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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 24.11.2009

COMMUNICATION FROM THE COMMISSION

**Document accompanying the
Commission Decision laying down criteria and measures for the financing of commercial
demonstration projects that aim at the environmentally safe capture and geological
storage of CO₂ as well as demonstration projects of innovative renewable energy
technologies under the scheme for greenhouse gas emission allowance trading within the
Community established by Directive 2003/87/EC of the European Parliament and of the
Council**

**Impact assessment
{COM(2009) XXX}**

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1. Procedural issues and consultation of interested parties

1.1. Introduction

This document summarises the analysis carried out for the Commission Decision on the modalities for disbursement of the 300 million EU allowances (EUAs) reserved under the New Entrants' Reserve of the Greenhouse Gas Emission Trading System for support of demonstration of carbon capture and storage (CCS) and innovative renewable energy technologies, by Article 10a.8 of Directive 2009/29/EC, the revised Emissions Trading Directive.

1.2. Organisation and timing

The consultation was conducted in a manner proportionate to the type and scope of the implementing Decision based on the scope agreed with the Impact Assessment Board. Other services were informed and consulted via a Task Force comprising the SG and DGs TREN, RTD, ECFIN, REGIO, RELEX, EMPL and ENTR. Meetings of the Task Force took place on 25 March 2009 and 27 May 2009. In addition, DG BUDG was consulted on the budgetary status of the 300m EUAs and the Legal Service on interpretation of a range of issues relating to Article 10a.8.

1.3. Consultation and expertise

When compiling this document and conducting the analysis, the Commission drew on expertise from the European Investment Bank (EIB) regarding management of the revenue from allowances, from the JRC on the technologies and thresholds appropriate for demonstrating CCS, from DG RTD on the technologies and thresholds appropriate for demonstrating renewable technologies, as well as input from the relevant technology platforms (mainly proposals for the SET-Plan Industrial Initiatives) from the renewables and CCS industry, and from relevant industrial associations. A stakeholder meeting was held on 29 June 2009 comprising representatives from renewables industries, CCS industries, NGOs and other stakeholders, to which Member State (MS) representatives were also invited to enable them to hear stakeholder views. For finalisation of the analysis, consultancy assistance from PricewaterhouseCoopers was used.

Above all, the Commission has consulted with the delegations of MSs represented in the Climate Change Committee, on the basis of meetings with Working Group 3 of the Committee, on Emissions Trading, held between February 2009 and 2 February 2010.

Member States and stakeholders were most concerned about the treatment of CCS versus innovative renewable technologies; the approach to monetisation of allowances; the number of calls and distribution of support between the calls; and the question of whether an EU or MS-based approach should be adopted for selection and award.

1.4. Implementation of comments of Impact Assessment Board

In response to the comments of the Impact Assessment Board the following additions and elaborations were included in the report:

- Clarity that the major effects expected from demonstration will be after 2020, and so the demonstration projects are not expected to make a substantial contribution to the CO₂/RES targets for 2020 (Section 5)

- Greater detail on management issues, including in particular the role of the EIB (Section 6.7 and Section 6.10.4)
- Greater detail on potential use of the Risk Sharing Finance Facility (Section 8)
- More detail on the rationale for two rounds of calls, their timing and size (Section 6.3)
- Integration of the ex ante financial evaluation of the options for administering the system (Section 6.10)
- Handling of the carbon price uncertainty (Section 7)

2. Objective

The objective of the exercise is specified in the framework legislation, Directive 2009/29/EC, and is to design and implement a programme using the 300m allowances reserved in Article 10a.8 of Directive 2009/29/EC to promote the early demonstration, consistent with the provisions of the Directive, of CCS and renewable energy technologies and thus to contribute towards early commercialisation. In line with the provisions of Article 10.a.8, further advice on their interpretation by the Commission's Legal Service, and the political requests of the European Council in its March 2007 and June 2008 conclusions, the programme should ensure that:

- Allowances are allocated in principle by 31 Dec 2015 (although allowances can be auctioned after 2015 and support can be disbursed after 2015)
- A maximum of 12 CCS plants plus innovative renewables are in place, with a first tranche of CCS plants in operation by 2015 as requested by the European Council
- Support is made conditional on verified avoidance of CO₂ emissions
- Support is provided via Member States
- The selected projects represent a wide range of technologies in geographically balanced locations
- Projects are selected on the basis of objective and transparent criteria that include requirements for knowledge-sharing
- No more than 15% of allowances is awarded for any individual project
- In principle, no more than 50% of the incremental costs of a project are financed (although support from the NER is compatible with Community financing (in particular financing from the European Economic Programme for Recovery (EEPR) and the Structural Funds) and with MS co-financing (so long as compliant with State aid rules).

3. Legal constraints on mechanism of financial support

There are two main options for using the allowances: as non-returnable hard investment or as loan guarantees. However, the use of the funds for provision of loan guarantees is in tension with the requirement that support be dependent on verified avoidance of emissions. (A guarantee would be called on only where the project revenue was insufficient to repay any loan, which would be the case only where a project had failed to deliver on its objectives (i.e. less CO₂ had been avoided than anticipated).) For this reason, the 300m allowances are mainly intended to provide non-returnable grant support.

The Commission in its policy options paper of November 2008, 'Financing large-scale demonstration of emerging energy technologies', opposed free allocation of allowances to projects on the basis that it went against the trend in the revised ETS of phasing-out of free allocation in the power sector, and risked windfall profits to operators if the allowance price was higher than expected (an issue considered in more depth in Section 7 below, where the same conclusion is reached). Furthermore, support in allowance terms is suboptimal in that the value of the support declines when the carbon price falls. These issues are further discussed in Section 7.

4. Main policy issues and analysis

The basic policy framework is defined in Article 10.a.8 of Directive 2009/29/EC. The remaining issues to be determined are outlined below, the main options identified, and a proportionate analysis provided which explains the choice of option. Note that because the issues are related to the implementation of a decided policy, and not to formulation of the policy itself, the environmental, social and economic implications are largely determined by the framework imposed by the basic legislation (which specifies the level of financial support, specification of technological categories to be covered, etc). In the following, options are thus assessed rather with regard to ensuring effective implementation of the basic legal text.

In developing the framework in which the allocation of the allowances will be undertaken it is important to strike the right balance when specifying the detailed rules of the process. Although there is a rationale for being as specific as possible at an early stage (and this may be appropriate where well understood projects/outcomes are being selected under standardised processes), this is not appropriate when undertaking a competitive process relating to novel or first-of-a-kind projects or technologies, and/or where the likely market response is hard to assess, as is the case here.

At this stage, there is limited detailed information on how many projects may be put forward, how developed or mature these projects are (and hence whether they will be able to partake in the process, or in which call), their total and relative costs, and their distribution between the various technologies and sub-technologies.

It is therefore proposed that while the Decision should clearly set out the overall objectives and the principles and the framework in which the detailed process and rules will be determined, it should be recognised that in several cases further detail must be specified in the context of a call for proposals, based on further work to gain a more thorough understanding of the 'market' for the support mechanism.¹

¹ Note that while the public procurement Directives do not explicitly apply to this policy (see Section 6), the proposed approach is consistent with the process undertaken in public procurements where the overall objectives, general criteria and outline of the framework are set out in the Contract Notice (published in the Official Journal of the European Union) with more detailed information outlined in the Invitation to Tender/Invitation to Participate in Dialogue.

5. Apportionment of support from the NER between renewables and CCS

There are effectively two options:

- Allocation of support ex ante in fixed proportions (for instance 50:50)
- No ex ante split, but rather the proportion of allowances determined by the demonstration needs in the sector and the quality of the individual projects.

Ex ante split

An ex ante split in fixed proportions was advocated by some Member States and stakeholders on the following grounds, each argument addressed in the comment below:

- *in terms of technology readiness, renewables have the greatest potential to deliver urgently needed emissions reductions in the EU.*

With regard to meeting the targets for CO₂ reduction for 2020, the NER demonstration technologies are not relevant, as none is likely to be commercialised before 2020. All of the technologies that will be supported, whether CCS or RES, have been identified on the basis that they can make substantial contributions towards reduction of CO₂ in the period beyond 2020.

- *the EU has set itself a specific target for renewables for 2020, which is not the case for fossil fuel technologies.*

Again not relevant for demonstration, the aim of which cannot be to facilitate achievement of the 2020 targets, since the technologies are unlikely to be demonstrated effectively before 2020.

- *that CCS already benefits from considerably more EU subsidy than do renewables, from the Structural and Cohesion Funds, the Economic Recovery Package and the Research Fund for Coal and Steel (RFCS).*

Under the 6th Framework Programme for Research (FP6) RTD, of the energy budget around 15% went to CCS and more than 45% to RES (total FP6 RTD 461 M€). For FP7 RTD+TREN, the numbers are similar. No projects in the area of CCS are currently funded under the RFCS (in any case, the RFCS has an annual budget for coal-related projects of less than 10 million euros). To our knowledge no Structural and Cohesion funds have been reserved by the MS for CCS projects (although Poland is considering this); RES projects on the other hand are substantially financed. For the European Energy Plan for Recovery, CCS is awarded €1.05bn and wind €65m.

- *Although renewables benefit from feed-in tariffs, these are financed by the Member States rather than the EU. Coal has for decades been the beneficiary of relevant national subsidies.*

EU coal production has benefited from subsidies, but the price of coal is determined by the international market and these subsidies do not affect coal deployment in electricity production and are not a source of support for CCS demonstration. Feed-in tariffs and other national support schemes for which RES demonstration projects are eligible would be a relevant source of demonstration support, as would any similar support schemes established for CCS. Any such Member State support will be taken into account for the individual project to avoid overcompensation.

- *giving additional funds to the large energy companies undertaking CCS projects will only perpetuate the current oligopolistic situation of the EU energy market, in a context where the EU seeks to minimise market concentration, and to enhance liberalisation and flexibility (in terms of both competition and security of supply).*

Support under Article 10.a.8 of the ETD is open to all companies of whatever size that are capable of carrying out effective demonstration of the technologies specified in the Article. All support granted must be compatible with State aid rules, and thus specifically designed to minimise distortion of competition. Requirements for knowledge sharing will further contribute to this objective. Moreover, several of the companies that are likely to receive support are active both in the CCS and RES area; the amount of support that companies will receive is not dependent on the CCS/RES split. While a broad range of sectors will be eligible, transmission network operators per se will not be eligible, as legal advice is that the funded projects must be directly concerned with energy generation.

- *Without an ex-ante split, the CCS projects will take the majority of the allowances.*

The approach taken is to focus on demonstration needs in each sector and to fund those needs in so far as there are good projects available. It is not possible to determine at this point how much NER funding will go to each sector. (See next section for a more detailed response on this issue.)

Moreover, there is no legal support in the Directive text for any particular proportion of split, and no obvious rationale by which the proportions would be calculated. Thus any split would be likely to result in a prolonged debate over numbers, unconstrained by any underlying rationale.

Approach based on demonstration needs

The second option requires identification of the demonstration needs in the sector. After consultation with the Member States, the principles underlying the legislator's selection of technologies for support were elucidated as follows. Eligible technologies must:

- be innovative in relation to the state of the art of the particular technology category (in terms of overall efficiency, cost reduction, emission reduction and overcoming technological challenges of the particular technology (e.g. construction- and-design related, materials used, process-related);
- not yet be commercially available on a large scale basis, but sufficiently mature for demonstration at pre-commercial scale (niche market technologies with small scale market deployment should be considered to be at pre-commercial scale)
- require public support for demonstration due to their economic risks; present technical risks albeit that there is a good chance of successful demonstration;
- be demonstrated at a scale at which no further technical problems are expected from further upscaling to ensure the potential for a commercialisation of the technology within reasonable time; and
- have significant potential for cost-effective CO₂ reduction both in the EU and globally.

Furthermore, there are legal constraints on the eligibility of technologies. Article 10a(8) states that "Up to 300 million allowances ... shall be available ... to help stimulate the construction and operation of ... demonstration projects of innovative renewable energy technologies, in the territory of the Union". Legal advice is that the only projects to be constructed and operated with the help of those allowances are projects whose exclusive purpose is to produce energy. Thus projects for manufacturing components (for example) are not eligible, either for CCS or for renewables.

These criteria then need to be applied to the CCS and renewables sectors to identify the technologies, numbers of projects and thresholds for support. For CCS, a considerable amount of work had already been done in the context of the European Technology Platform for Zero Emission Fossil Fuel Power Plants (ETP-ZEP)², which had identified the main capture technologies, fuel types and storage options to be demonstrated. This work was supplemented by consideration of the industrial applications to be demonstrated, and with suitable thresholds was sufficient to identify a portfolio of demonstration projects.

For renewables, there are a further two options:

- identify sub-technologies and thresholds explicitly in the Decision
- broadly indicate the eligible sectors and allow an open criteria-based approach within these.

The second option simply defers the decisions to be made in the first to a later stage in the process. On the first option, the decisions are made in a clear proposal on which Member States and industry are given the opportunity to comment, thus maximising transparency. Thus the first option has been chosen. Given the broad consultation on the proposal there is no serious risk of missing a promising technology ready to make an application for demonstration funding towards the end of 2010. However, the annex of eligible technologies may be revised prior to the second call to take account of technology developments.

To implement the first option, the principles on eligible technologies were applied to a large number of potential project types from at least four different sources:

- proposals for the SET Plant Industrial Initiatives
- inputs received from renewables industry and associations
- results of road mapping exercises financed in the past through Framework Programme, and
- knowledge within the Commission.

For each sub-technology, the number of projects needed for effective demonstration, and the appropriate demonstration threshold, were also considered.

This led to the identification of two groups of demonstration technologies which meet the principles, and which are set out in Annex I of the Decision. From these, an apportionment between CCS and renewables can be determined as follows:

2 <http://www.zero-emissionplatform.eu/website/index.html>

- only projects in the categories identified are eligible, and if projects of sufficient quality are available, the minimum number of projects in each group (CCS and renewables) will be funded;
- if funding the minimum groups for each category results in oversubscription of the available funds, the funding requirement for each group would be reduced in the same proportion (that is, the cost to the NER of the minimum groups would determine the effective split, which would be scaled down to fit the available finance). The reduction would take place by deleting the projects that represent the least cost-effectiveness, expressed as tonnes CO₂ avoided/€ for CCS, and clean energy produced/€ for RES, until the funding requirement matches the available funds (see below on project selection);
- if funding the minimum groups for each category results in under-subscription of the available funds, each group can be increased by adding additional projects representing the best value for money. Again, the increases would be in the same proportion (so the groups would benefit in the same proportion from increased finance).

While the European Council requested demonstration of up to 12 CCS projects, and this is reflected in the text of Article 10a.8, we have tried to avoid the situation where 12 CCS projects will be funded and RES is left with the residue. The approach was rather to identify minimum demonstration needs for each sector in collaboration with stakeholders. Thus for CCS the minimum demonstration portfolio identified is not 12 CCS power plants, but 6 CCS power plants (two each for oxyfuel, post-combustion and IGCC) and two industrial applications (from refineries, cement, and steel production). The total of 8 plants is needed to provide a reasonable scope to demonstrate also the range of options in other parts of the chain (principally storage, where depleted hydrocarbon reservoirs and saline aquifers need to be demonstrated). Thresholds are set at the lowest level at which the technology can be effectively demonstrated. A similar approach has been taken to defining the demonstration requirements in each of the main renewables categories, leading to 34 specific technological sub-categories, where because of the absence of 'chain' issues (i.e. in CCS, the need to link capture, transport, storage and fuel type in a single chain, where each unit has its own demonstration requirements) only one project is proposed to be funded within each category.

On this basis, it is difficult to estimate how much funds will be taken by CCS and by RES, even assuming that sufficient good projects are available for all categories. Capital costs are available for all projects, but operating cost estimates for renewables demonstration are not available. To determine the call on the NER two other pieces of information are required: (a) the proportion of costs would be eligible for funding ('relevant costs'), which in accordance with the approach proposed (see section 6.2 below) would require comparison with a suitable reference plant for each technology category; and (b) the proportion of relevant costs (for renewables in particular) that are already funded via national support schemes such as feed-in tariffs and green certificates (which vary from Member State to Member State). It is not possible to estimate these reliably for the range of technology types and potential locations, and so it is not possible to assess how much funding would go to each category.

However, the policy-relevant question is rather whether the minimum demonstration needs for each sector have been properly identified. Although care has been taken to

make the choice of technologies as comprehensive as possible based on current information, and it is regarded as robust for a first call, new technologies may emerge in the period until the second call proposed for finalisation by 2014 (see below on design of the competitive selection process). The Commission will continue to monitor the demonstration needs in the CCS and renewables fields, and if needed will amend the Decision before the second call for proposals to update the list of eligible technologies.

In conclusion, the second option provides for a reasoned division of support between CCS and renewables based on the demonstration needs for each sector, and thus is chosen in preference to an ex-ante split.

6. Selection of projects

The default approach for awarding public money to procure a public good (in this case, demonstration of a range of technologies) is to institute a competitive selection process. It is assumed that the default itself does not need to be justified; rather any departure from it requires justification. Such departure may be required, for instance, to ensure a technical or geographical diversity as required by the terms of the legal basis. In order to maximise the technical quality of the demonstration, any such departures should be the minimum required to meet the legal basis constraints.

6.1. Responsibility for selection of projects and award of support

Prima facie, the options are:

- selection of projects at EU level: projects would be submitted with agreement of Member States, and the comitology Decision would set out project categories, thresholds, numbers of project in each category to be funded, exclusion, selection and award criteria. The Commission or an agent of the Commission would select projects.
- selection at national level: MSs would select at national level the projects they wish to fund, with submission for review at EU level.

Selection at EU Level

Selection at EU level would bring several advantages. It would provide:

- a coherent and efficient EU-wide selection process
- a simpler process for cross-border projects
- the same selection process for all applicants (including timing of award decisions)
- visibility and commitment of the EC in CO2 reduction.

It would also avoid the demonstration programme being dictated by nationally-oriented issues and policies. Member States participation in the process should be maximised, however, so as to ensure that the projects selected are projects that the MS is willing to co-finance if necessary. This could be ensured by making MSs responsible for evaluating project eligibility and giving them the prerogative to determine which eligible projects they wish to propose for further evaluation (see Section 6.5). In any case a high level of MS involvement will also be necessary to ensure a smooth implementation of the projects at the national level.

Selection at national level

Two main variants of this approach have been proposed. The first is that allowances are distributed among Member States according to some formula, leaving the MS to determine which projects are funded. However, the basis of distribution would be contentious and there is no obvious mechanism by which a balanced demonstration portfolio would be ensured. Such an approach was not the intention of the legislator. Had it been so, no mechanism such as Article 10.a.8 would have been required. Rather, the 300m allowances would have been distributed among MSs according to the mechanism already set out in Directive 2009/29/EC for auctioning revenues, with the MSs free to use the allowances for demonstration as they wish thereafter.

The second variant proposed is a pre-allocation of particular project categories to particular Member States, together with an explicit level of available funding for the categories concerned from the NER. Member States would then select projects at national level within the category concerned. There are a number of potential issues with this approach. The obvious problem is the potentially protracted nature of the negotiations needed to arrive at such an agreement, given that this would entail not only agreement on an ex-ante division of allowances between CCS and RES but on a division between Member States. A second point is that the allocation could be inefficient, in that the best European project of a particular technology may be in a Member State that is not awarded that technology slot. Thirdly, it is not sensible to allocate support to project types at EU level in the absence of any competitive process giving clarity on costs. Fourthly, the national selection process is not clear: a competition in each MS would be very time-consuming and expensive; but if the competitive requirement is relaxed, the quality of the demonstration will suffer. Finally, it is not clear how this alternative would ensure a uniform selection process across the EU, since national rules and procedures would in large part determine the projects to be selected.

For these reasons, selection at national level was not proposed.

Involvement of the European Investment Bank

As part of an EU-level selection process, EIB involvement would have very substantial benefits given the Bank's expertise in assessing projects both from a commercial and technical point of view. The analysis performed by the EIB in deciding whether to loan to a project has much common ground with that required in determining the suitability of a project for NER financing, in particular the technical and financial due diligence. For this reason, the use of the EIB in selection of projects was considered as one of the options for managing the process (see section 6.10) and because of its advantages as set out there, was chosen.

The EIB will act as an agent for the Commission in performing financial and technical due diligence, and in selection of projects according to the principles set out in the Decision (see section 6.7). It will also be responsible for managing the monetisation of allowances (see section 7).

Detailed arrangements for selection, centralised management and disbursement, will be made in a Memorandum of Understanding with the EIB, to be negotiated on the basis of the Decision so as to be in place by the time of adoption of the Decision.

Legal provisions applying to selection and award

The question arises which legal provisions might apply to the selection of projects and award of support at EU level. The public procurement Directives³ do not apply as those Directives are addressed to Member States. The Financial Regulation does not apply, because the allowances do not form part of the Community budget (the Commission is simply designated under Article 10.a.8 of the ETD and the comitology Decision to administer the award of support from those allowances).⁴

3 The so-called Public Procurement Directives refer to the Directives 2004/17/EC and 2004/18/EC of the European Parliament and of the Council. The articles mention in the text refer to Directive 2004/18

4 The philosophy, structure and the mechanisms of the Emissions Trading Directive support the position that the monetary values or revenues from eventual auctioning of the allowances remain within the Member States' budgets. This is confirmed by the fact that the unused part of the NER reverts to the Member States (Article 10a (7) of the Directive).

Thus the design of the competitive process must be foreseen in the Decision, and further specified in the guidelines for applicants of the future calls for proposals. It should, however, take due account of the principles established in the mentioned instruments, and should justify any significant departure.

Disbursement of support must be done via Member States, and is also not governed by the Financial Regulation but rather by the financial procedures of each Member State concerned, again because the 300m allowances do not form part of the Community budget.

Given that neither the public procurement Directives, nor the Financial Regulation apply, the Decision must outline a process respecting the underlying principles of the Public Procurement Directives of:

- Equal treatment;
- Non-discrimination;
- Mutual recognition;
- Proportionality; and
- Transparency.

The budgetary principles in the Financial Regulation are:

- Principles of unity and budgetary accuracy;
- Principle of annuality;
- Principle of equilibrium;
- Principle of unit of account ;
- Principle of universality;
- Principle of specification;
- Principle of sound financial management; and
- Principle of transparency.

The competitive process for selection of projects set out in the Decision is such as to implement the principles of the Public Procurement Directives. However, significant effort will need to be devoted to the development of appropriate, detailed and robust supplementary material, and consideration given as to what level of detail will need to be given to potential bidders at what stages of the process. This will be done in the context of the call for proposals.

With regard to the budgetary principles in the financial regulation, budgetary management will be a matter for each Member State consistent with its own budgetary procedures.

The practical logistics of who will carry out the selection process at EU level are considered in Section 6.10 below.

6.2. Determination of the relevant costs for co-funding

These must be determined within the constraints imposed by the legal basis and by the rules on State aid. Article 10.a.8 of Directive 2009/29/EC provides that the 300m allowances are available to support ‘construction and operation’ of demonstration projects, thus establishing that in principle both investment and operating costs are

eligible, although a determination of the proportion of each costs that is attributable to demonstration is required. Recital 20 of Directive 2009/29/EC requires that the operator ensure co-financing of, in principle, at least 50% of the relevant investment costs. Thus unless justified, no more than 50% of the investment costs, plus the operating costs (for the first 10 years of operation), can be financed from the NER.

Substantial co-financing by the Member State is likely to be needed to ensure viability of a demonstration project. Such co-financing will require notification and State aid approval by the Commission prior to its implementation. The definition of relevant costs has been developed in consistency with State aid rules and is as follows:

- For CCS demonstration projects relevant costs mean investment costs which are borne by the candidate plant due to the application of CCS net of the net present value of the best estimate of operating benefits and costs arising due to the application of CCS during the first 10 years.
- For RES demonstration projects relevant costs mean extra investment costs which are borne by the candidate plant due to the application of an innovative renewable energy technology net of the net present value of the best estimate of operating benefits and costs arising during the first 5 years compared to a conventional production (e.g. a conventional power plant or a conventional heating system) with the same capacity in terms of effective production of energy.
- Investment costs means cost of investment in land, plant and equipment. It may also relate to investment in technology transfer and operating licenses of knowhow provided (i) the intangible asset can be regarded as a depreciable asset, (ii) it is purchased on market terms⁵ and (iii) it remains in the establishment of the recipient for at least 5 years. If it is sold during those five years, the yield from the sale must be deducted from the relevant costs and all or part of the amount of aid must, where appropriate, be reimbursed.
- The net operating costs and benefits shall be based on the best estimate of operating expenses borne by the applicant regarding production costs (e.g. potential fuel costs savings, maintenance and administration costs) and take into account any additional benefits resulting from support schemes even if they do not constitute State aid within the meaning of Article 87 (1) of the EC Treaty (e.g. green certificates and feed-in tariffs); avoided costs (e.g. related to the need to possess tradable permits under EU ETS); and existing tax incentive measures (e.g. involving capital allowances).

6.3. Number of calls for proposal, and timing and size of any second call for proposals

A major part of the political context for Article 10.a.8 is the European Council's aim, expressed in its conclusions of March 2007 and June 2008, to have up to 12 demonstration projects for CCS in operation by 2015. Since for any project to be operational by 2015 would require a decision on funding from the NER by 2011 at the latest, and it would not be possible to have more than one call for proposals in

⁵ This implies that the transaction has to be carried out at arm's length, where the candidate plant aims to pay the lowest price possible.

that timeframe, the most direct implementation of the European Council's wish would be to have a single call.

There are, however, a number of considerations in favour of at least a second call.

These are:

- Redressing technological imbalance. Technological balance will be ensured to some extent by the specifications on eligible technologies and the number of projects in each that can be funded; but the timescale for developing proposals for a single call (which would require submission of project proposals in late 2010) is short, and there may not be projects of sufficient merit to cover the range of eligible technologies. This could be particularly relevant for renewables, where there may be technologies which are not currently mature but which could benefit from an award in 2013 or 2014. In any case the European Council conclusions applied only to CCS and not to renewables.
- Redressing geographical imbalance. Geographical balance could be promoted in a single call, but the balance of advantage is in favour of a first purely competitive process and a second modified competitive process to adjust geographical imbalance (see section 6.4 for the arguments supporting this conclusion).

These considerations are regarded as strongly favouring at least a second call. While more than one additional call could perhaps be argued for in the light of certain timing discrepancies discussed below, simplicity and manageability argue for only one additional call. This is the proposed approach.

With regard to timing:

- The aim of early demonstration argues in favour of a second call following the first as closely as possible given the above constraints. There will not be any significant learning advantages from a delayed second call, as it will in any case be awarded before the first call projects are in operation.
- The technological balance criterion could be met for CCS by a second call following closely after the first, say in 2012. For renewables, however, it would be preferable to wait longer within the constraints of the 2015 deadline for availability of allowances, so as to enable the maximum number of technologies to come to maturity.
- On geographical balance, the longer the period before the launch of the second call, the better the chance that a wide range of Member States can develop proposals of a suitable quality, and so the greater the competitive pressures in the second call and the wider the potential geographical distribution.

An appropriate balance in time is a matter of judgement. The current policy intention is to finalise the second call for the award of support by end 2013, but this can be reviewed if there are indications when the second call is launched that a different timescale is appropriate.

With regard to the size of any second call, although it will benefit from any unused allowances from the first call, a guaranteed allocation should in any case be made. The exact proportions are a matter of judgement. As with timing, the main advantage of maximising finance for the first call is to have as many projects as possible in early operation; the main reason for providing substantial finance for the second is to adjust for geographical or technological under-representation. During consultation,

several Member States argued that the funds explicitly reserved for a second call should be substantial, arguing that (a) certain technologies may be in a less good position to take advantage of the first call (particularly RES technologies) and (b) since the second call is the only mechanism effecting geographical distribution, the explicit reserved finance for it should be substantial. Proposals ranged from a 50/50 split to an 80/20 split. The Commission is proposing a split of 200m allowances for the first call and 100m for the second. Reserving any more funds for the second call would risk under-funding the first.

The aim to fund as diverse a portfolio of technologies as possible is a central motivation for having a robust second call. This has some theoretical backing. Baker et al⁶ argue that as the uncertainty on carbon prices is large, targeting demonstration effort on reducing the marginal cost of abatement (MAC) at one particular carbon price is potentially inefficient. Ensuring a diverse portfolio of technologies is funded will help ensure that the MAC is reduced across the range of potential future carbon prices, and so is an efficient strategy. Note that several RES technologies are as mature as some CCS technologies, and thus projects respecting the criteria established (innovativeness/replication potential/quality) will be funded in a first call regardless of their technology. The second call is mainly a safeguard to ensure the technological diversity that the Commission hopes will in any case be achieved in the first.

With regard to the administrative costs of the process, the size of calls has little impact. On any of the options for managing the process, the administrative costs are broadly composed of two elements: (i) preparation of any documentation required (i.e. drafting any tender requirements and evaluation method), the scope of which is by definition under the control of the Commission; (ii) actual evaluation, the size of which depends on the market response to the tender(s). The first element is unlikely to be significantly impacted by the split between the first and second round: documentation is required for both rounds irrespective of their relative size. The evaluation element could in principle be affected: it is possible that allocating more allowances to the second round would increase the population of bidders by giving more time for developers of innovative technology to qualify for the process (i.e. moving out of the R&D phase); and as such the costs for administering the process could be higher (more bids and more technologies to evaluate). It is however not possible to quantify the impact on the administrative cost until the population of projects and their maturity is better known; and that might not be achievable until any call is issued for the second round. In any case it is not expected to substantially change the volume of work required as the scope of technology is already large.

6.4. Geographical balance

There are three options:

- To have one call but to impose a ceiling on support that can be given to a MS (either maximum number of projects, or maximum proportion of allowances).
- To have two calls, with no formal role for geographical distribution in first call, and the second call designed so as to rectify any geographical imbalance.
- A combination of two calls plus a ceiling.

⁶ Baker, Clarke, Shittu, 2008: "Technical Change and the marginal cost of abatement" *Energy Economics* 30

The first option alone may not in practice significantly increase the chances of projects from a wide range of Member States to be funded, as certain Member States may not be able to optimise the quality of their proposals in time for a single call. In the Commission's view the second option would promote synergies between geographical balance on the one hand, and competition and quality of demonstration on the other. One prerequisite of this approach is that the second call should be robustly funded: this issue was considered in the previous section and robust funding will indeed be ensured. Its potential risk is that by imposing geographical restrictions, the competitive pressures in the second call will be limited, but this is mitigated by the fact that the interim period before the second call should allow the maximum number of MSs to develop projects of high quality.

Given that two calls are desirable for other reasons (see section 6.3 above) the third option is to apply a ceiling approach across both calls. Given the clear requirement in the Emissions Trading Directive to ensure an overall geographical balance, it has been decided to combine the two-call approach with a requirement that no more than three projects may be funded in any Member State, and at least one project must be funded in each Member State (subject to the availability of suitable proposals).

6.5. The need for eligibility assessment and the scope for MS involvement in project submission

Eligibility assessment would be performed using the basic criteria that a project must be one of the requisite technology types, and must meet the thresholds and project requirements established. It is also appropriate to allow Member States to determine whether they wish to support a project for inclusion in the further selection process. This is particularly the case given the restrictions on NER/EEPR support, and the corresponding likelihood that supplementary finance will be required from Member States in order for a project to be viable. But MS support will also be relevant in other than the purely financial area, for instance in ensuring timely implementation of the CCS Directive 2009/31/EC to allow speedy permitting of storage sites.

6.6. Requirements for Front End Engineering Design (FEED) studies

There is evidence for CCS in particular that cost estimates are very uncertain until detailed engineering design work is done. (The UK estimated a cost uncertainty of around 40% for the applicants for its demonstration programme.) An award based on estimates of this uncertainty is possible, but would incentivise projects to price in the uncertainty so as to avoid the risk of a funding shortfall, thus inflating costs to the public purse, although this will be offset by a competitive process in which cost is a major factor.

The UK in its national CCS demonstration competition chose to require Front End Engineering Design (FEED) studies from projects to improve cost estimates (to an estimated uncertainty of around 10%). The Commission considered imposing a requirement for a FEED for all submitted projects, but in cost and time terms this is unrealistic. The cost of a FEED study for a CCS project is in the region of €30-50m, and requiring projects to fund this would introduce a substantial disincentive. The obvious option is to refund a portion of the cost of any FEED studies required for unsuccessful projects,⁷ but this cannot be done from the 300m allowances, as it

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This option minimises the call on public funds: for a project which receives NER co-funding a FEED is a reasonable up-front investment; for one which does not, a loss; and hence to address the disincentive only the latter case need be considered.

would constitute support for projects where there would be no avoidance of CO₂ (since the project would not go ahead). It is also not reasonable to impose this burden (of financing FEEDs) on Member States.

The Commission will rather request more limited studies which nonetheless provide sufficient information for relatively robust cost estimates.

6.7. Process for selection of projects

It is proposed to split the project assessment into two components:

- **Basic quality and deliverability** i.e. an assessment of the likelihood of success of the project. This would be based on several criteria such as the robustness of the project in terms of technology maturity, the state of development of the project (e.g. planning), the regulatory environment in the hosting MS, the financial standing of the developers, the level of involvement of MS, the delivery of the funding package, and the adequacy of bidders internal resource (staff and advisers experience)
- **Cost per unit performance** i.e. the measure of how expensive a unit of environmental benefit (in terms of CO₂ avoided or clean energy generated) is. The unit of cost would be specified on the basis of costs to the public purse, and calculated in a financial model that developers would have to submit with their bids (as further specified in the tender process).

The Commission considered including a third element in the evaluation process, which would be an assessment of the innovativeness of a project, as the basis for a judgement of value for money.

However, it is extremely difficult to define robust and objective criteria for measuring project quality and to manage their application across the range of potential project types. A base level of innovativeness is ensured by the specification of the technologies to be funded, project requirements and thresholds. Annex I to the Decision is already specific in these terms, but further characterisation can be provided as necessary in the calls for proposals. In conjunction with this, an assessment of basic quality and deliverability, if sufficiently robust, will ensure that any project that passes will meet the demonstration objectives of the programme, and which point cost becomes the determining factor.

6.7.1. Basic quality and deliverability

A robust basic assessment is provided by the EIB in the form of its standard financial and technical due diligence, and this is required of all projects, covering inter alia the technical scope of a project; its costs; its financing; its implementation; its operation; its environmental impact; and its procurement procedures.

6.7.2. Cost per unit performance

Rather than a simple least-cost approach, cost per unit performance was chosen to reflect the aim of reducing the overall costs of the technologies in question by 2020 and so bring forward their commercialisation. Thus in principle the project with the lowest cost per unit performance in each technology subcategory will be selected for funding.

There is a range of possible choices for the cost parameter itself: the total incremental cost of the project as defined under 'relevant costs'; the request for funding from the NER; or the total public funding including support from Member

States and Community instruments. Choosing the requested NER funding would maximise the demonstration value that can be obtained from use of the NER (by encouraging projects and Member States to maximise the proportion of the eligible costs that they would bear). On the other hand, it would introduce a subsidy competition between Member States, with projects encouraging their states to maximise national funding so as to increase their chances in the competition; and it may disadvantage some Member States with more limited capacity to support projects. The choice of total public funding would avoid this effect while still stimulating the maximum private-sector contribution, and for this reason, broadly that approach is chosen. To avoid an unfair advantage for projects funded under the EEPR, any EEPR funding will be taken into account in determining the cost metric, but the basic principle is that for successful projects, the combined NER/EEPR award shall be half the total requested public funding.

6.7.3. Selection of projects

For all technologies, within each technology subcategory, the one with the lowest cost per unit performance (as defined in section 6.7.2) which passes the financial and technical due diligence described in section 6.7.1 will be selected for support.

For CCS, a straightforward approach based on competition within capture technology categories would provide a sub-optimal solution, as it would not ensure that other parts of the CCS chain, and in particular saline aquifer storage, are appropriately demonstrated. For this reason, all projects will be ranked together, and the highest-ranked projects chosen subject to the constraints that (a) at least one and at most three projects will be funded from each category, and (b) at least three projects should use saline aquifer storage, and at least three, hydrocarbon reservoir storage.

6.7.4. Adjustment of criteria for second call

The criteria may require adjustment for the second call in order to address technological and geographical under-representation. The precise adjustments could include limiting eligibility for the second call in to particular technological categories or combinations, or to particular Member States or geographical regions. Alternatively, the award criteria could be amended to weight projects that increased geographical or technological diversity. Based on experience with the first call, any necessary adjustments would be made by amendment of the Decision, including amendment of the Annexes as necessary as foreseen in Section 5 above.

6.8. Knowledge-sharing

The critical issues on knowledge-sharing concern what information should be shared, how it should be shared and who it should be shared with. Onerous requirements for knowledge-sharing may limit a competition by discouraging participation from project developers who feel there is a risk to their existing intellectual property rights (IPR) or that the benefits of advancing their technology will not accrue to them. However, knowledge-sharing is a pre-requisite of the program and essential to ensure value for the public funding of advancing the demonstration of innovative technologies. Furthermore, a broader objective of the program is to support the wide-scale deployment of clean energy technologies, and this will be less likely if the advances made by project developers are not shared more broadly.

The Decision establishes as an eligibility criterion that at a minimum, all project operators, and also consortium members, suppliers and subcontractors who stand to

receive substantial benefit regarding the development of their product or service from the public finance provided, must share certain basic information with other project operators, public authorities, NGOs and the public, and research institutes. The information is specified in Annex II to the Decision, and will cover information on cost, project management, environmental impact, health and safety, and technical set up and performance at the level of technology block. On these issues, there is a consensus between those who possess the information and those who request it. Further requirements beyond that are controversial and over-specificity at this stage may damage the competitive process, by imposing requirements stronger than the market will bear.

Two participants in the ETP-ZEP program have proposed that COM reserves licensing diffusion rights to ensure that licensing of the technologies developed or demonstrated within the program is facilitated. The requirements speak only of licensing at 'reasonable commercial rates', which is appropriate as it will be difficult to value the incremental intellectual property (IP) created (beyond the pre-existing IP Rights held by the project developer) by the demonstration program or to attribute it to a specific funder. For these same reasons it will be difficult for any external funder of a project to claim ownership of the incremental IP created by the program. The proposals are designed to facilitate the ultimate objective of the program, which is to support the demonstration of CCS and innovative renewables projects and ultimately their wide-scale deployment both within the EU and other countries.

It will indeed be welcome if project developers have plans to enter new markets in emerging economies and thereby support the goals of the program. However, while information on these plans may help inform the selection process, establishing a mechanism (such as march-in rights) to enforce deployment plans would be complex and difficult, and this approach is not proposed.

With regard to practical organisation of the exchange of information, project developers are unlikely to have the necessary capacity, and so central management of the exchange would seem appropriate. The DG TREN/RTD Project Network on CCS will provide an appropriate framework for CCS, together with the relevant European Industrial Initiatives for CCS and renewables. This will ensure consistency of the type of information and its presentation.

To ensure that the knowledge-sharing commitments made by the winning bidders are implemented in practice, award of support will be conditional on compliance with knowledge-sharing requirements.

The knowledge-sharing requirements will be further specified in the call for proposals.

6.9. Funding conditionality

Article 10.a.8 requires that funding be conditional on avoided CO₂. For renewables, this would naturally be construed in terms of clean energy produced, and for CCS, stored CO₂. For both categories of project, awards will be made on the basis of projected annual CO₂ avoidance/clean energy production over the course of the first ten years of operation of the project.

The Commission's legal advice is that it is not possible to make funding conditional on procedural milestones (such as completion of various construction stages) as an alternative to conditionality on verified avoidance of CO₂. While such milestones can

be introduced in addition, the conditionality on verified avoidance of CO₂ is a necessary minimum.

6.10. Evaluation of options for selection and award, and financial implications

The following is an assessment of four proposed approaches to the allocation of NER allowances for support of CCS and Innovative Renewable demonstration projects. It sets out the main stages under each and provides an indicative timetable for each process based on the assumption that the decision on funding from the first call should be made by the end of 2011 at the latest.

For Option 2, the processes set out cover only the first proposed round. It is envisaged that a broadly similar allocation process would be undertaken for the second round, although there could be amendments to the thresholds and the maximum number of projects to be funded in each category to enable achievement of a balance of technologies, and geographical distribution. Clearly, the detail of these amendments will not be determined until the outcome of the first round is confirmed.

The four proposed alternatives are as follows:

- 1a Full Commission option: the Commission would recruit specialist staff and/or allocate existing resource to this project. All functions would be undertaken by the Commission, except possibly for some very specialist advice;
- 1b Partial Outsourcing to advisers: the Commission will set up a core team to manage the process, appoint legal, technical and commercial expertise to whom it would outsource a substantial element of the process;
- 2 Member State responsibility for selection and award;
- 3 European approach with assistance from the European Investment Bank acting as agent of the Commission

6.10.1. Full Commission option (Option 1a)

The main issues regarding this are:

- the lead time required to identify, transfer and/or buy in the necessary scale and scope of resource, which may not be compatible with the tight timescales envisaged;
- as the NER300 will be a subject to a very variable levels of activities between 2010 and 2015, it is unlikely to be practical for the Commission to fully staff the project or to be able to staff it sufficiently flexibly to deal with the expected peaks and troughs of activity (e.g. the evaluation phase of the project is likely to be extremely resource intensive as potentially several hundreds of project may need to be evaluated over a limited period of time); and
- The Commission may not be able to find the specialist resources needed in the numbers required, on appropriate terms or at an acceptable cost, and such an approach could result in a substantial increase in fixed costs and a lack of flexibility.

This option is therefore not considered to be practical in this instance and so has not been costed. It is worth noting that most public authorities make use of external advisers, to a greater or lesser extent, for all complex procurements; this is the case

even in sectors where contracting authorities have considerable experience of undertaking recurring complex procurements.

6.10.2. Partial Outsourcing (Option 1b)

This option requires the Commission to appoint external advisers in Q4-2009 and build an internal capable client team (estimated to be of 6-10 persons potentially through secondments of existing staff or external secondments). A more detailed requirement for external advisers' resource is detailed in the next section. The main issues regarding this option are:

- The cost of advisers on a daily basis may be high relative to the first option but they will be a more flexible resource which can be ramped up or cut back depending on activity levels and need for support;
- Advisers could be appointed relatively quickly; and
- This is a tried and tested approach for complex procurements of this nature.

This solution is likely to be the most practical for a Commission-based selection approach, given the timetable, albeit that the Commission still needs to develop an internal team with the necessary experience to appoint and manage several advisory firms. A detailed estimate of the various phases of action is provided at Annex I of this document, together with their resource implications. Based on the assumptions outlined there, the administrative costs for COM are likely to be in the region of €18m.

6.10.3. Member States performing selection according to criteria agreed in the comitology Decision (Option 2)

This proposal has been suggested by a number of Member States. It would require an ex ante division of allowances among Member States, who would then be responsible for calling for proposals, evaluating and selecting according to the methodology laid down in the decision.

Of the tasks outlined in Annex I of this document for Option 1b, the only tasks remaining to COM in this case would be preparation of documentation for the initial call and for the detailed submission for proposals and evaluation. Based on the calculations in Annex I, this would entail a total cost for the first call of around €8m.

6.10.4. European approach with assistance from the EIB acting as an agent of the Commission (Option 3)

Under this proposed approach, the EIB, acting as agent for the Commission, would undertake the following tasks:

- Task 1: Tendering, evaluation and proposal for decision (2010 to 2015)
- Task 2: Monetisation, liquidity management and disbursements of proceeds of 300m EUAs.

The analysis below assumes that:

- a total number of 180 projects (30 carbon capture and storage (CCS) projects and 150 renewable energy projects (RES)) are reasonably expected out of the two rounds of tenders proposed;
- the EIB is requested to carry out the tasks between 01.01.2010 and 31.12.2025, as detailed in Annex 2 of this document.

This analysis reflects the current understanding of the proposed EIB involvement in project selection and management of allowances and is subject to the conclusion of legal documentation in terms satisfactory to the Commission and the EIB and the approval by the EIB governing bodies of the documentation thereof.

Task 1: Tendering, evaluation and proposal for decision (2010 to 2015)

This task is broken down into several sub-tasks shown in the Tables below:

Task 1.1. Assist EC in preparation of 1st round of tender documents

Description	
a	Prepare ToR for consultant to be hired by EC for tender programme
b	Assist EC in supervision and quality control of consultant work, ensuring EIB agent role is clearly defined.

Task 1.2. Manage on behalf of EC the NER 300 first round of tenders

Num	Description
A	Develop the work programme for managing the NER 300 and agree key milestone deliverables.
B	Organise recruitment campaign to select the necessary personnel to implement the work programme
C	Shortlist and select the necessary specialist consultancy organisations
D	Develop the management and project processes which will be necessary to manage personnel, consultancy organisations and third party stakeholders in implementing a project of this magnitude
E	Prepare the competition launch plan and define necessary processes and documentation relating to notifications, eligibility, workshops and information seminars.
F	Receive applications from member states and manage communication with bidders (Q & A, incomplete dossiers, request for clarifications)
G	Recruit consultants required for the technical due diligence of all proposals
H	Evaluate tenders and select candidate projects
I	Financial due diligence on final financial plan
J	Produce regular progress reports
K	Prepare candidate project recommendations and develop contract documents
L	Submit recommendation of award to the EC.

M Prepare final sign off report

Task 1.3. Assist EC in preparation of 2nd round of tender documents

Description
a Assess outcome of first round of tender versus the initial objectives
b Assist EC in preparation of NER 300 2nd round of tender – tender programme and tender documentation package.

Task 1.4. Manage on behalf of EC the NER 300 second round of tenders

Num	Description
A	Develop the work programme for managing the NER 300 and agree key milestone deliverables.
B	Organise recruitment campaign to select the necessary personnel to implement the work programme
C	Shortlist and select the necessary specialist consultancy organisations
D	Develop the management and project processes which will be necessary to manage personnel, consultancy organisations and third party stakeholders in implementing a project of this magnitude
E	Prepare the competition launch plan and define necessary processes and documentation relating to notifications, eligibility, workshops and information seminars.
F	Receive applications from member states and manage communication with bidders (Q & A, incomplete dossiers, request for clarifications)
G	Recruit consultants required for the technical due diligence of all proposals
H	Evaluate tenders and select candidate projects
I	Financial due diligence on final financial plan
J	Produce regular progress reports
K	Prepare candidate project recommendations and develop contract documents
L	Submit recommendation of award to the EC.
M	Prepare final sign off report

Task 2: Monetisation, liquidity management and disbursements of proceeds of 300m EUAs

This task is broken down as follows:

Task 2.1. Monetisation of NER 300s – 1st phase

Num	Description
a	Defining and co-ordinating the structure of carbon operations including opening of portfolios, configuration of instruments, and setting up the mark to market, accounting, reporting etc
b	setting up a contract with the EC to govern the program and the way payments are expected
c	define a counterpart selection process for any counterparts (this is something needed both at inception but also for each spot transaction; moreover, if we were using more counterparts rather than a counterpart coordinator then multiple bidding for the forward sales will be required as well as the related contracts)
d	amendment of the master contracts with the selected counterparts to allow carbon credits
e	execution of daily trades including due diligence on the prices. The sales could be both forward and spot. For the spot sales, definition of appropriate time-intervals before award date and execution process is required following the market and selecting the appropriate timing of it.
f	booking of daily deals and related payment instructions both in the front and back office
g	co-ordination on the valuation of the hedges for collateral reasons
h	definition and follow-up of the calculations to provide the amount of grant available as a function of the executed forward and spot sales

Task 2.2. Monetisation of NER 300s – 2nd phase

Num	Description
a	Definition and approval of a follow-up strategy for the remaining 100 m of allowances in view of ensuring a fair geographical distribution of the grant distribution and a refinement of grant amounts.
b	Selection of a hedging coordinator or execution of biddings to select the hedging counterparts for the 100 m
c	Execution of sales so as to minimise market impact in the period including

the management of counterparts inquiries

- d booking of deals and related payment instructions both in the front and back-office
- e Definition and follow-up of the calculations to provide the amount of grant available as a function of the executed forward and spot sales in the second phase

Task 2.3. Liquidity management and payment of grants

Num	Description
a	segregated management of the 300 m allowances including the setting up of proper liquidity management to capture the return on the excess money. The return on the re-investment of the proceeds of the monetization requires an ad-hoc reporting to the EC and the transfer of the return to the EC after deduction of the expenses at the end of the management period
b	definition of guidelines for a reinvestment strategy for the excess money collecting appropriate information and setting up appropriate internal coordination to pay to MS according to payment schedules in the award decisions.

Human resources

In order to perform Task 1, EIB would employ the following resources:

EIB Tender evaluation team - N° staff/year	2010	2011	2012	2013	2014	2015
Tender evaluation manager	1	1	1	1	1	1
Technical experts	2	4	4	4	4	4
Contract Administrator	1	1	1	1	1	1
Legal Advisor	1	1	1	1	1	1
Support Staff	1	1	1	1	1	1
Total	5-7	7-10	7-10	7-10	7-10	7-10

An outline job description of the various posts is given below:

The tender evaluation manager will have overall responsibility for establishing the work programme, recruiting and managing the EIB tender evaluation team, developing a flexible approach for the contracting of the necessary consultancy organisations, managing & supervising the tender evaluations, and reporting to the EC. The 4 main technical experts will bring the spread of sector expertise required to adequately cover all the technologies listed in the Annex I of the Draft Decision. They will be in charge of: assisting in the preparation of the NER 300 tender documentation and of tender evaluation methodology; selecting and managing consultants, participating in tenders evaluation and the preparation of tender evaluation reports, and ensuring consistency and quality of the tenders' evaluation.

The contract administrator will administer up to 50 consultancy services contracts. This includes preparation of tenders in line with EIB internal rules, coordination of the tender process, budgetary planning and control. The legal advisor will provide all legal advice as regards the implementation of the NER 300 programme and the management of the 300m allowances including all legal advice in respect of the procurement procedure, including review of tender documents, legal advice on responses to bidders' questions, legal input in the handling of potential complaints by bidders, supervision of consultancy services contracts and their interpretation and all legal advice in respect of the implementation of the monetisation scheme.

The support staff will provide the required administrative and secretary support to the EIB tender evaluation team. At this stage there are large uncertainties concerning the Consultancy budget, as it would depend on the number of projects to appraise, the final bid evaluation methodology and depth of due diligence required, and the nature and complexity of projects that will be submitted. Consultant resources are tentatively estimated in the range of 2 to 7 man-months per appraisal.

Task 2 will be performed by the EIB's Treasury team.

Price summary

Preliminary estimates (pending conclusion of a formal agreement) are that the cost of EIB involvement would be as follows:

Task 1:

In line with market practice, and based on the above understanding of the detailed tasks to be performed, the EIB would charge roughly as follows:

- An annual fee of €2.6-3.8m for the period 2010 to 2015;
- An annual fee of €0.38-0.53m for period 2016 to 2025;
- A variable fee of €150,000 per CCS appraisal;
- A variable fee of €45,000 per RES appraisal.

Task 2:

In line with market practice, the EIB would charge as follows:

- For NER monetisation, 10-20 basis points;
- For asset management, 2-12.5 basis points depending on volumes of assets, tenor and brief.

6.10.5. Implications for the Community Budget

In line with the approach normally taken to the administration of large-scale financing programmes, the natural approach to funding the administration of the NER 300 is to use income generated from the management of the revenues generated from the allowances. Income from the revenues generated is likely to be substantially in excess of the estimates made for the administrative costs of the proposal, and the majority of the revenues (those not used for administration) will accrue to the Member States.

Given this approach, there are no implications for the Community budget. The work of liaison between the Commission and the EIB on managing the process can be done within existing Commission resources.

6.10.6. Conclusion

Given the advantages of centralising evaluation and monetisation in a competent Community institution, and the streamlined nature of the approach outlined under Option 3, it is proposed that this route be adopted.

7. Monetisation of allowances

Arrangements for monetisation are substantially dependent on the approach to determining the available financial resource supported by the NER 300m, and that issue is thus discussed below.

7.1. Making good use of the available EUAs

The uncertainty of the carbon price matters in two ways:

- the value of the EUAs available for co-financing is affected;
- the benefit for the operator of the forgone need to surrender EUAs for stored emissions is affected.

The optimal funding mechanism would be to provide support in the form of a 'contract for difference' between a fixed co-financing rate (per tonne CO₂ avoided) determined by competition, and the carbon price. However, a contract for difference cannot realistically be guaranteed, because as the carbon price falls, the size of the funding gap increases and the value of the NER pot (which is to plug that gap) decreases.

Allocation of awards to the first set of projects must be made by 2011. Three main options have been identified to deal with the uncertainty of the carbon price:

Option 1: Monetise the allowances centrally before the award decisions are made (i.e., monetise the 200m for the first tranche by 2011 and the 100m for the second tranche by 2013.)

Assessment: the value of the pot is fixed.

Option 2: Award the value of allowances in trust for projects.

The intention is that this would encourage MSs or projects prepared to put a higher value on the allowances.

Some examples may make the issues clearer:

- Two projects with a funding gap of €300m. One project values the allowances at the then market value (say €15); but the other values them at twice the market value, anticipating future gains (€30). The first will bid for the value of 20m allowances, the second for the value of 10m allowances. The second project's higher expectations of future value give it a competitive advantage in the selection process.
- A project with total eligible project costs of €1bn and an operator contribution of €300m. The notional funding gap is €700m, of which at most €500m can come from the NER. The MS agrees to guarantee to the project a carbon price of €30 (twice the market value of €15). The operator then bids for the value of 23.3m allowances, which at market value constitute financing of €350m allowances and so within the allowable range. The effective MS contribution would have to be determined by a stochastic option pricing formula and could be several hundred million euros; its actual contribution can range from negative (i.e. a profit, if the allowance value is higher than the guarantee), to €700m.

Regarding the first, it is dubious that any project sponsor will in practice value allowances at significantly above the market price (considering the limited discretion

that would be available on when to auction allowances). Regarding the second, it is unclear that MS would provide a higher effective contribution on this basis than on straightforward cash terms (i.e. whether the Member State would be more willing guarantee a carbon price of €30 than to provide a cash contribution of equivalent value).

Option 3: Assign support to projects in cash terms, award allowances sufficient to cover the cash value of support at the current market price.

On this option there are three possible scenarios:

- If the average carbon price over the period of auction is equal to the market price at the moment of award, then the cash value of the award will be met.
- If the average carbon price is higher than the market price at the moment of award, then there will be surplus allowances once the cash value of the award is met which would be returned to the NER and used to fund additional projects
- If the average carbon price is lower than the market price at the moment of award, there will be a shortfall in funding which has to be borne.

The disadvantage of Option 3 is that the downside risk must be borne by either the project sponsor or the Member State. This is not a reasonable burden to impose on the Member State. If it is imposed on the sponsor, it will be priced into bids in an untransparent way.

For these reasons, the first option is chosen, with central management of the allowances and disbursement of revenues.

8. Handling of project risk

Project risk is the risk that the project will fail technically and so not achieve its objective (avoiding CO₂). The placement of the project risk depends on how NER funding is allocated to projects.

There are two options:

- Funding committed in principle end 2011 but given to projects only when CO₂ avoidance is actually verified (after 2015). Projects fund capital expenditure by borrowing against future income
- (A portion of) funding provided up-front together with a dissolution clause requiring reimbursement if no/less CO₂ is avoided.

Under the first option, the commercial lender to the project bears the project risk as a credit risk. Under the second option, the project risk becomes a credit risk for public funds.

The supposed advantage of the second option is that it would provide more demonstration value from the NER. The potential problem associated with it is the difficulty of recovering funds (which would be the responsibility of Member States, given their responsibility for managing implementation of the projects). This would argue for the first option.

This option would have the consequence that the project risk will be borne as a credit risk by any entity lending to the project. This credit risk cannot be supported from the 300m allowances (for instance by setting aside a portion of allowances to cover project default), because Directive 2009/29/EC stipulates that award of support must be conditional on verified avoidance of CO₂. This is an inflexible arrangement, and so the approach taken is that where the Member State guarantees the return of any excess funding, part or all of the NER 300 award can be paid up-front.

Even where the MS does not provide such a guarantee, however, there is an existing instrument available for handling the credit risk imposed on the operator, which is the Risk Sharing Finance Facility established by the EIB/the Seventh Framework Programme for Research (FP7). The RSFF can be used to make available loan finance for projects selected under the NER mechanism for which no up-front allocation of funds is given. Legal advice is that replenishment of the RSFF is not possible using NER allowances, because the capital allocated to the RSFF, which is used effectively to guarantee loans, would be called on for projects which did not in practice avoid CO₂, thus breaching the requirement that support is dependent on verified avoidance of CO₂. However, under the current RSFF, CCS and innovative renewable energy demonstration projects which comprise investments in research, development and innovation would in principle be eligible. Such projects could be supported with RSFF loans for which the EC contribution to the RSFF could be used to partially offset the risk of default.

CCS and innovative renewable energy demonstration projects applying for RSFF finance, in the context of the allocation of allowances from the NER for their support, would be subject to the usual selection and eligibility criteria as defined in the RSFF agreement. This would include a decision on the use of the EC contribution for risk coverage by the EC for each project proposed by the EIB to the EC for RSFF finance, and the selection of projects on a 'first-come-first-served' basis (demand

driven instrument). It will also include a limitation of the loan to a maximum of €300m, in compliance with current rules.

Given that the budget allocated to the RSFF is limited (max €1bn for 2007-13), the RSFF Steering Committee will monitor the use of the fund closely to ensure that other fields are not penalised.

9. Outline of policy monitoring and evaluation

Regarding evaluation of projects, the award decision will stipulate funding conditional on specified project milestones and financial support will be provided by MSs based on achievement of these milestones. Member States will be responsible for management of the projects, as the Commission does not have the authority to manage the implementation of funding from the NER, which is the property of the Member States. Monitoring and follow-up of individual projects is thus for Member States, but the Decision provides for reporting on implementation to the Commission.

Regarding evaluation of implementation of the demonstration programme as a whole, the target disbursement programme is that 67% of allowances will be allocated in the first call, by end 2011, and the remaining 33% (including any unspent allowances from the first call) will be allocated by end 2013.

The remedial actions at the disposal of the Commission are limited given that it will not be responsible for the management and of the contractual arrangements with the beneficiaries of the grants and is not the disbursing authority. Regular reporting by the Member States is the most feasible way for the Commission to monitor the projects.

As for the success of the demonstration programme in promoting commercialisation, evaluating this is a very long-term task. The following potential information sources on the implementation of CCS and renewables technologies in general in the EU have been identified:

- reporting under the Renewables Directive 2009/28/EC
- reporting under the CCS Directive 2009/31/EC
- the work of the CCS Project Network established by DGs RTD and TREN⁸

On the basis of this information, the Commission will aim to publish in 2020 a report on the extent of deployment in Europe of the technologies funded under the demonstration programme, together with the change in the cost of deployment of the technologies. This will be updated as appropriate in future years.

8

Part of the remit of the Network is to follow progress in CCS deployment in Europe and worldwide.

10. Relation with other initiatives

The following approaches are proposed:

European Economic Programme for Recovery

€1.05bn is available for CCS demonstration for seven projects, one in each of seven countries, with a maximum contribution of €180m per project. €180m is likely to be substantially less than 50% of the incremental costs of CCS, and in order for projects to be viable, they should be eligible also for funding under the ETS, on the same basis as any other project, and taking into account any finance received from the EEPR.

Communication on Financing CCS in Emerging and Developing Countries

Neither the NER300 nor the EEPR are open to third countries and so there is no direct link between the European demonstration initiatives and the Communication.

Strategic Energy Technology Plan (SET-Plan) and Communication on Financing Low Carbon Technologies

The Financing Communication focuses on the financing required to achieve the objectives of the 2007 Strategic Energy Technology Plan. The Plan identifies a number of technologies (including CCS, solar, wind, bioenergy, but not (e.g.) geothermal) each of which will be supported by a European Industrial Initiative, pooling public and private finance so as to achieve a number of research objectives.

The SET Plan covers demonstration but the Communication has a wider remit:

- It covers other technologies than the ETS, and covers not only demonstration but also pilot-level and basic research initiatives
- Its aim is to develop innovative financing instruments adapted to the range of goals (ETS is basically traditional grant financing)
- The SET-Plan and the financing communication has a longer timescale – not only 2020 but also 2050.

Thus the NER 300 demonstration programme will contribute to the demonstration aspect, but the SET-Plan financing communication will build on that (and the EEPR) so as to meet the range of SET-Plan goals.

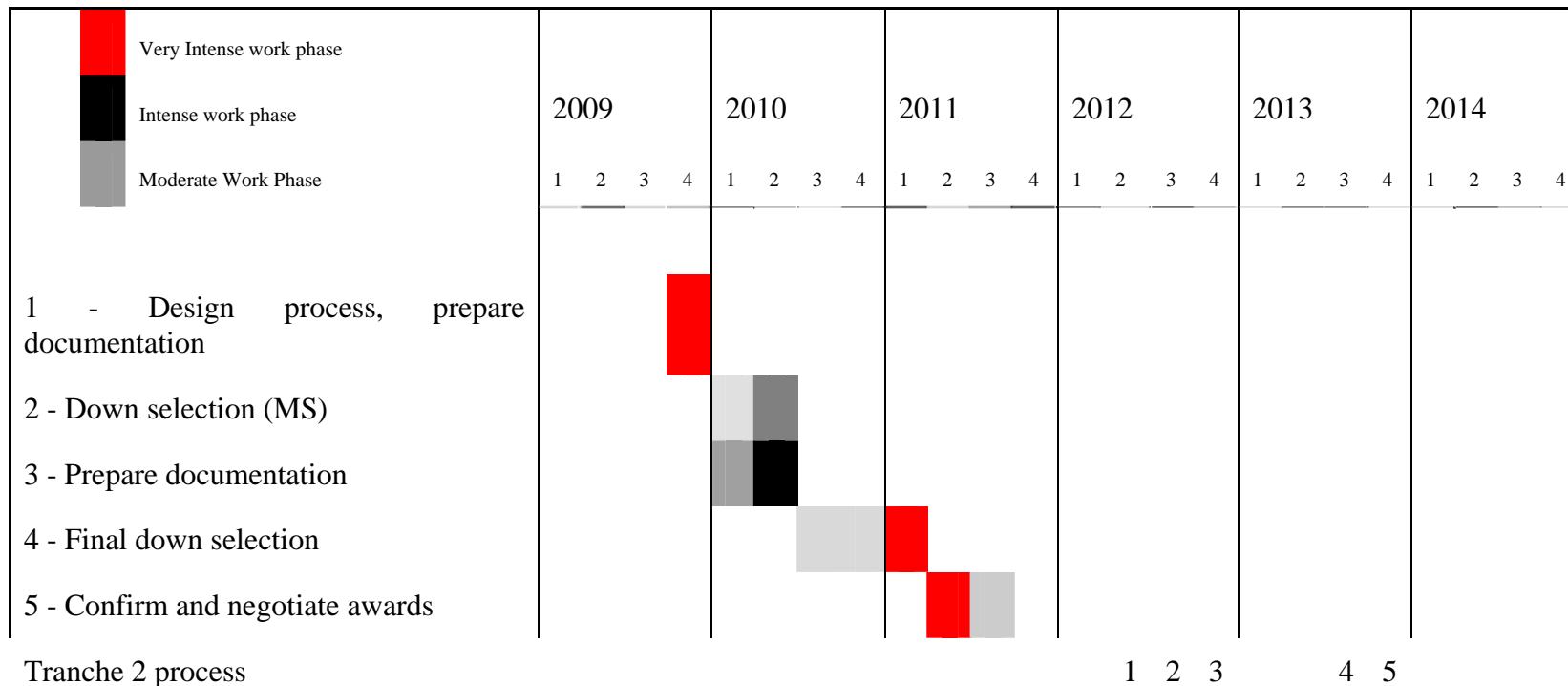
The European Fund for Energy, Climate Change and Infrastructure ("Marguerite Fund")

The Marguerite fund of €600m was established by the EIB and other European public financial institutions at the end of 2009, to provide equity or mezzanine finance to energy projects. The fund could be a source of equity finance for some project developers. As this form of finance is distinct from grants as provided by the EEPR or the NER, projects with equity from this fund could also obtain grant funding from the EEPR and the NER.

Annex I: Initial estimate of external resource needs (Partial Outsourcing)

Below is an estimate of the level of resource required by the Commission to implement the disbursement process. At this stage only an estimate is possible as the number of expressions of interests, outline and detailed bids is unknown at this stage. As stated in the Proportionate Analysis (section 6.10), 5 main phases of

work are expected for the first call with the following high-level view of a potential timeline and relative intensity of each phase. Note that the following was prepared in mid-2009 for illustrative purposes and does not necessarily correspond to the actual timing of the relevant phases.



Potential tasks for each phase for the first call:

Work Phase	Possible Tasks	Estimated external resource (man-month)																																																			
1 - Design process, prepare documentation	<ul style="list-style-type: none"> Finalise policy objectives and elaborate operational objectives for the competition process, undertaking technical and commercial analysis Identify risks and mitigation Support COM in setting up a strong governance structure Perform and report ad-hoc analysis from stakeholder queries: MS, climate change committee, MEPs, other Directorates etc. Draft OJEU notice Develop detailed evaluation criteria for call, draft down selection methodology and test methodology with team expertise of project population. An iterative process that will require multiple adjustments to fit each technology grouping and policy objectives. Consult on methodology with MS and review accordingly Prepare and finalise prototype Invitation to Submit Outline Solution (ISOS) documentation and evaluation toolkit. Invitation to be issued and down-selection to be done by MS Outline requirements for contractual agreement between Member States and sponsors 	<table border="1" data-bbox="1375 316 1962 600"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">2009</th> <th colspan="4">2010</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Commercial</td> <td></td> <td></td> <td>2</td> <td>39</td> <td colspan="4">10</td> </tr> <tr> <td>Technical</td> <td></td> <td></td> <td></td> <td>30</td> <td colspan="4">10</td> </tr> <tr> <td>Legal</td> <td></td> <td></td> <td></td> <td>9</td> <td colspan="4">2</td> </tr> </tbody> </table> <p data-bbox="1375 671 1680 703">Total: 102 man-months</p> <p data-bbox="1375 778 2002 847">Key uncertainty: level and number of stakeholders requests</p>									2009				2010				1	2	3	4	1	2	3	4	Commercial			2	39	10				Technical				30	10				Legal				9	2			
	2009				2010																																																
	1	2	3	4	1	2	3	4																																													
Commercial			2	39	10																																																
Technical				30	10																																																
Legal				9	2																																																
2 - Down selection	<ul style="list-style-type: none"> Assumed that detailed evaluation will be undertaken by Member State with some support and overview/collation of results by COM Exchange of information during down-selection, 	<table border="1" data-bbox="1592 1185 1709 1329"> <thead> <tr> <th colspan="2">2010</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> </tr> </tbody> </table>								2010		1	2																																								
2010																																																					
1	2																																																				

	<ul style="list-style-type: none"> including portfolio coverage analysis, feedback/learning Perform and report ad-hoc analysis from stakeholder queries 	<table border="1" data-bbox="1377 240 1711 416"> <tr> <td>Commercial</td> <td>6</td> <td>15</td> </tr> <tr> <td>Technical</td> <td>6</td> <td>18</td> </tr> <tr> <td>Legal</td> <td>6</td> <td>9</td> </tr> </table> <p>Total: 60 man-month over 6 months, mostly in Q2 2010</p> <p>Key uncertainty: number of projects, MS resourcing and capabilities, success of Phase 1 (clarity of evaluation methodology)</p>	Commercial	6	15	Technical	6	18	Legal	6	9																					
Commercial	6	15																														
Technical	6	18																														
Legal	6	9																														
3 - Prepare documentation	<ul style="list-style-type: none"> Perform and report ad-hoc analysis from stakeholder queries Draft final evaluation methodology and test methodology with data collected from down selection. This is an iterative process that will require multiple adjustments to fit each technology grouping and policy objectives. Stipulate grant agreement and contractual structure Prepare, finalise and issue Invitation to Submit Detailed Solution (ISDS) documentation Draft detailed evaluation toolkit 	<table border="1" data-bbox="1402 807 1827 1158"> <thead> <tr> <th colspan="2"></th> <th colspan="4">2010</th> </tr> <tr> <th colspan="2"></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Commercial</td> <td></td> <td></td> <td>36</td> <td>3</td> <td></td> </tr> <tr> <td>Technical</td> <td></td> <td></td> <td>30</td> <td>3</td> <td></td> </tr> <tr> <td>Legal</td> <td></td> <td></td> <td>12</td> <td>3</td> <td></td> </tr> </tbody> </table> <p>Total:87 man-month over 6 months, with a peak in activity in Q2-10</p>			2010						1	2	3	4	Commercial			36	3		Technical			30	3		Legal			12	3	
		2010																														
		1	2	3	4																											
Commercial			36	3																												
Technical			30	3																												
Legal			12	3																												

		Key uncertainty: number of projects							
4 - Final selection and award	<ul style="list-style-type: none"> Perform and report ad-hoc analysis from stakeholder queries Undertake financial, technical and legal evaluation of bids 	2010				2011			
		1	2	3	4	1	2	3	4
		Commercial				75			
		Technical				36			
		Legal				15			
		Total: 137 man-month over 3 months							
		Key uncertainty: number of projects and sub-technologies, quality of submissions							
5 - Confirm and negotiate awards	<ul style="list-style-type: none"> Perform and report ad-hoc analysis from stakeholder queries Negotiation with MS and developers and potentially additional funders(e.g. EIB) 	2011				2012			
		1	2	3	4	1	2	3	4

	<ul style="list-style-type: none"> • Confirm awards • Analyse competition process and ensure that lessons learned are documented for second call process 	<table border="1"> <tr> <td>Commercial</td> <td>75</td> <td>9</td> </tr> <tr> <td>Technical</td> <td>36</td> <td>6</td> </tr> <tr> <td>Legal</td> <td>45</td> <td>6</td> </tr> </table>	Commercial	75	9	Technical	36	6	Legal	45	6	
Commercial	75	9										
Technical	36	6										
Legal	45	6										
		<p>Total: 177 man-month over 6 months, essentially in Q2-11</p> <p>Key uncertainty: number of projects, quality of submission, MS-developer contractual arrangements</p>										

Assuming the following fee rates for the consulting firms, the total budget for the first call is c€15m in today's money terms. With an assumed inflation rate of 2.5% per annum, the figure is c€16m for the first call.

Fee rates	€per man-month (real 09 figure)
Commercial	30 000
Technical	20 000
Legal	30 000

Expenses are estimated at 15% of advisor fees: c€2.5m

Total: c€18m estimated of adviser cost for first call

Potential tasks for each phase for the second call:

The tasks for the second call are fundamentally the same than the first call. However the resource requirement should be lower:

- (1) The documentation prepared for the first call can be reused as a basis for the second call documentation; and
- (2) Learning from the first call should allow the process to be more effectively carried out.

The number of project for the second call is the main unknown parameter and is likely to remain so until 2012 (when a new OJEU would be issued).

The estimate of resource for the second call is based on the assumption that the drafting of the documentation will require half the resource it needed for the first call but that the evaluation of project will require a similar amount of resource:

Estimated external resource (man-month) for second call

	2012				2013				2014				
	1	2	3	4	1	2	3	4	1	2	3	4	
Commercial	1	20	11	17	2	6	15	75	9				
Technical		15	11	20	2	6	18	36	6				
Legal		5	7	11	2	6	9	45	6				

Adviser fees ~ €16m + 15% expenses (€2m) = c€18m

Total: c€18m estimate of adviser cost for second call

Note: Those figures are estimated and based on very broad assumptions. The actual adviser costs might be significantly different.

The timetable for the first tranche is considered optimistic, particularly for phase 1 for which a significant volume of work needs to be undertaken in Q4 2009. If delay occurs in phase 1, it is

likely that the resource requirement will remain constant until the ISOS is sent out and thus the cost of the first phase could well be significantly higher than estimated here.

Summary of indicative effort for external advisers (man-month)

	2009				2010				2011				2012				2013				2014				Total
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Design process, prepare documentation																									
Commercial			2	39	10				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51
Technical				30	10				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Legal			9		2				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Down selection																									
Commercial			-	-	6	15				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
Technical			-	-	6	18				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Legal			-	-	6	9				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Finalize documentation																									
Commercial			-	-	-	36	3				-	-	-	-	-	-	-	-	-	-	-	-	-	-	39
Technical			-	-	-	30	3				-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
Legal			-	-	-	12	3				-	-	-	-	-	-	-	-	-	-	-	-	-	-	15

Final selection																					
Commercial	-	-	-	-	-	4	75	-	-	-	-	-	-	-	-	-	-	-	-	-	79
Technical	-	-	-	-	-	4	36	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Legal	-	-	-	-	-	3	15	-	-	-	-	-	-	-	-	-	-	-	-	-	18
Confirm and negotiate awards																					
Commercial	-	-	-	-	-	-	-	75	9	-	-	-	-	-	-	-	-	-	-	-	84
Technical	-	-	-	-	-	-	-	36	6	-	-	-	-	-	-	-	-	-	-	-	42
Legal	-	-	-	-	-	-	-	45	6	-	-	-	-	-	-	-	-	-	-	-	51
Call 2 process																					
Commercial	-	-	-	-	-	-	-	-	-	-	1	20	11	17	2	6	15	75	9	-	229
Technical	-	-	-	-	-	-	-	-	-	-	-	15	11	20	2	6	18	36	6	-	143
Legal	-	-	-	-	-	-	-	-	-	-	-	5	7	11	2	6	9	45	6	-	97
Mid point	2	78	40	120	9	11	126	156	21	1	39	29	81	4.5	11	126	156	21	-	1032	

Annex II: TIMELINE of EIB involvement

