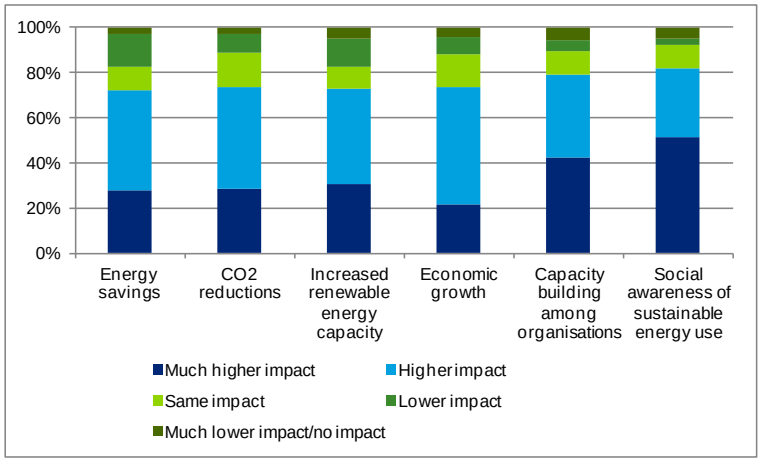
The marginal impacts of the no continuation option correspond to the loss of foregoing the future environmental, economic and social impacts that could have been realised by continuing the IEE

programme in its current form. The forgone benefits can be estimated by projecting the current impacts into the future.

As mentioned earlier, there is little evidence of current impacts from project monitoring. Therefore, subjective impact assessments from the surveys together with qualitative evidence from the interviews serve as key input when evaluating the programme.

Figure 25 below gives an overview of opinions of the project partners/coordinators on the impacts of the promotion and dissemination projects for which they are responsible compared to using the funds for direct investments instead.

Figure 25: Impact of P&D projects compared to using the funds for direct investments



The figure shows that for the majority of projects, environmental and economic impacts, and in particular social impacts are believed to be higher than they would have been if the same funds were used for direct energy investments instead. Although based on subjective opinions, this gives a first indication that not continuing the core programme instrument (promotion and dissemination projects) would entail net opportunity costs compared to the most obvious alternative on how to spend the funds.

Some insight into the future development in impacts can be gained by comparing promotion and dissemination projects with a different start year within the IEE II programme. Table 18 shows that, according to the opinions of project partners/coordinators and officers, more recent projects have slightly higher impact scores than previous projects. Together with the findings in Table 6 and Table 7 from Chapter 8 regarding the increasing rate between the number of projects applied for and the number of projects awarded, the slight upward trend impact scores over time indicates that he promotion and dissemination programme has further potentials. Hence, there is reason to expect that the marginal benefits of extending the programme into the future are increasing rather than decreasing.

With respect to ELENA projects, there is no precise estimate of the future development in total impacts. The pipeline of requests relatively quickly increased and there is potentially remaining significant unexploited potential based on the facts that, so far, projects in only 9 European territories have reached the stage of approval and that the potential environmental and economic impacts

of each large-scale ELENA projects are of a high magnitude and, at the same time, the targets are realistic and progress will be easy to measure.

Table 18: Development in the total impact score of P&D projects across start year, added scores by project partners/officers

	Frequency	Average score compared to direct energy investments	Average score compared to best practise
2008	48	3,8	3,7
2009	37	4,0	3,8
2010	39	4,1	3,9
Total	**124**	**4,0**	**3,8**

There is less basis for projecting the future impacts of concerted actions, and hence the forgone benefits of no longer having them in the no continuation option. Based on the interviews, the concerted action are still considered highly important to facilitate policy implementation in the sustainable area, and given the continuing (and perhaps increasing) implementation deficits in the area, there is much to indicate that substantial benefits would be forgone by not having them. Furthermore, the concerted actions have a transnational character that makes them impossible to replace by similar action at the national level.

With respect to tenders, those related to the proper administration of the IEE programme could be dispensed with without the loss of further benefits, if the IEE programme was terminated. Yet, some tenders provide information for policy making and input required by a directive and thus have effects beyond the IEE programme.

In the sections below further analysis and evaluation of the specific environmental, social and economic benefits that are forgone in the no continuation option is presented.

Marginal environmental impacts lost in case of no continuation

In the survey of promotion and dissemination projects, project partners have been asked to provide the size of their agreed impact targets (if any) for the projects they coordinate. These targets have been indicated in a number of different units (CO_2, EUR, toe, MWh etc.) Where possible, the targets have been converted to tonnes of CO_2 equivalents per year. Hence, if targets have only been set for energy-savings and renewable energy production capacity this has been calculated into CO_2 equivalents.

Table 19 provides an overview of the average impact targets for the selection of promotion and dissemination projects that actually employ targets that can be expressed in terms of tonnes of CO_2 equivalents avoided per year (most of the 36 projects) or other targets (in a few cases) which we – by conversion factors and approximation to similar experiences –have transformed into CO_2 equivalents. In total, impact targets have been converted to tonnes of CO_2 equivalents per year for 36 projects, which corresponds to about 20 percent of all projects between 2008 and 2010. The deadline for reaching the targets is 2020, which means that the targets are rather long term.

It is important to note, that according to

Table **13** in Chapter 8, there should be at least 50-60 projects which have set targets in terms of CO2 equivalents. This is more than the 36 projects where the project managers provided information on the actual size of the CO2 targets for the survey. However, since there is no systematic tracking of the targets in the project management database, we did not have information on the CO2 targets in the remaining projects that could be used as part of the analysis.

Table 19: Formulated impact targets across fields of action, P&D projects

	Target estimated	Percentage of projects	Average target (t CO_2 eq p.a. per project)
SAVE	7	19%	84.956
ALTENER	10	18%	100.037
STEER	8	35%	25.258
INTEGRATED	11	17%	148.815
Total	**36**	**20%**	**95.391**

Table 20: Formulated impact targets across priority areas, P&D projects

	Target estimated	Percentage of projects	Average target (t CO_2 eq p.a. per project)
Facilitating policy implementation	7	15%	55.327
Creating favourable market conditions	6	17%	55.278
Preparing the grounds for new investments	3	30%	46.979
Awareness raising	7	14%	43.091
Building capacities and skills	13	34%	174.812
Total	**36**	**20%**	**95.391**

The average impact target per project is 95 Ttonnes of CO_2 equivalents per year. This means, that the average project produces annual future reductions equivalent to nearly 0,1 Mtonnes of CO_2. In addition to these targets, many projects have formulated other kinds of impact targets which are not included in the tables above, and these should also be taken into consideration when assessing the total impacts of the programme.

Table 21: Estimated expected realisation of impact targets across fields of action, P&D projects

	Realisation estimated	Average impact realisation	t CO_2 eq p.a. / tEUR
SAVE	5	82%	59
ALTENER	9	77%	54
STEER	7	66%	11
INTEGRATED	11	84%	124
Total	**32**	**80%**	**60**

Table 22: Estimated expected realisation of impact targets across priority areas, P&D projects

	Realisation estimated	Average impact realisation	t CO_2 eq p.a. / tEUR
Facilitating policy implementation	7	84%	50
Creating favourable market conditions	5	75%	25
Preparing the grounds for new investments	2	125%	26
Awareness raising	7	49%	15
Building capacities	11	83%	122

Total	**32**	**80%**	**60**

Table 21 and Table 22 show the project partner's expectations of impact target realisation based on the 32 projects for which an expected realisation rate has been stated in addition to the target. The tables show, that on average, the project partners/coordinators expect an impact target realisation of around 80 percent. These figures have been used for calculating the actual expected impacts relative to the project budget. The average expected impact is 60 tonnes of CO_2 equivalents per year for each 1.000 EUR. This means, that for each 1.000 EUR of project funding, annual reductions equivalent to 60 tonnes of CO_2 per year is expected to be realised. In a 30-year perspective, this means 1,8 tonnes of CO_2 reductions per euro invested in initial lump-sum funding.

These estimated target realisation have been extrapolated to the entire project population. This has been done using the following approach:

1. Each projects expected target realisation per tEUR has been set to the average t CO2 eq p.a. / tEUR of the projects with the same priority area; for example, awareness raising projects will be assigned an expected target realisation of 15 t CO2 eq p.a. / TEUR

2. The expected target realisation per tEUR is multiplied by the project budget measured in TEUR to obtain the absolute target realisation

3. Expected target realisations of all projects are added to get the expected impact of all projects

The approach outlined above gives the results presented in the table below.

Table 23: Extrapolated expected impact, P&D projects

Total expected impact	**12 million t CO_2 eq p.a.**
Total expected impact relative to budget	**50 t CO_2 eq p.a. / tEUR**

These results are based on several assumptions:

1. The impact targets quantities provided by the survey respondents correspond to the actual targets for their respective projects

2. The degrees of target realisation expected by the project managers are realistic

3. Projects where impact target and realisation is available is representative for the entire project population

There is no apparent reason to believe that the impact targets are inaccurate. However, there may be an optimism bias in the estimated degree of realisation by the project partners/coordinators. On the other hand, there may also be spill-over effects from dissemination and replication which the managers cannot foresee and hence it cannot be rules out that in some case the target realisation is underestimated. Finally the projects for which targets and realisation rates have been stated may not necessarily be representative of the entire population.

Similar targets are defined more systematically and agreed to in the project descriptions underlying the contracts of ELENA projects. These targets are shown in Table 24

Table 24: Formulated impact targets across fields of action type, ELENA market replication projects

Beneficiary	Project Name	Total Investment (EUR)	Leverage Factor	Energy savings p.a. (GWh)	CO2 avoided p.a (tonnes)	Renewable heat production p.a. (Gwh)	Renewable electricity production p.a. (Gwh)	t. CO2 avoided p.a. per 1000 EUR ELENA-inv.	MW energy saved per 1000 EUR ELENA-inv.	Cost-eff. of annualised investment (EUR/ t.CO2)
Prov. of Barcelona	REDIBA	500.000.000	250	280	185.000	0	114	93	140	-13
Prov. of Milan	Energy efficiency - Covenant of Mayors	90.000.000	46	27	9.000	0	1	5	14	206
Stadtsverwarming of Purmerend	CHP/District heating	98.000.000	55	50	70.000	264	23	39	28	0
City of Paris	Efficacité énergétique écoles Paris	180.000.000	131	33	6.500	0	0	5	24	913
Fundación Movilidad Madrid	MOVELE	53.400.000	47	4	1.800	0	0	2	4	1.282
Vila Nova de Gaia	Vila Nova de Gaia Sustainable programme	73.400.000	80	35	12.100	4	1	13	37	24
City of Malmö	SPIS: Rail & tram intercity project	170.500.000	57	82	25.000	0	0	8	28	19
DAFNI	Development of smart-grid infrastructure in autonomous island grids of the Aegean Sea	52.820.000	77	42	18.770	0	21	27	61	-80
Greater London Authority	RE:FIT	114.950.000	40	0	99.200	0	0	34	0	59
Transports Metropolitans de Barcelona	Electrobus: Energy efficient bus network for Barcelona	163.880.000	85	61	16.400	0	0	9	32	135
Greater London Authority	Decentralised Energy	113.700.000	39	275	74.700	0	0	26	95	-290
Total		**1.610.650.000**		**889**	**518.470**	**268**	**160**			
Average			**78**					**25**	**43**	**-13**

Besides from the CO_2 equivalents avoided per year for each 1.000 EUR of ELENA funding, it has also been possible to calculate the more general cost effectiveness measured in EUR per t. CO_2 equivalents avoided where the leveraged large-scale direct investments to be accomplished by the local governments are added to the cost of ELENA funding of project developments.

The resulting cost-effectiveness figures, which lie in the range between ÷290 and 1.282 EUR per t. CO_2 equivalents avoided, indicate that some ELENA projects provide both an environmental benefit in terms of CO2 reductions while the expected energy savings also makes them profitable from an economic perspective. On the other hand, other ELENA projects are relatively expensive compared to, for example, the price of CO_2 credits on the market. However, this should be seen against the very high absolute potential they offer, plus their numerous other environmental benefits than CO_2 (reduced air pollution in cities, etc.) and their potential for stimulating local growth and security of supply.

Calculations of the cost-effectiveness of annualised ELENA project investment are based on the following assumptions:

1. The average lifetime of the ELENA investments (equipment, construction, infrastructure etc.) is assumed to be 30 years

2. An annual 3 per cent discount rate have been employed for the costs and benefits arising from those investments in the future

3. The average price of saved energy is, as a very general average ranging over electricity and other energy forms throughout a 30-year period, assumed be around 0,1 EUR/KWh in current prices.

In total, the 11 covered projects with an aggregated ELENA budget of 20,6 mEUR account for reductions of 518.000 t CO_2 p.a. corresponding to 24 t CO_2 p.a. / tEUR IEE funding.

When comparing the measure t. of CO_2 equivalents avoided per year for each tEUR of IEE funding, it appears from Table 19 and Table 24 that you may get more CO_2 reduction out of the invested funding in P&D projects compared to the ELENA projects. However such a conclusion will be difficult to make as it depends on the following factors:

- Whether the indicative CO2 targets in P&D projects and their expected degrees of realisation are in fact realistic. One can be much more certain of this in the ELENA projects where concrete technology investments to reach the targets are planned and outlined in the project descriptions attached to the contracts.

- Whether the additionality, i.e the number and share of projects that would not have been realised without the funding, is higher in P&D projects than in ELENA projects. While this appears to be a plausible assumption, the degree of difference certainly matters.

- Finally it depends on the assumption that ELENA projects have no spill-over/dissemination effects besides the realisation of the concrete investments plans. Probably they have some and therefore their CO_2 cost-effectivess could be higher.

In any case, the figures indicate that for both P&D projects and ELENA projects significant CO_2 reductions and energy-savings will be forgone if the programme is not continued.

Provided that the 12 million t. CO_2 equivalents per year is a reasonable estimate of the total savings achieved, it is possible to put a monetary value on the environmental loss of not continuing the programme. A price of 20 EUR/t. CO_2 which approximate an average price of CO_2 credits on the market will be used to define the minimum price of the achieved CO_2 emission reductions. While valuation studies indicate that the marginal damage of CO_2 emissions is much higher than the 20 EUR/t. and that it will be increasing over time, the market price of CO_2 credits provides a good reflection of opportunity costs, i.e. the costs of achieving the same reduction by other measures than the through IEE projects. Using a price of 20 EUR/t. CO_2 gives rise to an annual loss of 240 mEUR by not continuing the programme.

Although it can be argued that some of the 12 million t. CO_2 reductions would have been achieved even without the IEE programme, it needs to be balanced against the facts that (a) many IEE initiatives also provide other environmental benefits than CO_2 reductions, for example reduction of air pollution such as SO_2, NOx, and particles., which also have a high value, and (b) that the price of CO_2 credits on the market probably will be increasing over time. Hence, on balance, a loss of 240 mEUR per year does not appear to be unrealistic.

Marginal economic impacts lost in case of no continuation

There are less quantified estimates for the economic impacts, and these are therefore harder to assess. The main economic impacts of the current IEE programme are that the projects stimulate energy-savings, investments in innovative energy solutions and security of supply. To the extent such impacts are realised they will, in turn, contribute positively to economic growth in Europe including employment and economic welfare. However, the grants provided for projects and the

administrative costs of the programme will have a tax distortion effect[82] that, to a greater or lesser extent, will reduce the positive impacts on economic growth.

As mentioned earlier, EU funding of the programme is relative small compared to other EU funding schemes in the area and the tax distortion effect is therefore expected to be rather moderate in absolute measures. However, it is impossible to conclude on the balance between the positive growth stimulation effect and the adverse tax distortion effect as the former is not possible to quantify. This is mainly because there are no recorded experiences on the multiplier effects from investments in such innovative energy technology solutions which can be generalised to the IEE programme. Moreover, we are not aware of any promotion and dissemination projects where the effects of project activities and the resulting investments on economic growth have been measured.

The impact scores relating the investment effects and growth effects provided by the project partners/coordinators and project officers, however, provide some insight into the economic impact of promotion and dissemination activities, cf. Table 25 below which compares the environmental and economic impact scores.

Table 25: Impact across priority areas, added scores by project partners/officers

	Environmental	Economic
Facilitating policy implementation	4,2	4,1
Creating favourable market conditions	3,9	3,9
Preparing the grounds for new investments	3,9	4,2
Awareness raising	3,7	3,5
Building capacities and skills	3,8	3,8
Total	**3,9**	**3,9**

According to the assessments made by respondents in the survey, the economic and environmental impacts are of equal importance. There are some small variations across different priority areas, fields of action and key actions (where especially the renewable energy projects come out with higher scores with respects to investment and growth effects), but the general pattern is the same.

Provided that the respondents has a reasonably accurate perception of the future impacts of the projects for which they are responsible, this indicates that the economic impacts could have a magnitude and value similar to the environmental impacts. However, as the economic impacts are clearly more difficult to understand and measure, it may also be the case that the magnitude is not very accurately perceived in the subjective assessments by project partners and officers. Hence, there is more uncertainty with respect to the impacts on economic growth than with respect to the environmental impact.

Yet, both cases studies (including those presented in the newsletters, project data base and other information materials from the EACI) and the interviews we carried out with the EC institutions

[82] Public costs financed through a tax on labour will have a distortion effect since it creates a tax wedge between the supply and demand for labour.

and NPCs indicate that promotion and dissemination projects sometimes stimulate economic growth in certain areas to an extent that more than outweighs the limited resources invested.

Accordingly, there is much to indicate that skipping the core promotion and dissemination part of IEE programme (as in policy option 1) would have a negative marginal impact on growth compared to continuing the programme instrument in its current form (as in policy option 2).

When considering not continuing the ELENA programme, the foregone future investments in new energy technologies, systems and solutions constitute the immediate economic impact. The scope of this investment impact is easy to quantify du the officially agreed investment commitments for each project as part of the signed ELENA contracts. For the currently signed projects and projects that that have been approved the total investment commitment is 1,6 bnEUR whereas the figure including all projects currently in the pipeline is 3,7 bnEUR. These investments will have to be carried out within the coming years and hence contribute to economic growth. As in the case of promotion and dissemination projects it is not possible to calculate the multiplier effect of such investments on economic growth.

It appears reasonable to assume that if the ELENA programme component is continued in its current form (including the new budget for KfW-ELENA projects and CEB-ELENA projects), it should be possible to realise future investment commitments in the magnitude of 2-3 bnEUR each year. However, the question is whether these investments would have been implemented regardless of the funding of ELENA project development services. According the answers provided by project managers (cf. Figure 18 in Chapter 8), none of the ELENA projects that have been started up so far would have had a budget and investment commitments that are as high as they currently are, and as quickly deployed with a programmatic approach, if the ELENA project development services and associated funding had not been provided. One of the five projects for which information have been provided would not have been realised at all. The conclusion is therefore that the forgone investments are less than the 2-3 bnEUR per year, but more likely in the range of 0,75-1,5 bnEUR. Moreover, the part of total investments which would have been realised even without ELENA would nevertheless have been delayed.

Hence, while ELENA project development services are not critical to all of the investments, they have a considerable investment leverage effect which is both direct and measurable. Taking into account an average leverage factor of about 80 for the projects approved so far, and the assumption that, on average, budgets for the entire investment programme in ELENA projects is raised 33-50 per cent because the instrument exists, each EURO spent on ELENA projects through the IEE programme could lead to an investment effect as high as 20-40 EURO. Therefore, the no continuation option clearly entails smaller investments and presumably also less growth and job creation compared to the current programme.

It is not possible to conclude on the economic impacts of concerted actions and tenders, but generally they help to facilitate policy implementation in the sustainable energy area which is also supposed to have indirect impact on economic growth.

Marginal social impacts lost in case of no continuation

The social impacts mainly concern raising social awareness of rational use of energy and enhancing social capital and capacity building among stakeholders in the area. This may again have positive indirect environmental and economic impacts which will be difficult to measure. In any case,

the social impacts will be important preconditions for contributing to long-term sustainable energy consumption and innovation.

While the social impacts are clearly the most intangible impacts and the ones which are most difficult to quantity, there are several reasons to assume that promotion and dissemination projects, especially within the priority areas of capacity building, awareness-raising and facilitating policy implementation, are particularly suited to generate positive social impacts which will contribute to sustainable energy behaviour in the long run. That assumption seems to be confirmed by the survey results which show that the social impacts of the projects are rated even higher than the more immediate environmental impacts and that capacity building and policy enabling projects yield slightly higher social impacts than projects within the other areas, cf. Table 26.

Table 26: Impact across priority areas, added scores by project partners/officers

	Environmental	Social
Facilitating policy implementation	4,2	4,2
Creating favourable market conditions	3,9	4,1
Preparing the grounds for new investments	3,9	3,9
Awareness raising	3,7	4,0
Building capacities and skills	3,8	4,3
Total	**3,9**	**4,1**

The results indicate that besides the environmental and economic impacts of the no continuation option which to some extent can be quantified, but only partly valued in monetary terms, the project partners/coordinators and officers expect that there will be additional social impacts of a rather high magnitude that may be translated into social wellbeing and further environmental improvements and growth in the long term.

Considerations on necessity and subsidiarity

Apart from the concrete assessments of the impacts, the value of the programme has also been touched upon in a more qualitative way. Below is an overview of the NCP's opinions on the IEE programme and the need for a successor to IEE II.

Figure 26: Opinion on the value of the IEE programme, NCP's

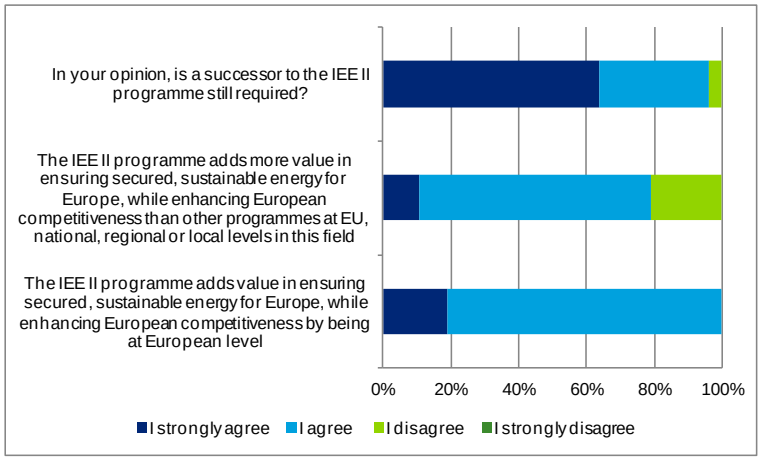
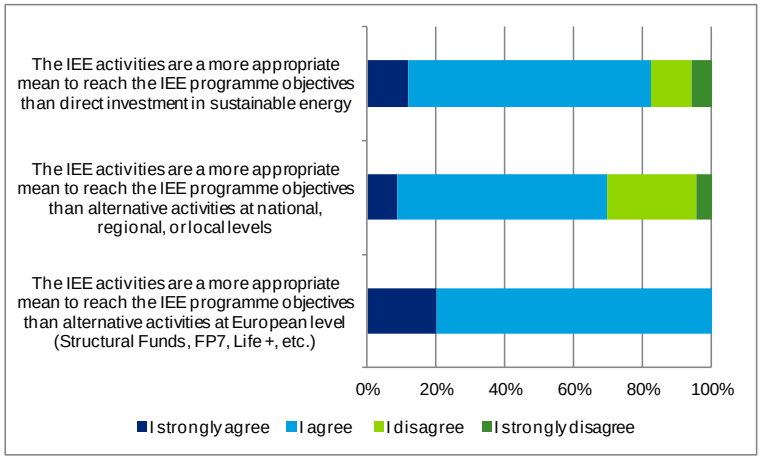


Figure 26 shows that the NCP's agree, that there is a need for a successor to the IEE II programme. All NCP's agree that the IEE II programme adds value in ensuring secured, sustainable energy for Europe, while enhancing European competitiveness than other programmes at EU, national, regional or local levels in this field. Moreover, the programme is perceived by 80 percent to add more value than other programmes in the field.

The figure below shows the answers to questions regarding the appropriateness of IEE activities to meet the programme objectives.

Figure 27: Opinions on the appropriateness of the IEE activities to meet the objectives



A majority of the NCPs believe that the IEE activities are more appropriate than all proposed alternatives. They all think, that the activities are the most appropriate compared to other activities at a European level, while some think that direct investment and local/regional activities are more appropriate.

The opinions illustrated in the two figures above clearly indicate, that NCP's find the programme valuable and the activities appropriate to meet the programme objectives. Consequently, the far majority agree, that there is a need for a successor to the programme and hence that this option is strongly preferred to no continuation.

Lost synergies in case of no continuation

Stopping the IEE programme by not funding a potential successor would lead to a gap being created in the ecosystem of EU initiatives in the field of sustainable energy development given the absence of a dedicated programme addressing non-technological barriers.

The interactions and synergies of the existing programme with other EU-funded initiatives would naturally also disappear after the time lag of completion of the IEE II projects, potentially leading to a loss of know-how and expertise in sustainable energy development at EU level.

9.1.2 Marginal benefits – cost savings from no continuation

The budgetary implications of the no continuation option will naturally be a reduction corresponding to the entire IEE programme budget.

Saved cost of grants

The non-continuation of the IEE programme would naturally eliminate the grants for the IEE programme which are up to about 100 mEUR per year.

Saved administration costs

The non-continuation of the IEE programme would naturally eliminate the administration costs for the programme. This could only be done progressively as of 2014 as the ongoing projects from the last calls of IEE II could last until 2016 and would need to be managed, albeit with a potentially reduced management structure. The budget for administrative cost lies within the range of 7-8 mEUR per year. In addition to this, the tenders and "other projects" also cover certain administration costs for hiring service providers that assist with respect to the administration of the programme.

The programme also entails administration costs for the applicants and beneficiaries, both in applying for and managing the projects, notably the promotion and dissemination projects. It has not been possible to account for the level of these costs but they could be substantial and overall higher than the Commission's programme administration costs.

The non-funding of a potential successor to IEE II would potentially also imply a significant downsizing of the EACI, and would raise the question of how to fund and manage tenders necessary to the EU sustainable energy policy-making activities of the EC.

9.2 Policy option 3: Capacity building oriented programme

Compared to the status quo (continuation of the current programme) this policy option implies that even more focus and budget and broader coverage is dedicated to the traditional IEE priority areas, that is, awareness raising, building capacities and skills and facilitating policy implementation, especially through increased use of promotion and dissemination projects, tenders and concerted actions within these priority areas.

For promotion and dissemination projects, there has already been much focus on awareness raising and capacity building within the IEE I and IEE II programme. There has also been focus on supporting promotion and dissemination projects oriented towards facilitating policy implementation, especially around the time when the establishment of energy agencies was a prioritised key action which is no longer the case[83]. Hence, for promotion and dissemination projects, the major difference between the current programme and the capacity building oriented programme is that, in the latter policy option, increased focus and budget is allocated to projects that facilitate policy implementation so as to better cover this priority area. It would at least imply that the budget of new projects within the policy implementation area is brought up to the recent budget level of projects within awareness raising and building capacities and skills, that is, nearly a doubling of budgets within the former area compared to the 2010 level which was down to12 mEUR, cf. Table 27.

[83] Policy implementation include both national and local level activities. Local energy agencies contribute at local level but many other projects, especially those in the RES electricicty area also address policy implementation at EU and national levels.

With respect to tenders, the major difference between the current programme and the capacity building oriented programme is that tenders will be used increasingly to contribute to awareness raising and capacity building. At the same time, tenders will still be used to facilitate policy implementation to the same extent as under the current programme, implying that the overall budget for tenders will be increased.

Table 27: Allocated budget (mEUR) for P&D projects that started up in 2008, 2009 and 2010

	2008	2009	2010	Total
Facilitating policy implementation	21	14	12	47
Creating favourable market conditions	14	16	21	50
Preparing the grounds for new investments	5	4	4	14
Awareness raising	26	17	22	64
Building capacities and skills	18	13	23	54
Total	**84**	**64**	**82**	**230**

The capacity building oriented programme moreover implies that the focus/budget on concerted action, which deals exclusively with the priority area of facilitating policy implementation, will be increased. Since more focus and budget is also allocated to this priority area in the case of promotion and dissemination projects, it will be the area which is most significantly promoted under capacity building oriented programme.

The market replication programme instruments is officially represented by the ELENA project development services, although market replication projects may also be found in the P&D priority area of preparing the grounds for new investments. Both of these areas and P&D priority area of creating favourable market conditions remain unchanged with respect to focus/budget/coverage in the capacity building oriented programme. That implies almost no focus/budget to P&D projects that prepare the grounds for new investments since in the capacity building oriented programme the current low level of activity and a budget of merely 4 mEUR will be continued.

9.2.1 Marginal costs – budgetary implications by changing to a more capacity-building oriented programme

Since there are no building blocks where the focus/budget/coverage is decreased, but four building blocks where it is increased, the capacity building oriented programme entails a higher budget than the status quo.

Increased costs of grants

The budget increase relating to project grants could, for example, be in the magnitude of 20 mEUR including 10 mEUR extra for promotion and dissemination projects (based on the consideration to bring policy implementation projects up to level of awareness raising and capacity building projects) plus 10 mEUR extra for tenders and concerted action. Today, tenders and concerted action has a total budget of 15 mEUR. One could, of course, also imagine a greater up-scaling of the budget for the capacity building oriented programme as it is still low compared to the large EU funding schemes in the area, but the ex-ante/impact analysis below is based on the premise of a future IEE programme which has a budget of similar level compared to the IEEII programme, but which nevertheless is raised by around 20 mEUR to allow for more activities, especially in the

area of facilitating policy implementation, but also with respect to tenders on awareness-raising and building capacities and skills.

Increased administration costs

The available data on the administration cost of different IEE instruments and fields does not allow for a comparison of these costs across activity types or instruments, which would also need to take into account the different nature of the activity types and instruments.

Estimations made seem to indicate that costs for the promotion and dissemination component may be slightly higher at programme level than for the market replication component (possibly due to the fact that promotion and dissemination projects involve consortia of actors from across the EU and are typically not part of larger overall projects, while market replication projects do not necessarily involve consortia and are part of larger overall projects). However, administration costs at project levels seem to be broadly similar.

Given this, it is very difficult to identify any expected effects on the administration costs of the programme of focusing on capacity building activities in a potential successor to IEE II, other than from a very high-level qualitative perspective.

From this perspective, we note that an increased focus on the traditional capacity building oriented priority areas of the IEE programme through promotion and dissemination projects, tenders and concerted actions, and a corresponding limitation of market replication projects mobilizing investments, might achieve greater centralization of programme management possibly leading to greater efficiency, although the proportion of seemingly slightly more costly projects (from a management cost point of view) would probably increase (since, as seen above, programme level management costs for the promotion and dissemination projects may be slightly higher than for the market replication component).

9.2.2 Marginal benefits by changing from the current programme to a more capacity building oriented programme

General marginal benefits from the new efforts in the prioritised areas

Devoting more focus and budget, especially to promotion and dissemination projects and concerted action that facilitate policy implementation, generally appears to have a good pay-off in terms of-marginal benefits if we look at the results from interviews and surveys and the general status of EU policy implementation in the area:

- Policy implementation facilitating projects are ranked slightly higher in terms of overall impact scores by both project managers and officers than projects in any other priority areas
- Together with projects that prepare the grounds for new investments policy implementation facilitating projects are also ranked highest in terms of cost-effectiveness.
- Projects that contribute to the establishment of energy agencies throughout Europe are considered by project partners/coordinators and project officers as one of the most cost-effective key actions so far. It is no longer prioritised, but a number of interview respon-

dents have emphasised that there is still much need for projects linked to energy agencies especially projects that help them in overcoming administrative barriers to the implementation of EU policies in the sustainable energy are

- The overall status of EU policy implementation in the sustainable energy area is considered rather poor, cf. Chapter 4 and 8, which means that more European level initiatives are needed in order to help overcoming the barriers and disseminating best practises for achieving the objectives.

- A study[84] commissioned by the EC on the barriers to the implementation of renewable energy solutions within the EU countries showed that administrative hurdles is actually the main non-technological, non-financial barrier to get the solutions implemented. Addressing such barriers would require more focus on supporting local and central governments in the preparatory administrative work required to identify the relevant administrative barriers and simplify the procedures and rules.

- The concerted action projects which are believed to have been very important and rather successful by most of the interviewed EC institutions and the NCPs appear to be a highly relevant means for organising and carrying through such activities aimed at finding joint approaches to removing the administrative barriers mentioned above.

These concerted actions are a relevant supplement to the open call projects facilitating policy implementation. It allows for not only a bottom-up approach (in the case of P&D projects) where the concrete needs are identified and turned into project proposals by voluntary networks of local administrators but also a top-down approach (in the case of concerted action) where the EC institutions can play a role in identifying the needs an putting the right national administrators together in achieving a certain objectives related to facilitating EU sustainable energy policies.

It therefore appears that increasing the budgets for both P&D projects and concerted action facilitating policy implementation would have a substantial marginal benefits although these cannot be quantified due to the soft intangible nature of the projects and the lack of monitoring and recording of existing impacts from such projects (cf. Section 3.4.1).

Marginal environmental, economic and social impacts

Table 28 shows the added environmental, economic and social impact scores from the surveys among project partners and officers. Environmental impacts constitute the impact area in which the policy implementation facilitating projects are most highly rated compared to projects in the other four priority areas. This supports the argument that the former projects have been especially important in facilitating the implementation of EU energy policies, including directives and regulations, which pave the way for environmental improvements. The environmental impact is very indirect and hard to measure (and to disentangle from other factors and instruments that also contributed), but potentially it could be huge since overcoming of important administrative and other institutional barriers in relation to implementation sustainable energy policies could trigger environ-

[84] Ecorys Research & Consulting, Assessment of non-cost barriers to renewable energy growth in EU Member States – AEON, DG TREN No. TREN/D1/48 – 2008, Final Report

mental improvements far beyond what can be achieved by projects focusing on specific investments.

Table 28: Impact across priority areas (copied from Table 12)

	Frequency	Environmental	Economic	Social	Total
Facilitating policy implementation	34	4,2	4,1	4,2	4,2
Creating favourable market conditions	20	3,9	3,9	4,1	4,0
Preparing the grounds for new investments	10	3,9	4,2	3,9	3,9
Awareness raising	29	3,7	3,5	4,0	3,8
Building capacities and skills	31	3,8	3,8	4,3	4,0
Total	**124**	**3,9**	**3,9**	**4,1**	**4,0**

According to the assessments of the survey respondents, awareness raising and building capacities and skills which are also among the highly prioritised areas in the capacity-building oriented programme have, on average, more modest environmental impacts. Yet, it should be recalled that the focus/budget of these priority areas remain unchanged in the P&D programme whereas it is increased considerably in the tender programme. Based on the limited evidence from the interviews and surveys, an increase in the budget for tenders would not appear to generate significant marginal benefits. On the contrary, several recommend that the budget of tenders should be reduced and that more focus should be devoted to the other instruments.

However, tenders could play an important role in filling out gaps in the open call applications. The EACI has now, after several years of experience, considerable insight into the state of affairs with respect to the level of awareness and institutional capacities for sustainable energy in different sectors within the EU countries. On that basis, the EACI could give task specifications for tendered projects in sectors where such projects would satisfy urgent needs for awareness raising and capacity-building and in that case the projects would not be subject to the decreasing marginal impacts of awareness-raising projects claimed during the interviews. Tenders that promote awareness arising could therefore have important environmental and social impacts beyond the similar open call projects where the kind of proposals submitted is more arbitrary, although promotion of opportunities to particpate in the programme is done cost effectively by the NCPs and by collaborations between IEE and the Enterprise Europe Network.

Moreover, tenders may be used in another purpose to request projects and services that has the purpose of raising awareness of the open calls for IEE projects among potential applicants. Projects that raise the awareness of the dedicated structural/regional funds for energy investments and their possible links with the IEE programme may also be considered for tendering as there is still rather limited knowledge of the opportunities among the relevant stakeholders throughout the European member states. Hence, changing the focus of tenders more in the direction of funding awareness-raising campaigns with respect to opportunities related to the IEE programme may help to attract more qualified project applications with high potentials, and thus improve conditions for the future performance of the IEE programme.

While a capacity-building oriented programme is expected to have very positive (but hard to measure) social impacts, it will probably not to the same extent give rise to important marginal economic impacts. Table 28, for example, indicates that awareness projects are expected to have the lowest economic impacts of all the priority areas. This is despite the fact that such projects may

contribute to raise the awareness of the economic potentials of various energy-saving technologies. It provides another indication that, at least among the EU 12 countries, such knowledge is now more widely available than some years back, partly due to the successfulness of prior EU and national campaigns, hence reducing the marginal impacts of further awareness raising projects.

Marginal impact on synergies

Focusing the programme on tackling the administrative and capacity-related barriers to the development of sustainable energy could ensure a greater scale of activity in these areas, perhaps allowing for a critical mass to be able to address such issues. Increased synergies could be sought out between the projects under different IEE instruments, e.g. between promotion and dissemination projects, tenders, and concerted actions where relevant, but also with the other processes in place at EU level, e.g. for the follow-up of the national RES and EE action plans.

Besides this, particular attention would need to be paid to increasing the synergies of the capacity building (promotion and dissemination, tender and concerted action) projects with the SF/CF (e.g. via INTERREG) as a key stakeholder in leveraging such extra capacity to mobilise financing for sustainable energy. Moreover, the capacity building should further include the financial community (IFIs, national development banks, etc.) as these are also an important channel for mobilising financing.

Under this option, IEE efforts in mobilising sustainable energy investments directly would be somewhat limited proportionally, e.g. by limiting the technical assistance through ELENA or MLEI (which could then for instance be taken as a separate stand-alone initiative or integrated with other EU facilities in the field such as the EEE-F). This would mean that greater synergies should be sought out between the promotion and dissemination projects in this area and the market replication activities carried out both under IEE and in other EU initiatives so as to avoid a loss of competencies and continued stimulus for such growing initiatives.

9.3 Policy option 4: Investment oriented programme

Compared to the status quo (continuation of the current programme) the investment oriented programme implies a development in the opposite direction of the capacity-building oriented programme. The investment oriented programme is focusing the majority of the resources in the priority areas of creating more favourable market conditions and preparing the grounds for new investments, while keeping projects facilitating policy implementation as the current level, and reducing promotion and dissemination projects in the priority areas of awareness raising and building capacities and skills.

Hence for promotion and dissemination projects, there will be a substantial restructuring of priorities since focus and resources are reallocated in such a way that there will be less projects on awareness raising and capacity building and more projects related to creating more favourable market conditions and preparing the grounds for new investments. The change will be especially radical in the case of projects preparing the grounds for new investments which so far have been few in number and at a low budget of merely 4 -5 mEUR per year for new projects that started in the years 2008-2010 which is 3-6 times as low as for the other priority areas, cf. Table 27 above.

In practise, this means that more funds will be available, and more encouragement will be given, for projects which set specific targets for realising certain types of investments in innovative energy solutions and which moreover have concrete plans for organising project activities in such a way that those targets are likely to be achieved. It would also be obvious to consider introducing some kind of funding conditionality similar to the conditions applied in the case of ELENA projects, that is, rules requiring that some or all of the funding must be paid back in case a certain amount of the targeted investments are not realised. Other types of conditions could also be assessed, for example requiring project partners to make investigations and prepare applications for direct energy investment grants such as the structural funds for energy investments; the EEPR, TEN-E or EEE-F funds; or low-interest loans from IFIs.

The additional P&D projects that could be promoted within the priority area of preparing the grounds for new investments would probably in many cases fall under the definition market replication projects. Hence, in order to add sufficient value, and to ensure the overcoming of information and institutional barriers, the P&D projects that prepare the grounds for new investments should definitely be focused on generating replicable experiences with investments in innovative energy technologies and on organising the subsequent dissemination of these experiences in a broader arena. There is currently not an official market replication component within the part of the programme managed by EACI although the MLEI key action under the promotion and dissemination component corresponds more or less exactly to the activities of the market replication ELENA facilities. A more investment oriented programme would, however, require that EACI takes an explicit approach to market replication that can be used in formulating a growth strategy for projects that prepare the ground for new investments.

The other main category which would be prioritised under an investment oriented programme is projects that create more favourable market conditions on the supply side for sustainable energy solutions. It implies that priority will be given to projects which contribute to improving the competitiveness of European energy efficiency (EE) and renewable energy (RE) industries, especially SMEs. As far as possible, projects should help to move EE and/or RE technologies, systems and fuels into mainstream market structures and supply chains. This priority area has already been allocated more funding in recent years as shown by Table 27 above.

However, considering the fact that this is the only priority area within the IEE programme that explicitly focuses on improving conditions on supply side (cf. Figure 28), there might be a need that even more focus/budget is allocated to this area. Awareness raising, capacity building and preparing the grounds for new investments all focus on the demand side, and facilitating policy implementation focus on both the demand side and supply side and on the legislation surrounding all phases throughout the innovation life cycle.

Moreover, there will also be increased focus and budget for ELENA project development services co-manageed by various IFIs and which can be characterised as projects that prepare the ground for new investments. Other kinds of funding or conditionality rules and principles that bridge the gap between project development and financing of the subsequent investments may also be considered in a more investment oriented programme. For example, the majority (4 out of 5) of the project managers think that providing grants across the entire energy investment programme would be an appropriate extension of the ELENA programme although this is clearly not the programme's intention today.

Figure 28: The position of IEE priority areas in the context of the innovation life cycle

On the other hand, there are also some areas in which priority is decreased when changing from the current programme to an investment oriented programme. The building blocks which will have somewhat less focus and budget are awareness raising and capacity building projects within the P&D programme instrument.

The overall implication is that compared to both the capacity building oriented programme and current programme the investment oriented programme implies a shift in the direction of more downstream focus in the technology cycle and a somewhat more balanced focus between the supply side and demand side, cf. Figure 28.

9.3.1 Marginal costs – budgetary implications by changing to a more investment oriented programme

The investment oriented programme is not supposed to be a large scale investment grant programme. That would require budget of an entirely different magnitude than the current IEE programme. Yet, by changing focus more towards creating favourable market conditions on the supply side on the one hand, and preparing the grounds for new investments through projects with strong focus on market replication, on the other hand, it might be possible to leverage significant additional energy investments without raising the budget to an unacceptable level.

Moving more in the direction of stimulating investments (and perhaps making parts of the funding conditional upon achieving the targeted investments) could require substantially higher funding than merely financing project development and capacity-building activities but would realistically require somewhat higher budget in the context of IEE which would not take on activities such as direct loans or guarantees, but rather further develop project development and promotion and dissemination activities linked to stimulating investment.

Increased costs of grants

The expectation is therefore that, realistically, the investment oriented programme will imply higher grants than experienced so far and also higher grants than under the capacity-building oriented programme although, in principle, it is possible to choose any level of funding between the current level and the highest possible budget top-up. In analysis below it is assumed that the total grants will be increased by a net amount of 40 mEUR.

Assuming that, in the future, awareness raising and capacity building P&D projects are reduced to approximately half of their current size, this would free around 20mEUR. This leaves an extra 60 mEUR (up to the net increase of 40 mEUR) to be distributed between the prioritised building blocks. It is assumed that an extra 40 mEUR is allocated to P&D projects within the priority areas of creating more favorable market conditions (20 mEUR extra) and preparing the grounds for new investments (also 20 mEUR extra). ELENA projects preparing the grounds for new investments would also be left with 20 mEUR extra (thus bringing the total ELENA budget for grants up to 50 mEUR).

Increased administration costs

As explained above, we can only assess the expected effects on the management cost of the programme of focussing on investment mobilising activities in a potential successor to IEE II from a very high-level qualitative perspective.

An increase in the proportion of market replication (technical assistance) projects might bring a slight decrease in administration costs at programme level (as these projects seem to be proportionally slightly less costly at this level) but turning the programme more strongly towards mobilising investments in sustainable energy would require further integration in the management of the different programme components (e.g. between ELENA and MLEI) to achieve a greater efficiency in the cost of managing these as it would create more of a balance between the various parties managing the different components, possibly increasing coordination costs. Different options might be assessed in terms of this integration, and should aim for maximum alignment and sharing of knowledge while leveraging the specific expertise of the different resources involved in the management of the various IEE components.

9.3.2 Marginal benefits by changing from the current programme to a more investment oriented programme

General marginal benefits from the new efforts in the prioritised areas

Generally increasing the budget and using it to devote more focus and ensure better coverage of projects that create more favourable market conditions and prepare the ground for new investments along the lines suggested above within both the promotion and dissemination and the market replication part could give rise to substantial marginal benefits that would make the investments worthwhile.

As mentioned above projects that prepare the grounds for new investments have so far been given little focus and budget within the P&D programme instrument. The question of whether there are increasing marginal benefits by increasing the amount and budget of such projects tends to be confirmed by Table 29. The table shows, that according to the survey respondents, , social and eco-

nomic impacts have been raised substantially since the first projects in 2008 to the more recent projects in 2010 which are generally ranked higher than projects in other priority areas. This strengthens the argument that more focus and funding should be allocated to this area.

Table 29: Total impact across priority areas and start year, added scores project partners/officers

	2008	2009	2010
Facilitating policy implementation	4,2	4,3	4,0
Creating favourable market conditions	4,0	3,9	4,0
Preparing the grounds for new investments	3,6	4,0	4,4
Awareness raising	3,7	3,6	4,0
Building capacities and skills	4,1	3,8	4,0
Total	**4,0**	**3,9**	**4,0**

Other arguments from the stakeholder interviews, surveys, and our analysis of the general situation also support that there would be increasing marginal benefits in allocating more focus and budget to P&D projects that prepare the grounds for new investments:

- There is a potential for carrying out currently unexploited market replication projects within the setting of promotion and dissemination projects administrated by the EACI which will in part be taken up by the MLEI key action but can go beyond this. If projects that prepare the grounds for new investment are structured according to a market replication approach, very high and measurable marginal benefits may be realised- However, this approach remains to be piloted by the EACI and should continue to be done on the basis of market replication projects.

- The experiences within the ELENA area confirm that high and measurable environmental and economic impacts will be achievable by project development services help realising subsequent investments in innovative energy technologies and energy systems. This is achieved by overcoming transaction costs in creating the basic project infrastructure and by giving rise to firm quantified commitments for the scope of investments.

- The scope of and budget of the ELENA project development services have recently been increased through the KfW-ELENA and the CEB-ELENA which are very well suited to address some problems and gaps in the existing ELENA activities and which will raise the chances of successfully initiating and completing medium-scale energy investment projects in European cities. However, the current budget level of 8 mEUR for these new initiatives appears relatively low in view of the amplified opportunities they create. There is therefore good reason to assume that more budget for such activities will give rise to increasing marginal benefits for the programme as a whole.

The remaining challenge with the ELENA projects is whether it will be possible to arouse sufficient interest among local and city governments for applying, especially for the large-scale investment project development services administrated by the EIB. The experience so far show a rather slow uptake of approved and signed projects which might indicate that increased funding for only the project development part of such local government initiatives will not give rise to increasing marginal benefits in terms of actual, leveraged high-quality investments. ELENA may need to define its niche in terms of the type of underlying investments to be co-funded in order to be most effective in the future.

Beyond the increasing pipeline of ELENA projects, the experience and survey results clearly indicate that it should be considered to spend some of the extra budget to stimulate large-scale investments. With a moderate budget increase this could for example be achieved through additional funding of the financial due diligence process of such investments which could serve as the basis for providing guarantees for low-interest loans through the EIB (or other European banks) provided that the financial due diligence has a positive outcome, and it turns out not to be possible to obtain the necessary financial resources through local funds and banks and other EU schemes that contribute to the funding of direct energy investments.

The loans in themselves should not to be funded by IEE, but it would be necessary to carefully coordinate the link to the banks at the EU level. Provided that such better guarantees for the subsequent investments could be guaranteed through ELENA, there is a good chance that it will increase the application rate for large-scale investment projects with beneficial effects that would not have been realised without ELENA.

Another way to overcome the gap between project development services and investments they seek to stimulate would be to expand the ELENA programme to also provide for investment grants across the entire energy investment programme of ELENA projects (as is for example the case with the new EEE-F scheme administrated by Deutsche Bank). That would however require substantial more funding than the extra 20 mEUR and overlaps with other programmes would need to be considered. To conclude on the marginal benefits of such more far-reaching initiatives is beyond the scope of the present evaluation.

The other priority area that will be promoted in an investment oriented programme is P&D projects that create more favourable market conditions. Such projects will be focused on identifying and selecting innovative energy technologies with high potentials that have already been developed and helping them in going to and penetrating the market. There is reason to expect that more focus on such projects would entail increasing marginal benefits:

- During the surveys and interviews, a number of respondents have suggested that the strong focus of P&D projects on the demand-side is not paralleled by a sufficient programme focus on the supply-side. This was also pointed out in the mid-term evaluation of the IEE programme. Although there has indeed been increasing focus on the supply side within the P&D programme instrument in recent years, especially in the ALTENER field of action, a number of representatives from other EC institutions takes the view that more could be done within the IEE programme to support supply side initiatives.

- The gap on the supply-side is related to the fact that new innovative energy solutions, which have arrived successfully through R&D&T phases and which have even demonstrated their potentials in full scale pilot projects, often experience major difficulties in going to the market and being commercialised. According to DG RTD, this gap is not addressed very well by the research funds under FP7, and if it is not addressed very much by the IEE funds either, it is left to the innovators themselves or the companies that supports them.

- Several interview respondents point out that there is particular need for more market surveillance projects that identify, benchmark and disseminate independent information on a European-wide level on the newly innovated energy technologies and solutions that

emerge from the R&D&T process. That would, on the one hand, help promising energy technologies and solutions in penetrating the market, and on the other hand, ensure more transparency for energy consumers and investors and hence lower the information barriers for adopting the technologies. Such projects are therefore expected to have high marginal benefits compared to their costs.

The strong efforts on raising demand for innovative energy solutions within the IEE programme may not exploit its full potentials if it is not met by adequate supply stimulation. If the IEE programme gave more priority to addressing information and institutional barriers also on the supply side, it could help in creating more effective markets for innovative energy solutions.

Although Table 27 further above shows that the budget for such projects have been increasing over the last three years within the P&D programme instruments, the focus and budget is still relatively low compared to the budget for projects on the demand side. This further indicates that there are unexploited potentials which could have increasing returns to scale if pursued in the future IEE programme.

Addressing information and institutional barriers on the supply side, and helping certain energy technologies to penetrate the market, may raise more concerns regarding competition and discrimination than is the case when focusing on the demand side. Yet, there will be solutions to such problems by taking measures to ensure that the supply-side project support is sufficiently open, broad-based and non-discriminatory.

Marginal environmental, economic and social impacts

A more investment oriented programme would be especially advantageous with respect to realising positive environmental and economic impacts as it provides more direct stimulation of energy investments, which in turn have short-term measurable impacts on the level of energy-savings and CO_2 emissions, than any of the other policy options.

Table 30: Environmental and economic impact across priority areas and start year

	Environmental impacts			Economic impacts		
	2008	**2009**	**2010**	**2008**	**2009**	**2010**
Facilitating policy implementation	4,2	4,2	4,0	4,0	4,4	4,2
Creating favourable market conditions	3,8	3,8	4,1	3,9	3,8	4,0
Preparing the grounds for new investments	3,4	4,0	4,3	3,9	4,1	4,6
Awareness raising	3,7	3,4	4,0	3,5	3,1	3,9
Building capacities and skills	3,9	3,5	3,9	3,6	3,7	3,9
Total	**3,9**	**3,8**	**4,0**	**3,8**	**3,8**	**4,0**

Table 30 shows that the assessments from project partners/coordinators indicate increasing general total impacts from P&D projects that prepare the grounds for new investments which have been paralleled by both increasing environmental and economic impacts. It also shows that increasing environmental and economic impacts are expected from the most recent projects that prepare the grounds for new investments. This provide an indication that increasing environmental and economic impacts may be realised by changing the P&D programme instruments in the direction of allocating more funds to investment-oriented projects.

However, there also appears to be a tendency that, after a downturn in 2009, the environmental and economic impacts of the kind of P&D projects which are reduced under a more investment oriented programme – awareness raising and capacity building projects – have been improved in 2010. Although the tendency is clearly the strongest for projects that prepare the ground for new investments, the expected net impacts of the change in the focus and budget allocation of P&D programme instrument cannot be concluded from this evidence alone.

However, one conclusion that can be made is that changing the programme in a more investment oriented direction will provide for environmental and economic impacts that are:

- more measurable because they can be defined in terms of targets for investments in innovative energy technologies and solutions which can be monitored accordingly;

- more certain to realise because the focus and targets of the projects are typically more concrete and well-defined leaving fewer uncertainties with respect to the pursuit of those targets:

- quicker to realise than in the case of focusing on awareness raising and capacity-building where impacts will often not materialise before in the long-term whereas focusing more specifically on improving the supply side and in preparing the grounds for new investments on the demand side may bring about relatively quick changes in investments levels that trigger environmental improvements.

Based on the overview of existing ELENA projects in Table 24, and the official requirements of minimum leverage, it appears be realistic to achieve an average leverage factor of no less than 20 for market replication projects as is currently expected for two of the three ELENA facilities. That means that each EURO of IEE funding will give rise to project specific investments in energy technologies and solutions which are at least 20 times as high. There is reason to expect that, in the future, a leverage factor of even higher magnitude will be applicable to both ELENA type and P&D type of projects that prepares the ground for new investments. This is because the market replication effect is not taken into account in official leverage factor targets. If the investments that are realised through the projects serve as inspiration for others governments/ cities or companies/households it may stimulate further investments and environmental improvements beyond the original scope of the projects. This, however, require a stronger focus on dissemination of experiences than has so far been practised in ELENA market replication projects. Moreover, as the high profile pilot ELENA projects are completed and a larger number of less high-profile smaller candidates emerge, it can be expected that new projects will not necessarily be as high leverage as the initial projects.

A rough estimate can also be provided with respect to the expected marginal environmental impacts from a more investment oriented programme. According to Table 22 and Table 24 in section 9.1.1, the average amount of CO_2 equivalents that according to the agreed targets and expected degrees of realisation will be achieved for P&D and ELENA projects in the priority areas of creating more favourable market conditions and preparing the grounds for new investments lie in the range of 24-26 tonnes per year for each 1000 EUR of IEE funding invested as a lump sum. The figure is remarkably stable across the three prioritised building block thus indicating that it may provide a realities picture of the marginal environmental impacts of a more investment oriented programme. However, as was the case with the investment leverage factor, wider market replica-

tion effects are usually not taken into in the environmental targets which is why they must be considered as minimum impacts that will be exceeded in many cases.

With respect to the figures in Table 22, it should be noted that the figures applying to the other priority areas are surrounded by much more uncertainty since it is extremely difficult to set CO_2 target that apply to, for example, awareness raising, capacity building and policy enabling projects. Furthermore, there are gratis effects of setting high targets for projects where it cannot be monitored subsequently. Hence, the figures are not suitable for estimating the comparable environmental impacts of a more capacity-building oriented programme.

Marginal impact on synergies

Turning the programme more strongly towards mobilising investments in sustainable energy would ensure a greater scale of activity in this area, perhaps allowing for a critical mass to be able to address such issues, and a broader scope of such activities. Increased synergies could be sought out between the projects under different IEE instruments, especially between promotion and dissemination projects such as those under the MLEI integrated initiative and market replication ELENA projects, as well as with other EU initiatives in this field including the SF/CF and EEE-F, in order to ensure coherence, avoid any overlaps, and create a critical mass of initiatives mobilising financing support for sustainable energy at EU level.

IEE's role in mobilising finance might also be reassessed to ensure maximum alignment between its different components and overall approach, such that there could be consideration of a more promotion and dissemination-oriented role in mobilising investment, besides the technical assistance currently provided. Moreover, the scope of market replication and investment mobilising activities might be extended to include a new form of market replication projects for eco-innovation in sustainable energy. This would then require ensuring increased alignment with the eco-innovation EU initiative to apply best practice tools and methods, share knowledge, and avoid overlaps.

Besides this, the growing synergies of the promotion and dissemination and market replication projects, notably with the SF/CF, would need to be further increased to ensure downstream leverage of the mobilised financing, technical assistance, or increased awareness.

Increased synergies with the other investment related initiatives should also increase, to ensure the programme's coherence in the overall context of EU sustainable energy development financing.

9.4 Monitoring and evaluation

Monitoring of the programme effects is essential for evaluation of the programme and, in contiuation hereof, making future recommendations for the programme.

As mentioned several times, monitoring information of IEE projects is very limited, and therefore subjective assessments together with more general data on project targets and characteristics have formed the basis of the impact assessment.

We propose some improvements with respect to project target-setting and monitoring that may improve the possibilities for quantitative/econometric analysis of project impacts in the future. How-

ever, the problem cannot be resolved by merely improving the monitoring techniques and more dedicated measuring of progress. If the quantitative assessment of project impacts is going to be improved in the future, impact measurability and monitoring design will have to part of the criteria for the awarding of projects grants and an improved system for following up on the results after the termination of projects will have to be set up. It might have the implication that projects for which it is inherently impossible to measure the impacts will have lower priority in the future than those where it might be possible.

While there are differences in the proposed policy options, well organised monitoring and evaluation is considered as necessary for all of them. It will, however, be easier to set targets and follow-up, if the IEE programme has a more investment-oriented focus, given the nature of the targets. Yet, this does not mean that this option should be preferred only for that reason or that there is less need for target setting and follow-up in the investments with the other options.

The administrative burdens related to reporting and management of the system must be considered in relation to the expected benefits when deciding on the scale of the system.

There are some general requirements for an efficient monitoring and evaluation system:

- Concrete operational targets must be formulated so these can serve to motivate the project partners and form the basis for subsequent performance evaluation
- Performance monitoring must be conducted, so the realised effect can be compared to the original targets
- Targets and monitoring must be tracked, registered and communicated so that it can be used for management and evaluation purposes, that is, as the basis for improving the future design, rules and procedures of the programme

When formulating the targets, there should be more consideration on their measurability and general applicability in the follow-up process– preferably by defining indicators that allows for a quantitative assessment of the degree of target realisation. In general, the targets should live up to the SMART[85] criteria. To make sure that the follow-up process is possible, and that the results are used in a forward-looking perspective, the targets and follow-up results should be registered in a central system and communicated to relevant stakeholders.

There is no central consolidated recording of project targets, which are stored in separate project files to be used for follow-up by project officers. As mentioned earlier, for the more recent projects, all project partners are, however, required to set impact targets for the following four categories:

1. CO_2 emission reductions
2. Energy savings

[85] SMART is an acronym for: Specific, Measurable, Achievable, Realistic, Time based. Variations to this definition can be found.

3. Leveraged energy investments

4. Installed capacity measured in MW (only in renewable energy projects)

Stakeholder interviews have pointed out the difficulties in setting realistic targets. They have moreover indicated that, given the lack of requirements for subsequent performance measuring and the non-availability of appropriate monitoring techniques and procedures, there is a tendency to exaggerate the targets to please the EC sponsors. The survey shows that impact targets have been formulated for 100 of the 135 included projects. However, these targets are not registered in the project management database.

We suggest including impact and activity targets as criteria for proposal selection. Proposals should also include indicators for the formulated targets. In order to facilitate the follow-up process, the formulated targets for each project should be registered in the project management database along with the results of the follow-up monitoring. Monitoring at the individual project level should, as a minimum, include the project managers' assessment of expected realisation rates for each target and a brief reason for the expectations. The expected realisation rates should be registered by the EACI in the project management data base along with other central information from the project monitoring.

Given the different nature of the projects, there will be differences in the number and character of relevant impact targets, and this should be taken into consideration. Projects within the priority areas of facilitating policy implementation, awareness raising and capacity-building should not be obliged to set targets along the four official indicators, if it does not make sense, but should be allowed to work with other kinds of quantitative targets.

The nature of tenders and concerted actions made the ex-ante evaluation/impacts assessments especially difficult for these programme instruments, since little information about their impacts is available. It is important to devote efforts to follow up on and register the experiences and results of tenders and concerted actions in order to enable evaluation of their impacts and subsequent improvements of the instrument design. Moreover, these results and experiences should of course be communicated when appropriate.

Impact targets have been formulated and registered for all ELENA projects. Given the early stage of the programme and the limited experience with progress reports, the follow-up procedure is difficult to evaluate. As a minimum there is a need to follow up and report on the degree and timing by which the planned investments are realised.

10. Comparative impact assessment of policy options

In this final chapter the marginal impacts and the associated costs and benefits of the four policy options are compared based on the evidence and impacts assessments presented in the previous sections of chapter 9 and the underlying assessments in chapter 8.

The comparative impact assessment of the policy options is presented in compressed form in Table 31. For each central impact dimension and for synergies, we have performed a rating of respectively marginal costs and benefits that are expected to arise by changing form the current form of the programme to either abandoning the programme (no continuation) or to a successor of the IEE II programme which is either more capacity-building oriented or more investment oriented. The rating and the summary text is an expression of our overall qualitative assessment, which is based partly on available quantitative data (surveys and project data), and partly on more qualitative evidence (interviews, workshop, qualitatively oriented survey questions and desk research).

Our overall rating of costs and benefits range from:

- minus 5 (÷ ÷ ÷ ÷ ÷) to 0 in the case of costs
- 0 to plus 5 (+ + + + +) in the case of benefits

The comparative impact assessment shows that there are strong indications that continuing the programme in its current form (policy option 2) entail higher net benefits than not continuing the programme (policy option 1). Looking at the environmental benefits they alone appear to be higher than the costs of the entire programme, and in addition it has significant economic and social benefits and synergies with other EU programmes (which perhaps could be better exploited but they are nevertheless substantial). Moreover, there are strong arguments that the programme activities are more rational to pursue at the EU level than at the national level.

However, continuing the programme in its current form does not appear to be the best policy option. The analysis and impact assessment have shown that increasing marginal returns from the IEE funding can be achieved by allocating more focus and budget to P&D projects and concerted action that facilitate policy implementation which is achieved without reducing the other programme elements in the capacity-building oriented programme (policy option 3). The impacts assessment have also shown that there is another fruitful way to increase marginal returns from IEE funding which is by way of allocating more focus and budget to P&D projects and market replication projects that create more favourable market conditions and prepare the grounds for new investments. This is realised under the investment oriented programme (policy option 4) which, on the other hand, reduces the focus and budget for P&D projects that contribute to raising awareness and building capacities and skills.

Both of these options would imply a somewhat higher budget than under the current programme if they are going to be implemented in the proposed form (the highest budget is required for the more investment oriented programme). Yet, the additional benefits seem to clearly outweigh the costs in both cases compared to the status quo.

Table 31: Final comparison of the marginal impacts (costs and benefits) of the policy options

	No continuation (option 1)	Capacity-building oriented programme (policy option 3)	Investment oriented programme (policy option 4)
Marginal budgetary costs/benefits	**Benefits: + + +** • Saved costs (grants and administration) of entire programme ≈ 110-120 mEUR p.a. • Saved administration costs for the applicants and beneficiaries	**Costs: ÷** • Additional budget of ≈ 20 mEUR p.a.	**Costs: ÷ ÷** • Additional budget of ≈ 40 mEUR p.a.
Marginal environmental costs/benefits	**Costs: ÷ ÷ ÷ ÷ ÷** • Less CO_2 reductions and energy-savings. Up to12 mio. tons of CO_2 eq. p.a . will be forgone which is worth at least 240 mEUR p.a. and probably more	**Benefits: + +** • Improved implementation of EU legislation in the sustainable energy area.The marginal environmental impacts of this could potentially be very high but they are rather indirect and hard to measure • Better awareness of the IEE programme and related EU funds for energy investments achieved through focused tenders and hence more and better open call applications and more ELENA projects being realised	**Benefits: + + +** • Creating more favourable market conditions on the supply side in combination with providing more direct stimuli to energy investments is expected to have high, measurable impacts on the level of energy-savings and CO_2 emissions • The environmental impacts could be further augmented if more is done to improve the dissemination of each market replication project **Costs: ÷** • Although they have decreasing returns to scale, less focus/budget to awareness raising and capacity building projects would reduce certain long-term environmental impacts
Marginal economic costs/benefits	**Costs: ÷ ÷ ÷** • Reduced investments in innovative energy technologies and solutions. A reduction of 0,75-1,5 bnEUR p.a. in the ELENA part. Probably a similar reduction in the P&D part. • Less growth as consequence of reduced investments	**Benefits: ≈ 0** • Marginal economic benefits are expected to rather limited as the type of projects that are promoted under a capacity-building programme do normally not give rise to high economic benefits (except in very indirect ways)	**Benefits: + +** • Creating more favourable market conditions on the supply side in combination with providing more direct stimuli to energy investments is expected to have high and partly measurable impacts on investment levels and economic growth . • An average leverage factor of at least 20 could be expected for new projects
Marginal social costs/benefits	**Costs: ÷ ÷** • Less social awareness of rational use of energy and less social/ institutional capacity for working towards sustainable energy. This has long-term negative environmental implications	**Benefits: +** • Marginal social benefits are expected to be high as the type of projects that are being promoted under a capacity-building programme normally give rise to high social benefits. • Yet, in general, decreasing returns to scale are expected for further capacity-building initiatives	**Benefits: ≈ 0** • Marginal social benefits are expected to rather limited as the type of projects that are promoted under an investment oriented programme do normally not give rise to high social benefits (except in very indirect ways) **Costs: ÷** • Less focus/budget to awareness raising and capacity building projects would reduce social impacts
Synergies with other EU progammes	**Costs: ÷** • Lost synergies from the gap that will emerge in the ecosystem of EU initiatives in the field • Potential loss of know-how and expertise	**Benefits: +** • Could ensure a greater scale of activity and critical mass in the capacity-building area thus allowing for better synergies with other EU progammes	**Benefits: + +** • Using part of the increased funding for improving the links and introducing conditionalities between investment oriented IEE projects and other EU programmes with direct investment grants may give rise to synergies **Costs: ÷** • By moving in a more investment oriented direction there is some risk of overlap with other EU funds (which however should be manageable)
Subsidiarity considerations	• Few chances that the IEE programme will be replaced by national initiatives and even if it would they would be less costs effective as dissemination and market replication works more effectively at the EU level	• There are clear advantages of EU level projects facilitating implementation of sustainable energy policies as opposed to national level projects • More EU level initiatives are needed in order to ensure critical mass and harmonisation	• Projects preparing the grounds for new investments could also be pursued at the national level, but their replication/ dissemination effects would be smaller • Projects creating more favourable market conditions on the supply side is relevant to pursue at the EU level due to the international character of the supply markets and supply chain

There is no clearcut conclusion as to whether a capacity-building oriented or an investment oriented programme would be the most cost-effective option. The investment oriented programme would probably give rise to marginal environmental benefits which would likely occur within a shorter time and have a higher chance of being realised and be easier to measure compared to the marginal environmental benefits under a capacity-oriented programme. Moreover, the investment oriented programme is likely to have higher marginal economic benefits and lower marginal social

impacts compared to the capacity-building oriented programme. On the other hand, the investment oriented programme also require a somewhat higher minimum budget than the capacity-building oriented programme.

Finally, there is both a potential advantage and drawback of the investment oriented programme in terms of synergies. On the one hand it may exploit synergies better by improving the links and create conditionalities between the IEE funds and other EU programmes that use direct investment grants. On the other hand, there is some risk that it would create overlaps that could weaken the synergies with other EU programmes.

Whether policy option 3 or 4 should be the preferred option depends especially on the following:

- What weights the policy-makers attach to the environmental, economic and social impacts, and how their expected timing and chance of being measured and realised are weighthed.

- Whether it is believed that the, in its next phase, the IEE programme will add most value by focusing more downstream and on the supply side of the innovation life cycle, or whether it is believed that this should be left almost entirely to other EU programmes whereas the IEE programme should stay more in the background of the technology life cycle and focus mainly on facilitating implementation of sustainable energy policies and building further institutional capacities in the area.

The question of in which context of the innovation life cycle (upstream or downstream, demand side or supply side, or in the entire context) an IEE programme dealing with non-technical barriers would be able to add most value in the future will also depend on how the rest of the EU funding programmes for sustainable energy develop. Since there are no other offerings for a capacity-building and policy implementation facilitation among other EU programmes in the area, and also very limited supplementing/alternative initiatives within the member states, there is a good case for pursuing a capacity-building oriented programme.

Investment oriented downstream actions, including project development services, while potentially close to those from other EU programmes that also encompass financing and loan facilities such as for example the EEE-F (it is beyond the scope of this analysis to conclude on which of the other EU programmes would be best suited to pursue market replication projects), remain different under IEE in that they are independent of other financing for the underlying investments (at least for ELENA-EIB, though ELENA-KfW and ELENA-CEB have changed this approach). They could possibly be concentrated in IEE by expanding the scope of the programme with respect to market replication facilities – especially because of the valuable market replication expertise that has already been built within the IEE programme and because of the obvious synergies with promotion and dissemination activities which could be further exploited.

Another possibility would be to apply some combination of policy option 3 and policy option 4 as they are both expected to provide net benefits compared to just continuing the programme in its current form. A combination of policy option 3 and 4 would imply prioritizing both facilitating policy implementation, creating more favourable market conditions and preparing the grounds for new investments. Such a strategy would require a more substantial budget increase unless the other priority areas (awareness raising and building capacities and skills) are reduced even further than in policy option 4.

Appendix A.
Calculation of impact scores

Calculation of impact scores
Both partners/coordinators and officers have been asked to indicate the expected impact of their project compared to both a direct investment in sustainable energy and a best practice project focusing at one specific type of impact. They were asked to indicate the expected impact in six different categories (Deloitte's grouping is indicated in parentheses):

- Energy savings (environmental)
- CO_2 reductions (environmental)
- Increased renewable energy capacity (economic)
- Economic growth (economic)
- Capacity building among organisations (social)
- Social awareness of sustainable energy use (social)

Below are the scales on which they were asked to estimate the impacts. Additionally, the score assigned to each option is presented.

Direct investment scale	Score	Best practice scale	Score
Much higher impact	5	Maximum impact, in line with the focused best practise project	5
Higher impact	4	Higher than average impact	4
Same impact	3	Average impact, like the typical P&D project	3
Lower impact	2	Lower than average impact	2
Much lower impact/no impact	1	Minimum impact /no impact	1
Don't know	-	Don't know	-
The impact in question is not possible for this kind of project	-	The impact in question is not possible for this kind of project	-

To reduce the number of impact scores per project, Deloitte has created the three impact groups below according to the bullet-list above. The impact in each group is a simple average of the two categories included in the group.

- Environmental
- Economic
- Social

The number of impact scores is reduced further by creating one score calculated as the average of the scores on the direct investment scale and the best practice scale. Thus, the presentation of the results includes eight different scores:

Impact Group / Respondent	Environmental	Economic	Social	Total
Project partner/-coordinator	Score #1	Score #2	Score #3	Score #4
Project officer	Score #5	Score #6	Score #7	Score #8

Appendix B.
List of stakeholders interviews

Id	Title	Full name	Organisation	IEE Role	IEE Project
EC Officials					
1	Mrs.	Malgorzata Peksa-Blanchard	DG ENER	Programme management	
2	Mrs.	Tonje Haabeth	DG ENER	Programme management	
3	Mrs.	Florence Dinkespiller	DG ENER	Programme management	
4	Mr.	Roman Doubrava	DG ENER	Programme management	
5	Mr.	Karl Kellner	DG ENER		
6	Mrs.	Pirjo-Liisa Koskimaki	DG ENER		
7	Mr.	Pedro Ballesteros	DG ENER	Programme management	
8	Mr.	Hans Van Steen	DG ENER		
9	Mr.	Paul Hodson	DG ENER	Programme management	
10	Mr.	William Gillet	EACI	Programme management	
11	Mr.	Vincent Berrutto	EACI	Programme management	
12	Mrs.	Waltraud Schmid	EACI	Programme management	
13	Mrs.	Anette Jahn	EACI	Programme management	
14	Mr.	Peter Loeffler	EACI	Programme communication	
15	Mr.	Ralf Goldmann	EIB	Programme management	
16	Mr.	Bruno Schmitz	DG RTD		
17	Mrs.	Maud Skaringer	DG REGIO		
18	Mrs.	Bogna Filipiuk	DG ENTR		
19	Mrs.	Diana Pizarro	DG ENTR		
20	Mr.	Richard Clarke	DG ECFIN	Programme management	
21	Mr.	Marcel Rommerts	DG MOVE		
22	Mrs	Villo Lelkes	DG ENER		
Key stakeholders					
23	Mrs.	Christine Lins	European Renewable Energy Council		
24	Mr.	Gérard Magnin	Energie-Cités, Sustainable Energy at cities and town		
26	Mr.	Juan Alfonso de Molina	European Federation of Intelligent Energy		

			Efficiency Services		
Belgium					
27	Mrs.	Marie Schippers	Service Public de Wallonie - Département de l'Energie et du Bâtiment durable	IEEC	
28	Mr.	Guillaume Amand	ABEA - Brussels Energy Agency	Energy Agency	
29	Ms.	Sorcha Edwards	The European Liaison Commitee for Social Housing	Project Coordinator	Power House Europe
30	Mr.	Jean Marc Jossart	EUROCHAMBRES - Association des Chambres de Commerce et d' Industrie Européennes asbl	Project Coordinator	CrossBorderBioenergy
31	Mrs.	Nathalie Gilly	The European Association for the Promotion of Cogeneration, COGEN Europe VZW	Project Coordinator	EnergizAIR
32	Mr.	Pedro Dias		Project Coordinator	ESD II
33	Mrs.	Emanuela Giovannetti		Project Coordinator	Smart-e buildings
France					
34	Mrs.	Nadège Austin	ADEME, International Programmes and Projects Department	NCP	
35	Mrs.	Evelyne Bisson	Ministère de l'Economie, des Finances et de l'Industrie	IEEC	
36	Mrs.	Marie-Laure FALQUE MASSET	ARENE Ile de France	Energy Agency	
37	Mrs.	Aline Brachet	Association pour le développement économique et industriel du Massif central	Project Coordinator	RURENER
38	Mrs.	Carine Puyol	Union Sociale pour l'Habitat	Project Partner	Power House
39	Mrs.	Isabel Manuela FERNANDEZ FUENTES	Fédération Européenne des Géologues	Project Coordinator	GEOTRAINET
40	Mrs.	Yannick REGNIER	Comité de Liaison Energies Renouvelables	Project Coordinator	RES Champion league
41	Mr	François Gréaume	ADEME, Brussels	National representative	
Hungary					
42	Mrs	Veronika Eros		IEEC	
43	Mrs	Olah Zsanett		Ministry of National Development	
44	Mrs	Dorottya Hujber		Energy Centre	
45	Mrs	Maria Stark		Project Partner	Change
46	Mrs	Flora Palmay		Project Partner	Change

47	Mr	Miklos Palfy		Project Partner	PV-NMS-NET
48	Mr	Péter Szuppinger		Project Partner	INTENSE
49	Mr	Gabor Kelen		Project Partner	Carbon Detective
50	Mr	Fodor Zoltan		Project Partner	Farmagas
51	Mrs	Béla Mártonffy		Project Partner	Farmagas
Spain					
52	Mrs	Virginia Vivanco Cohn	IDEA	NCP	
53	Mrs	Isabel Del Olmo	EnerAgen	Energy Agency	
54	Mrs	Marisa Olano	IDEA	Energy Agency	
55	Mr	Pau Noy Serrano		Project Partner	MoMo Car Sharing
56	Mrs	Maria Perel Medel	Union Fenosa		
57	Mr	Alberto Cena	Asosiacin Empresarial Eolica		
58	Mrs	Claudia Lisboa		Project partner	EETI
59	Mr	Francis de Sararga		Project coordinator	REDIBA
Poland					
60	Mr	Wojciech LUBIEWA-WIELEŻYŃSKI	Polish Chamber of Chemical Industry (Warsaw)	Project partner	CARE+
61	Mrs	Katarzyna Grzejszczyk	Krajowa Izpa Gospodarcza / The Polish Chamber of Commerce	Project partner	CHANGE
62	Mr	Andrzej Rajkiewicz	NAPE - Narodowa Agncja Poszanowania Energii	Project partner/Energy agency	TABULA
63	Mrs	Aneta Ciszewska	Ministry of Economy, IEE programme committee member (D)	IEEC member	
64	Mrs	Antonina Kaniszewska	Krajowa Agencja Poszanowania Energii	NCP	
65	Mr	Stanislaw M. Pietruszko	Politechnika Warszawska / Warsaw University of Technology	Project coordinator	PV-NMS-NET
66	Mrs	Magdalena Rogulska	IPIEO (Institute for Renewable Energy) / PIMOT	Stakeholder	Stakeholder
67	Mr	Tomasz Zwolinski	Urząd Miasta Krakowa (Krakow)	Project partner	AENAS
68	Mr	J. Kesek	Urząd Miasta Krakowa (Krakow)	Project partner	AENAS
69	Mr	Adam Gula	Stowarzyszenie The Kraków Institute for Sustainable Energy	Project partner	ALTER-MOTIVE
70	Mr	Andrzej Kassenberg	InE - Instytutut na rzecz Ekorozwoju (Fundacja Instytut na rzecz Ekorozwoju Foundation Institute for Sustainable Development	Stakeholder	

			)		
Bulgaria					
71	Mr	George Georgiev	Bulgarian Housing Association	Project partner	POWER HOUSE EUROPE
72	Mr	Kolio Kolev	Energy efficiency agency	Project partner/Energy agency	CA ESD, CA EPBD, ODYSSEE-MURE, SUPPORT_RES, PROMOSCENE, REQUEST
73	Mrs	Borjana Uzunova	Energy efficiency agency	Project partner/Energy agency	CA ESD, CA EPBD, ODYSSEE-MURE, SUPPORT_RES, PROMOSCENE, REQUEST
74	Mr	Ognian Markovski	Energy efficiency agency	Project partner/Energy agency	CA ESD, CA EPBD, ODYSSEE-MURE, SUPPORT_RES, PROMOSCENE, REQUEST
75	Mr	Ludmil Kostadinov	Energy efficiency agency	Project partner/Energy agency	CA ESD, CA EPBD, ODYSSEE-MURE, SUPPORT_RES, PROMOSCENE, REQUEST
76	Mrs	Doriana Malinovska	Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences (CL SENES BAS)	Project partner	PV-NMS-NET
77	Mrs	Milena Tsoleva	Ministry of Economy and Energy, Energy Strategy Directorate	NCP/IEEC member	
78	Mrs	Antonia Moynova	Ministry of Economy and Energy, Energy Strategy Directorate	NCP	
79	Mr	Zdravko Georgiev	Sofia Energy Agency - SOFENA	Project partner/Energy agency	INTENSE
80	Mr	Zdravko Genchev	EnEffect – Centre for energy efficiency, Sofia	Project partner	
81	Mrs	Liliana Dombalova	Bulgarian Chamber of the Chemical Industry	Project partner	CARE+
82	Mr	Dimitar Baev	Energy Efficient Systems Ltd.	Project partner	CARE+
83	Mr	Angel Nikolaev	Черноморски енергиен център (Black Sea Energy Centre)	Project partner/Energy agency	SF-Energy Invest
Germany					
84	Mr	Lutz Mez	Freie Universität Berlin - Forschungsstelle für Umweltpolitik	Project coordinator	SAUCE
85	Mrs	Annette Piening	Freie Universität Berlin - Forschungsstelle für	Project coordinator	SAUCE

			Umweltpolitik		
86	Mrs	Katrin Jullien	B.&S.U. Beratungs- und Servicege-sellschaft Umwelt mbH	Project coordi-nator	come2CoM (and part-ner RELACS, Clean drive)
87	Mrs	Thekla Heinel	B.&S.U. Beratungs- und Servicege-sellschaft Umwelt mbH	Project coordi-nator	come2CoM (and part-ner RELACS, Clean drive)
88	Mr	Martin Schipper	TSB Technologiestif-tung Innovationsagen-tur Berlin GmbH	Project coordi-nator	ECORAILS
89	Mrs	Janett Büttner	Choice GmbH	Project coordi-nator	OBIS
90	Mr	Achim Neuhäuser	Berliner Energieagen-tur GmbH	Project coordi-nator	CHP goes Green (also coordinator of Pri-meEnergyIT, partner in SAUCE)
91	Mrs	Wiebke Abeling	Kommunale Umwelt-AktioN U.A.N.	Project partner	RURENER
92	Mr	Michael Frömming	Freie Hansestadt Bremen, Senator for Umwelt, Bau, Verkehr und Europa	Project coordi-nator	Momo Car-Sharing
93	Mr	Michael Glotz-Richter	Freie Hansestadt Bremen, Senator for Umwelt, Bau, Verkehr und Europa	Project coordi-nator	Momo Car-Sharing
94	Mrs	Claudia Häfner	Project Management Jülich	NCP/IEEC member	
Sweden					
95	Mr	Lennart Jagemar	CIT Energy Manage-ment AB	Project partner	SDHtake-off
96	Mr	Mats Johansson	KanEnergi AB	Project coordi-nator	
97	Mrs	Jenny Gode	IVL Swedish Environ-mental Research Insti-tute Ltd	Project partner	EESI, Ecoheat4cities, PASS-NET, NORTH-PASS
98	Mr	Ingemar Johansson	Göteborg stad	Project coordi-nator	Project coordinator CARMA and partner ESOLi
99	Mrs	Therese Rydstedt	SABO AKTIEBOLAG	Project partner	POWER HOUSE EUROPE
100	Mrs	Lisa Lundmark	Swedish Energy Agency	NCP/IEEC member	
101	Mrs	Anna Land	Swedish District Heat-ing Association Svensk fjärrvärme	Project partner	EcoHeat4EU, Eco-Heat4Cities
102	Mr	Jesper Johansson	WSP	Project partner	EPOMM-PLUS, TRAVEL PLAN Plus
France (phone interview)					
103	Mr	Shailendra Mudgal	Bio Intelligence Ser-vice S.A.S.	Project man-ager	Lot 22 of the Public tender on ecodesign studies

Appendix C. Questionnaires

Web survey, project partners/coordinators

Introduction mail

Dear [Name]

WE VALUE YOUR OPINION

Welcome to the online project participant survey for the combined Final Evaluation of the Intelligent Energy Europe II Programme (2007-2013) and ex-ante evaluation of the Intelligent Energy Europe III Programme. It should not take you more than 30 minutes to fill in this questionnaire.

The evaluation is performed by Deloitte Consulting upon the request of the European Commission DG Energy (DG ENER).

The purpose of this questionnaire is to collect the opinions of the project coordinators and partners of the Intelligent Energy Europe II Programme. You are therefore contacted because of your participation in the IEE II Programme. Your input is very important in order to continuously improve the relevance, effectiveness and efficiency of the IEE Programme.

The questionnaire is mostly based on single choice questions (radio buttons). Please select the most appropriate response to the question. If you wish to give a detailed response, additional space has been provided to insert more comments.

All responses will remain strictly confidential.

Finally, in order to ensure your contribution to the evaluation process, we kindly ask you to complete this questionnaire the latest by the xxth. January.

Should you have any questions or comments, please do not hesitate to contact us at:

lreenberg@deloitte.com (Lars Reenberg) or +45 3093 5497

menevoldsen@deloitte.com (Martin Enevoldsen) or +45 2220 2174

ldasilvagaspar@deloitte.com (Lydia Da Silva Gaspar) or +32 749 54 99

Thank you very much for your participation and your valuable input!

CONFIDENTIALITY GUARANTEE: In line with common evaluation practices, and according to the Belgian law of 11 December 1998 implementing Directive 95/46/EC on Privacy Protection in relation to the Processing of Personal Data, the content of your completed questionnaire will remain strictly confidential and the questionnaire will not be disclosed by Deloitte to third parties. During the survey, individual answers to the questionnaires are hosted on the server of the web-survey provider. Final results will be presented in aggregate form only.

Introduction to the specific project that form the basis of the survey

Dear [Name],

You are invited to this survey, because we have information, that you are the project partner/coordinator for the IEE II project:

[Project name]

We therefore ask you to answer the questionnaire based on your experience with this project and the IEE II programme as a whole.

If our information is incorrect, and you are not the project partner/coordinator of this project, please indicate this in the first question and you will not be asked to complete the questionnaire.

Thank you for your participation

Background questions

1. **Are/were you a project coordinator or a project partner (i.e. co-beneficiary) in IEE II?**
    a. Coordinator
    b. Partner (co-beneficiary)
    c. Both (e.g. coordinator in one IEE II project and partner in another IEE II project)
    d. Neither coordinator nor partner (e.g. sub-contractor)

2. **[if d in Q1] Do you know the name and email address of the project partner/coordinator in your country?**
    a. Yes
    b. No [if selected: "Thank you for your participation"]

3. **[if a in Q2] Please indicate the name and email address of the project partner/coordinator.**
    a. [Text fields]

4. **Please select your country of residence (choice in list)**
    a. [Choice from list]

5. **Select in the list below, the profile of your organisation**
    a. Governmental (local, regional or national public or governmental organisations e. g. public authorities, universities, hospitals, schools)
    b. Public Commercial Organisation (i.e. commercial organisation established and owned by a public authority such as Public Transport Operators)
    c. Private Non-profit making Organisation (i.e. any privately owned non-profit organisation)
    d. Private Commercial Organisation (i.e. any privately owned organisation with profit-making goals, owned by individuals either directly or by shares)

e. European Economic Interest Group

f. International Organisation (i.e. an international organisation established by national governments)

g. Other (please specify)

Footnote:

Bodies that declare their status as public must comply with the following criteria:

- *The body has been created by a public authority or is governed by private law with a public service mission.*
- *Note: The "public interest" must be explicitly mentioned in the relevant legal or administrative act/s.*
- *The internal procedures and accounts are submitted to control by a public authority.*
- *The body is financed totally or to a large extent (i.e. more than 50%) by public sources.*
- *In the event that the body stops its activities, all rights and obligations including financial will be transferred to a public authority.*

6. Is your organisation a small or medium-sized enterprise (SME)?

(i.e. an enterprise which employs fewer than 250 persons and which has an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million euro)

a. Yes

b. No

c. Don't know

7. In which other European funding scheme are you currently a project participant?

a. In no other European funding scheme

b. Structural and Cohesion Funds (e.g. European Regional Development Fund / INTERREG)

c. The RTD Framework Programme (FP7)

d. LIFE +

e. Other (please specify)

8. In how many projects have you participated within the IEE I (2003-2006)? or IEE II (2007-2013) programmes, including your current one(s)?

a. 1

b. 2

c. 3

d. More than 3

Programme awareness

9. How did you discover the Intelligent Energy Europe II programme?

a. We had applied for IEE I in the past

b. European Info Day
c. National Info Day
d. IEE News Alert
e. Internet (e.g. IEE website)
f. Brochures
g. Official Journal
h. Office representing your interest in Brussels
i. IEE partner/coordinator
j. Personal contact
k. Other (please specify)

Project funding

10. Would the project have been initiated without IEE funding?

a. Yes, but with a delay
b. Yes, but with a smaller budget
c. Yes, but with a smaller budget and a delay
d. No
e. Don't know

Project energy sector focus

11. Which energy consumption sectors or energy production sectors does your project focus on (tick one or more boxes)?

a. Industry
b. Agriculture
c. Service & Commerce
d. Transport
e. Households
f. Public Institutions
g. Central energy production
h. Decentral energy production
i. No focus on energy consumption or energy production sectors
j. Other (please specify)
k. Don't know

Project stakeholder groups focus

12. Within this sector, which stakeholder groups does your project target (tick one or more boxes)?

a. Public authorities
b. Policy makers
c. Utilities

d. Energy agencies
e. Transport agencies
f. Education system
g. Investors (financial institutions, bankers, project developers)
h. Citizens
i. Building professionals (e.g. architects, engineers, installers, craftsmen)
j. Manufacturers
k. Farmers, landowners
l. Industry
m. Transport operators
n. Standards bodies
o. Media
l. Other (please specify)
m. Don't know

Project technology focus

13. **Is the project targeting specific energy technologies or products?**
    a. Yes (please specify)
    b. No
    c. Don't know

Geographical focus

14. **Have the project's promotion and dissemination activities been focused at a specific geographical target area/region?**
    a. Yes (please specify)
    b. No
    c. Don't know

Expected effectiveness of the project

15. **To what extent do you expect/know the project's activity targets to be fulfilled by the time the project reaches the its end?**
    a. Significantly more than 100%
    b. 100%
    c. 75-100%
    d. 50-75%
    e. 25-50%
    f. 0-25%
    g. Don't know

Footnote:
An activity target is a commitment to carry out certain activities as part of the project. An activity target com-mitment does not extend to the effects/outcomes that the project is supposed to have, but only to the completion of specific activities. Examples of activities are education activities, events, distribution of information material etc.

16. **How would you rate the effectiveness of the channels you use/will use to disseminate and communicate information about your project insights and results to your target groups?**
    a. Website
    b. Newsletter
    c. Videos
    d. Publications (brochures, leaflets)
    e. Media campaign (radio, television, newspaper)
    f. Conferences/seminars
    g. Other (please specify)

    Scale:
    a. Very effective to reach our target group
    b. Effective to reach our target group
    c. Somewhat effective to reach our target group
    d. Not effective to reach our target group
    e. We did not use this channel
    f. Don't know

Expected impacts of the project

17. **What quantitative impact targets have been formulated as part of the project contract (tick one or more boxes)? (tick one or more boxes)**

[ask for description of impact targets for selected fields]

    a. Expected energy savings (measured in percentage, joule, KWh or toe)
    b. Reduction in CO_2 emissions (measured in percentage or tonnes)
    c. New investments in sustainable energy (measured in Euro)
    d. Reduced transport work (measured in vehicle type*kilometres)
    e. Quantified increases in the use/consumption of specific products/technologies/behaviours that contribute to sustainable energy (measured in percentage or numbers)
    f. Quantified increases in the awareness of certain products/ technologies/behaviours that contribute to sustainable energy (measured in percentage or numbers)
    g. Quantified increases in renewable energy production (measured in percentage, joule, KWh or toe)
    h. Number of people/organisations impacted by the project's and promotion and dissemination activities

i. Other (please specify)

j. No quantitative impact targets formulated

Footnote:
An impact target is a commitment to contribute to realising certain specified effects on stakeholders or other types of outcomes as a consequencein continuation of the project as a whole. Hence, impact targets go further that activity targets by also committing to the effects/outcomes of the project.

18. To what extent do you expect that the impact targets will be fulfilled in continuation of the project and as a result of the project as whole?
[answer for each entry]

a. Significantly more than 100%

b. 100%

c. 75-100%

d. 50-75%

e. 25-50%

f. 0-25%

g. Don't know

19. How difficult has it been to quantify the expected impact of your project?

1. Easy
2. Achievable
3. Difficult
4. Almost impossible
5. No opinion

Please justify your opinion [Open text]

Expected environmental, economic & social impacts of the project compared to alternative ways of using the project funds

20. Please rank the impact of the project on the six areas below. The ranking should be based on a comparison with an alternative scenario where the project funding is used, instead, for an available direct investment in sustainable energy. Examples of direct energy investments are investments in installation of renewable energies or investments in more energy efficient buildings, electrical appliances, transport technologies, etc.

a. What impact in terms of energy savings do you expect from the project compared to the energy savings that you think could have been achieved by using the funds for direct investments in sustainable energy

b. What impact in terms of CO_2 reductions do you expect from the project compared to the CO_2 reductions that you think could have been achieved by using the funds for direct investments in sustainable energy?
c. What impact in terms of increased renewable energy capacity do you expect from the project compared to the increased renewable energy capacity that you think could have been achieved by using the funds for direct investments in sustainable energy?
d. What impact in terms of economic growth do you expect from the project compared to the economic growth that you think could have been achieved by using the funds for direct investments in sustainable energy?
e. What impact in terms of capacity building among organisations to accomplish sustainable use of energy do you expect from the project compared to the capacity building that you think could have been achieved by using the funds for direct investments in sustainable energy?
f. What impact in terms of increased social awareness of sustainable use of energy do you expect from the project compared to the increased social awareness that you think could have been achieved by using the funds for direct investments in sustainable energy?

Scale:

a. 5 – Much higher impact
b. 4 – Higher impact
c. 3 – Same impact
d. 2 – Lower impact
e. 1 – Much lower impact/no impact
f. Don't know
g. The impact in question is not possible for this kind of project

21. Please rank the impact of the project on the six areas below. The ranking should be based on a comparison with an alternative scenario where the project funding is used, instead, for a best practise promotion and dissemination (P&D) project with maximum focus on a particular impact. Hence, for each type of impact, you are asked to rate the project against a hypothetical promotion and dissemination project that devote maximum effort to that impact, for example energy-savings or capacity-bulding.

a. What impact in terms of energy savings do you expect from the project compared to the energy savings that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on energy-savings
b. What impact in terms of CO_2 reductions do you expect from the project compared to the CO_2 reductions that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on CO_2 reductions?

c. What impact in terms of increased renewable energy capacity do you expect from the project compared to the increased renewable energy capacity that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on renewable energy capacity?
d. What impact in terms of economic growth do you expect from the project compared to the economic growth that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on economic growth?
e. What impact in terms of capacity building among organisations to accomplish sustainable use of energy do you expect from the project compared to the capacity building that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on capacity building?
f. What impact in terms of increased social awareness of sustainable use of energy do you expect from the project compared to the increased social awareness that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on social awareness?

Scale:

g. 5 – Maximum impact, in line with the focused best practise project
h. 4 – Higher than average impact
i. 3 – Average impact, like the typical P&D project
j. 2 – Lower than average impact
k. 1 – Minimum impact /no impact
l. Don't know
m. The impact in question is not possible for this kind of project

22. Do you have any additional comments to the expected relative impacts of the project

a. [Open text]

Relevance and effectiveness of the IEE II programme

23. Please give your opinion on the relevance of the following IEE II objectives to answer the needs, issues and problems related to energy in Europe, notably with regards to ensuring secured, sustainable energy for Europe, while enhancing European competitiveness

a. Foster energy efficiency and the rational use of energy resources
b. Promote new and renewable energy sources and support energy diversification
c. Promote energy efficiency and the use of new and renewable energy sources in transport
d. Other (please specify)

Scale:

a. High relevance
b. Medium relevance

c. Low relevance
d. No opinion

24. Please give your opinion on the following statements regarding the effectiveness of the legal framework of the IEE II programme.

a. The overall legal framework establishing the Competitiveness and Innovation Framework Programme (CIP Decision) is clear and understandable
b. The overall legal framework establishing the CIP contributes to achieve IEE programme objectives
c. The rules for participation are clear and understandable
d. The rules for participation do not bring barriers to achieve IEE programme objectives
e. The contracts are clear and understandable
f. The contracts do not bring barriers to achieve IEE programme objectives

Scale:

a. I strongly agree
b. I agree
c. I disagree
d. I strongly disagree
e. No opinion

25. Please give your opinion on the following statements regarding the effectiveness and efficiency of the implementation modalities and management system of the IEE II programme.

a. The project selection process is fair and transparent
b. The negotiated/imposed project performance indicators bring an added-value to your project management process
c. The negotiated/imposed project indicators are easy to collect
d. The management process is easier today thanks to simplification initiatives towards the final beneficiaries (e.g. one-fits-all overhead costs, less bank guarantees, etc.)
e. The administrative burden to participate within the IEE programme is of an acceptable level
f. The human and financial resources foreseen within your contract are adequate to effectively disseminate information about projects results/impacts.
g. The level of funding (typically 75%) is adequate to successfully implement the project

Scale:

a. I strongly agree
b. I agree
c. I disagree
d. I strongly disagree
e. No opinion

26. Please give your opinion on the following statements regarding the characteristics of the IEE II programme/projects.

a. Projects foster the transfer of best practices across regions and countries
b. Projects generally trigger investments in sustainable energy
c. Projects increase stakeholders' capacity to improve their energy efficiency and/or their share of renewable energy sources
d. Funding priorities respond to important user needs and market barriers
e. The programme complements well national or regional funding schemes and other EU programmes

Scale:

f. I strongly agree
g. I agree
h. I disagree
i. I strongly disagree
j. No opinion

27. Please give your opinion on how well the EACI (Executive Agency for Competitiveness and Innovation – which administers the IEE programme on behalf of the Commission) handles the programme and your project.

a. Aspects of EACI programme/project management
b. Information about the programme
c. Application procedures and timescales
d. Time taken to assess applications and make awards
e. Explanation for the decision to award or reject
f. Contracting arrangements and procedures
g. Time taken to process requests for payment
h. Monitoring arrangements and procedures
i. Requirements regarding activity reports and final report
j. Responsiveness of EACI to requests for information, advice, support
k. Promotion and dissemination of results by the EACI
l. Guidance from Project Officer
m. Guidance from Financial Officer
n. Overall EACI management of my project

Scale:

a. Very good
b. Good
c. Neutral
d. Poor

e. Very poor
f. No opinion

28. **Please use the space below to elaborate on your responses and/or to comment on any other aspects (positive or negative) of the role of the EACI in the programme and your project**
    a. [Open text]

29. **Do you have any additional comments on the Intelligent Energy Europe Programme?**
    a. [Open text]

How to improve the IEE programme in the future

30. **The relevance/impact of the IEE programme could be increased by giving more focus and priority to certain general programme sectors over others (for example more priority to Energy Efficiency (SAVE), New and Renewable Resources (ALTENER), Energy in Transport (STEER) or Integrated Initiatives**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

    Please justify your opinion [Open text]

31. **[If a. or b in Q30] Which programme (and sub-programme) sectors should be given more focus and priority?**
    a. [Open text]

32. **The relevance/impact of the IEE programme could be increased by raising the budget per project, that is, giving more priority to larger projects (whilst the total budget of the programme stays equal - thus having less projects)**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

33. **The relevance/impact of the IEE programme could be increased by extending the duration of the projects selected (currently limited to 3 years)?**
    a. I strongly agree

b. I agree
c. I disagree
d. I strongly disagree
e. Don’t know

34. If you see any other ways to change the programme that might increase the relevance/impacts, please indicate which?

a. [Open text]

35. Allocating 25 per cent less budget to the IEE programme as a whole would probably reduce the positive impacts by more than 25 per cent

a. I strongly agree
b. I agree
c. I disagree
d. I strongly disagree
e. Don’t know

36. Allocating 25 per cent more budget to the IEE programme as a whole would probably increase the positive impacts by more than 25 per cent

a. I strongly agree
b. I agree
c. I disagree
d. I strongly disagree
e. Don’t know

37. The current budget of the IEE programme is sufficient to attract the promotion and dissemination projects with the greatest potentials

a. I strongly agree
b. I agree
c. I disagree
d. I strongly disagree
e. Don’t know

Please justify your opinion [Open text]

Excel-based survey, project officers

Introduction mail

Dear [Name]

Deloitte Consulting is responsible for a combined final evaluation of the Intelligent Energy Europe II Programme (2007-2013) and ex-ante evaluation of a successor to the Intelligent Energy Europe II Programme. You are invited to participate in the evaluation, because we have been informed, that you are responsible for a number of promotion and dissemination projects within the IEE II Programme.

We therefore kindly ask you to fill out the questionnaire attached to this mail.

An online web survey has already been launched to collect the opinions of the beneficiaries (project coordinators/partners) of the IEE II Programme.

The purpose of the second questionnaire attached to this mail is twofold:

1. To have a second, and more neutral, view on the relative (cost) effectiveness of the individual projects. With both surveys, your answers (representing your views and insights as an EACI project officer) can be compared with the answers of the individual project coordinators/partners in order to form a combined score for each project along different dimensions

2. To survey your opinion regarding the ways in which you see possibilities for improving the IEE programme in the future

The questionnaire is mostly based on single choice questions (radio buttons). Please select the most appropriate response to the question.

Finally, in order to ensure your contribution to the evaluation process, we kindly ask you to complete this questionnaire and return it to lreenberg@deloitte.dk at the latest by January 26, 2011.

Should you have any questions or comments, please do not hesitate to contact us at:

lreenberg@deloitte.dk (Lars Reenberg) or +45 3093 5497

menevoldsen@deloitte.dk (Martin Enevoldsen) or +45 2220 2174

Kind regards

Introduction

Dear [Name]

Thank you for taking the time to complete this questionnaire - we value your input.

The questionnaire consists of two parts:

- The first part focuses on the impacts of the projects for which you have been responsible

- The second part are more general questions about the IEE programme focus

Before proceeding to the questionnaire, we would like you to fill out the background information below, so we are sure to have the correct contact details.

[Enter contact information]

Project specific questions

In this section you are asked to value the impacts of the listed projects, that is, the impact that you think will be realised in continuation of the project, but no later than 2020. The ranking should be based on a comparison with an alternative scenario where the project funding is used, instead, for a best practice promotion and dissemination (P&D) project with maximum focus on a particular impact.

Hence, for each type of impact, you are asked to rate the project against a hypothetical promotion and dissemination project that devote maximum effort to that impact, for example energy savings or capacity building.

Finally, you are asked to rank the cost-effectiveness of the project with the cost-effectiveness you think the average IEE II project has.

Please select your answer from the drop down list in the green cells.

1. **Please rank the impact of the project on the six areas below. The ranking should be based on a comparison with an alternative scenario where the project funding is used, instead, for a best practise promotion and dissemination (P&D) project with maximum focus on a particular impact. Hence, for each type of impact, you are asked to rate the project against a hypothetical promotion and dissemination project that devote maximum effort to that impact, for example energy-savings or capacity building.**

    a. What impact in terms of energy savings do you expect from the project compared to the energy savings that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on energy-savings
    b. What impact in terms of CO2 reductions do you expect from the project compared to the CO2 reductions that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on CO2 reductions?
    c. What impact in terms of increased renewable energy capacity do you expect from the project compared to the increased renewable energy capacity that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on renewable energy capacity?

d. What impact in terms of economic growth do you expect from the project compared to the economic growth that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on economic growth?
e. What impact in terms of capacity building among organisations to accomplish sustainable use of energy do you expect from the project compared to the capacity building that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on capacity building?
f. What impact in terms of increased social awareness of sustainable use of energy do you expect from the project compared to the increased social awareness that you think could have been achieved by using the funds for a best practice promotion and dissemination project with maximum focus on social awareness?

Scale:

a. 5 – Maximum impact, in line with the focused best practise project
b. 4 – Higher than average impact
c. 3 – Average impact, like the typical P&D project
d. 2 – Lower than average impact
e. 1 – Minimum impact /no impact
f. Don't know
g. The impact in question is not possible for this kind of project

General questions

In this section you are asked some some general questions about the IEE programme.

In most questions, the answer should be selected from a drop down list in the green cells. However, some answers should be given in free text.

2. **The relevance/impact of the IEE programme could be increased by giving more focus and priority to certain general programme sectors over others (for example more priority to Energy Efficiency (SAVE), New and Renewable Resources (ALTENER), Energy in Transport (STEER) or Integrated Initiatives**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

3. **[If a. or b in Q3] Which programme (and sub-programme) sectors should be given more focus and priority?**
    a. [Open text]

Please justify your opinion [Open text]

4. **The relevance/impact of the IEE programme could be increased by defining multi-annual key actions per programme field (currently key actions are defined on an annual basis)?**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

5. **The relevance/impact of the IEE programme could be increased by raising the budget per project, that is, giving more priority to larger projects (whilst the total budget of the programme stays equal - thus having less projects)**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

6. **The relevance/impact of the IEE programme could be increased by extending the duration of the projects selected (currently limited to 3 years)?**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

7. **If you see any other ways to change the programme that might increase the relevance/impacts, please indicate which?**
    a. [Open text]

8. **Allocating 25 per cent less budget to the IEE programme as a whole would probably reduce the positive impacts by more than 25 per cent**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

9. **Allocating 25 per cent more budget to the IEE programme as a whole would probably increase the positive impacts by more than 25 per cent**

a. I strongly agree
b. I agree
c. I disagree
d. I strongly disagree
e. Don't know

10. **The current budget of the IEE programme is sufficient to attract the promotion and dissemination projects with the greatest potentials**
    a. I strongly agree
    b. I agree
    c. I disagree
    d. I strongly disagree
    e. Don't know

11. **Do you see any new relevant focus areas or key actions for projects targetting non-financial, non-technical barriers which is not included - or does not have much focus - within the current IEE programme, but which could improve the future programme if more budget was allocated to allow for its proper inclusion?**
    a. [Open text]

    Please justify your opinion [Open text]

Excel-based survey, ELENA project managers

Introduction mail

Dear [Name]

Deloitte Consulting is responsible for a combined final evaluation of the Intelligent Energy Europe II Programme (2007-2013) and ex-ante evaluation of a successor to the Intelligent Energy Europe II Programme. You are invited to participate in the evaluation, because we have been informed, that you are the contact person for one of the five signed projects which are included in our survey on the ELENA programme.

We therefore kindly ask you to fill out the questionnaire attached to this mail.

Please note that most questions have multiple choice options. You can view the options by clicking the selecting the green cell and clicking the small arrow which appears to the right.

Finally, in order to ensure your contribution to the evaluation process, we kindly ask you to complete this questionnaire and return it to lreenberg@deloitte.dk at the latest by April 1, 2011.

Should you have any questions or comments, please do not hesitate to contact us at:

lreenberg@deloitte.dk (Lars Reenberg) or +45 3093 5497

menevoldsen@deloitte.dk (Martin Enevoldsen) or +45 2220 2174

Kind regards,

Introduction

Dear [Name]

Thank you for taking the time to complete this questionnaire - we value your input.

The questionnaire consists of four parts:

- The first part focuses on the general conditions for participation in the ELENA programme

- The second part are questions related to your experiences so far

- The third part is about the expectations and challenges of your participation

- The last part consists of general questions related to the programme

Before proceeding to the questionnaire, we would like you to fill out the background information below, so we are sure to have the correct contact details.

[Enter contact information]

General conditions

12. **What were your reasons for applying for ELENA project development services and funding (as opposed to undertaking the entire project on your own or on the basis of national assistance and funding)?**
    Please rank the reasons (Rank 1 being the most important reason). You can also indicate which reasons are not relevant, and these should not be ranked
    a. Lack of local financial resources for energy investment projects
    b. Lack of involvement and/or funding by national authorities
    c. Lack of expertise with respect to financing of energy projects in local government
    d. Lack of available personel for energy projects in local government
    e. Lack of technical energy expertise in local government
    f. Other (please specify)

13. **How did you discover the ELENA programme?**
    a. [Open text]

14. **When and by whom was project idea developed that forms the basis of the ELENA contract ?**

a. We developed the project ideas on our own before we discovered the ELENA opportunity
b. We developed the project ideas on our own, after we discovered the ELENA opportunity
c. We developed the projects ideas in cooperation with the EIB after we discovered the ELENA opportunity

Comments [Open text]

15. **What are your main reasons for committing to the energy initiatives and related investments stipulated in the project?**

    Please rank the reasons (Rank 1 being the most important reason). You can also indicate which reasons are not relevant, and these should not be ranked

    a. Because initiatives and investments of this maginute are necessary in helping the local government to achieve its climate policy ambitions
    b. Because they are supposed to be the most cost effective means for CO2 reductions in the local area
    c. Because they have a good pay-pack in terms of saved energy costs compared to investments
    d. Because they give rise to a number of other local environmental benefits (reduction of city air pollution, etc).
    e. Because they are expected to stimulate local growth and employment
    f. Other (please specify)

16. **How would you describe the climate policy ambitions of the local municipalty/local government(s) committed in the project?**

    a. Extremely ambitious, among the forerunners in Europe
    b. Very ambitious, among the forerunners in own country
    c. Climate policy ambitions like the average local government in own country
    d. Not very ambitious, no focus on CO2 reductions until recently

17. **Would the project development have been initiated without ELENA funding of project development services?**

    a. Yes, but with a delay
    b. Yes, but with a smaller budget
    c. Yes, but with a smaller budget and a delay
    d. No
    e. Don't know

If the project would have been delayed without ELENA funding, how long do you think the delay would have been?

a. [Open text]

If the budget would have been smaller without ELENA funding, which activities would have been left out?

a. [Open text]

18. **Have you already applied for other EU funds or national funds for the project?**
    a. Structural and Cohesion Funds (e.g. ERD and INTERREG funds)
    b. The RTD Framework Programme (FP7)
    c. LIFE +
    d. Low interest loans or guarantees from EIB or other EU financial institutions
    e. Other EU funds (please specify)
    f. Other national funds (please specify)
    g. No other funds

19. **Do you plan to apply for other EU funds or national funds for the project?**
    a. Structural and Cohesion Funds (e.g. ERD and INTERREG funds)
    a. The RTD Framework Programme (FP7)
    b. LIFE +
    c. Low interest loans or guarantees from EIB or other EU financial institutions
    d. Other EU funds (please specify)
    e. Other national funds (please specify)
    f. No other funds

Experiences so far

20. **What is your opinion on the requirements and difficulties in obtaining ELENA project funding?**
    a. Extremely demanding, much more demanding than appropriate
    b. Very demanding, more demanding than appropriate
    c. Appropriate
    d. Very undemanding, less demanding than appripriate
    e. Extremely undemanding, much less demanding than appropriate

What are the main difficulties in obtaining ELENA project funding?

a. [Open text]

21. **How much time and resources did it require to turn your local project ideas into a project description that could form the basis of an ELENA contract?**
    a. Much time and resources - a major burden (e.g. more than 6 months)
    b. Some time and resources - a moderate burden (e.g. between 3 and 6 months)
    c. Little time and resources - a small burden (e.g. less than 3 months)

What were the greatest challenges in turning your local project ideas into a project description that could form the basis of an ELENA contract?

a. [Open text]

22. **Are there any criteria for ELENA projects which you either do not find appropriate or would modify? (requirements for leverage factor, time limit of CAPEX investments within 3 years, pay-back conditions etc.). If any, please specify.**
    a. [Open text]

23. **Is the project progressing as planned, and what are the main reason for delays, if any?**
    a. [Open text]

24. **In general, what are the most important lessons learned from your project so far? (positive and negative)?**
    a. [Open text]

25. **Have you shared information and experience or facilitated dissemination of the project's results?**
    a. Yes
    b. No, but we expect to do it
    c. No, and we do not expect to do it

Please elaborate on you plans for dissemination of the results?

a. [Open text]

Expectations and challenges

26. **How difficult do you think it will be for the municipality/local government to realise the planned investments?**
    a. Not difficult, will be realised
    b. Difficult, but will be realised
    c. Difficult, but most of it will probably be realised
    d. Very difficult, will probably only be realised to some extent
    e. Very difficult, will probably not be realised

What are the main difficulties in realising the planned investments??

a. [Open text]

27. **How difficult do you think it will be to keep within the time frame of the planned investments?**

a. Not difficult, will keep well within timeframe
b. Difficult, but will keep within timeframe
c. Difficult, there will probably be a minor delay
d. Very difficult, there will be a considerable delay
e. Very difficult, will not be realised in a foreseeable future

28. **Are local financial ressouces already reserved for the energy investments that have to be carried out as part of the project?**
    a. Financial resources are reserved for the entire investment
    b. Financial resources are reserved for a large part of the investment
    c. Financial resources are reserved for some initial energy investments
    d. No financial resources have yet been reserved for the energy investments

29. **In your opinion, what are the major risks that the targets of the project will not be achieved? Please rank the risks (Rank 1 being the most important). You can also indicate which risks are not relevant, and these should not be ranked**
    a. Insufficient financial resources in local government
    b. Difficulties in attracting private investors or voluntary support
    c. Difficulties in obtaining loans, credits and guarantees from financial institutions
    d. Technical problems in realising the projects and its potentials
    e. Shortage and limited capacity in the supply chain
    f. Local opposition to the project (caused by physical planning, construction and property right issues, etc.)
    g. Lack of human resources with sufficient competences in project management, engineering etc.
    h. Insufficient experience with the organisation and legal construction of PPP (Public-Private Partnership) projects
    i. Other (please specify)

General questions

30. **How much added value do you expect from the different parts of the ELENA project development services?**
    a. ELENA support in terms of additional personel
    b. ELENA support for technical studies and other background studies
    c. ELENA support for the preparation of calls for tender
    d. ELENA support for financial organisation and structuring
    e. Access to ELENA and EIB networks (that can be used for political influence and other purposes)

Scale:

a. High added value
b. Some added value
c. No added value ELENA support

Comments [Open text]

31. **What do you think will happen with your project organisation after the ELENA project development services terminate?**
    a. [Open text]

    Will the project development services have provided you with sustainable benefits, e.g. through new skills, etc.?
    a. [Open text]

32. **How much added value do you expect from the different parts of the ELENA project development services?**
    a. Providing loans and/or financial guarantees for certain initial energy technology or energy infrastructure investments
    b. Providing loans and/or financial guarantees across the entire energy investment programme of ELENA projects
    c. Providing grants for certain initial energy technology or energy infrastructure investments
    d. Providing grants across the entire energy investment programme of ELENA projects

    Scale:

    a. Would stimulate investments and would be an appropriate extension of ELENA
    b. Would stimulate investments, but should be taken care of by other institutions
    c. Would not stimulate investments significantly

    Comments [Open text]

33. **Do you see any other areas than those covered by the existing ELENA programme where there is need for project development services and to which the programme might be extended (e.g. extending the project development services provided for small and medium-sized investments)?**
    a. [Open text]

34. **Do you have any recommendations on how to improve the ELENA facility and the IEE programme as a whole??**
    a. [Open text]

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