

INCEPTION IMPACT ASSESSMENT			
TITLE OF THE INITIATIVE	Renewable Energy Package: new Renewable Energy Directive and bioenergy sustainability policy for 2030		
LEAD DG – RESPONSIBLE UNIT – AP NUMBER	ENER – C.1 – AP 2016/ENER/025	DATE OF ROADMAP	10 / 2015
LIKELY TYPE OF INITIATIVE	Legislative measure (Directive or Regulation)		
ADDITIONAL INFORMATION	https://ec.europa.eu/energy/en/topics/renewable-energy		
<p>This Inception Impact Assessment is provided for information purposes only and can be subject to change. It does not prejudice the final decision of the Commission on whether this initiative will be pursued or on its final content and structure.</p>			

A. Context, Subsidiarity Check and Objectives
<p>Context</p> <p>The EU and the world are moving towards a more sustainable and renewable energy system. Cost-competitiveness, reduced local pollution and global greenhouse gas emissions and security of supply concerns, as increased renewable energy can reduce import dependency, are among the main reasons for this shift globally. Additionally, the renewable energy sector offers strong growth in manufacturing and know-how, thus jobs and growth for the economies that grasp the opportunity.</p> <p>Against this background, the European Council in October 2014 set a binding EU-level target of at least 27% for the share of renewable energy consumed in the EU in 2030. The Commission Communication on A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy of February 2015 confirmed the political commitment for the European Union to become the world leader in renewable energy. It also announced that the Commission will present a Renewable Energy Package.</p> <p>The European Union has promoted renewable energy through legislative frameworks since the first renewable electricity directive from 2001 and the 2003 directive on renewable energy use in transport. These directives were repealed by the Renewable Energy Directive adopted in 2009, which set out legally binding targets for each Member State for 2020, and a trajectory to reach them, bringing the EU as a whole to 20% of renewable energy in final energy consumption by 2020. The 2009 Renewable Energy Directive was amended in 2015¹ in view of the Union's objective to further reduce greenhouse gas emissions and the significant contribution that road transport fuels make to those emissions (ILUC amendments).</p> <p>National implementation of the current Directive is assessed on a biennial basis. The second renewable energy progress report by the Commission (with data from 2012-2013) was published in June 2015². It shows that almost all Member States were on track to meeting their 2020 renewables target, but that for full target achievement some Member States may need to take additional measures, particularly since the target trajectory is becoming steeper towards 2020.</p> <p>The upcoming Renewable Energy Package will ensure delivery of the renewable energy target for 2030 set by the October 2014 European Council. The development of the new framework is related to other ongoing initiatives on electricity market design, Energy Union governance, revision of the EU Emissions Trading System, the initiatives related to the non-ETS sectors, decarbonisation of transport, global technology and innovation leadership. The applicable State aid rules were adopted last year and are being implemented.³</p> <p>The current Renewable Energy Directive has been subject to an evaluation under the Commission's regulatory fitness programme (REFIT) in accordance with the Annex to the Communication "Regulatory fitness and performance: results and next steps" (REFIT), COM (2013) 685. Whilst the main findings of the REFIT evaluation (for more details see below) broadly confirmed the Renewable Energy Directive's effectiveness, a number of shortcomings have been observed, including:</p>

¹ <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028>

² <https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports>

³ A review of the Environment and Energy State Aid Guidelines is foreseen in the 2017-2019 period.

- **Current national renewable energy action plans:** While the national renewable energy action plans provided transparency and information for investors on Member States' plans for renewable energy development, they eventually became outdated as the Directive does not require updating them periodically to adjust them to policy and global economic changes. This issue will be addressed in the new Renewable Energy Package and also in the Commission's initiative on streamlining of planning and reporting requirements as part of the Energy Union Governance.
- **Cooperation mechanisms:** The cooperation mechanisms have not been used to any significant extent by Member States. In the current Directive, the use of cooperation mechanisms is voluntary and Member States have so far preferred to use national renewable energy sources for target achievement. The opportunity given by the current Directive of sharing the burden of the renewable energy target cost-effectively has therefore not been utilised.
- **Administrative procedures:** Administrative and planning systems are very diverse across the EU Member States and progress in streamlining them has been patchy. Clear and transparent rules are not yet in place in all Member States at all levels.
- **Grid access rules:** Certain provisions of the current Directive are not specific enough (e.g. providing deadlines for their implementation) for the purpose of enabling better monitoring and enforcement. The directive also leaves discretion to Member States on whether shallow or deep grid charging is applied which changes considerably the risk and thus cost for new renewable installations across countries.
- **Guarantees of origin (GO):** The regulatory framework in the current Directive did not provide sufficient clarity and provisions for the creation of a comprehensive, liquid and harmonised GO system throughout the EU.
- **Biofuels and biomass sustainability:** Indirect effects of biofuels were not included from the very beginning in the legal text, creating policy uncertainty, thus potentially undermining investment. In any case, different national implementation of support schemes has led to market barriers. Harmonised and comprehensive EU sustainability criteria for all other biomass uses in the energy sector (electricity, heating and cooling and transport) were also not included.

These main findings have already been published with the latest [Progress Report of June 2015](#) (COM(2015)293 final and SWD(2015)117 final). The detailed results of the REFIT evaluation, which assesses the effectiveness, efficiency, relevance, coherence and EU-added value of the Directive, will be included in a Staff Working Document and fed into the Impact Assessment process for the new Renewable Energy Package.

The Renewable Energy Package will be developed in parallel to those on the design of the electricity market [2016/ENER/007] and energy efficiency [2016/ENER/002] both of which are also foreseen to be finalised in the autumn of 2016. Separate inception impact assessments will be published for these initiatives but coherence between the final impact assessments and policy proposals will be ensured. In addition, this initiative is also closely linked to that on developing a governance framework for the Energy Union which will be based on Member States' integrated national energy and climate plans and a corresponding monitoring system [2016/ENER/029].

Issue

This initiative will address the following main issues:

- **Cost-effective, sustainable and actual delivery of a share of renewable energy of at least 27% in the EU in 2030.** Analysis underpinning the 2030 policy framework for climate and energy indicated that the least cost pathway to achieve greenhouse gas reduction targets in 2030 and 2050 is for the EU to attain a share of at least 27% of energy consumed from renewable sources in 2030. In the absence of binding national targets for renewable energy, one main challenge is how the at least 27% share will be delivered through EU, regional and national level actions taking into account differing national capacities to produce renewable energy and Member States' national plans, whilst building on the renewable shares achieved in 2020.
- **An uncertain investment climate holds back investment in renewable energy technologies.** Investments in most renewable energy sectors are characterised by high up-front costs and low operational costs (with the notable exception of bioenergy). If an investment decision has been taken, investors have little room to adjust their cost structure. Political or regulatory uncertainty translates into higher costs of capital and makes increasing the share of renewable energies more costly to investors, to consumers and to society as a whole. Investments into renewable energy are therefore particularly dependent on a stable regulatory framework providing certainty to investors of different sizes. In future, it is expected that the cost of capital will continue to play a role in the competitiveness of most renewable energy technologies favouring a stable regulatory framework, as well as the actual location of the deployment (location reflecting respective

national endowments as well as administrative procedures, grid costs, etc.) and other elements such as the market design and the ETS price.

- **In some cases, poorly designed Member State support schemes did not take into account market developments.** Some Member State support schemes did not respond sufficiently rapidly to falling technology cost developments resulting in over compensation and unnecessarily increasing costs for consumers. In response, some governments made drastic cuts to national support schemes, also affecting investments already made, which have led to a deterioration of the investment climate in those Member States. Some renewable energy technologies are however approaching the point where they would be able to compete in a well-functioning internal energy market with adequate market design on a cost-neutral basis. It is therefore important the market design drive such new investments in new renewable capacity. However, this may not be possible for all forms of renewable energy. It is recalled that where support constitutes State aid it needs to be in line with the Energy and Environment State Aid Guidelines.
- **Renewable energy may still face a residual market failure if external costs are not yet fully internalised by competing technologies.** If subsidies are granted to address such market failures to promote renewables, it can also create other market distortions that need to be balanced.
- **Markets and their institutions are to a large extent constructed for conventional energy sources.** The challenge is to make markets fit for higher shares of renewable energy and integrate renewable energy into the energy market, taking into account of increasing decentralised production. While the consultative communication on market design outlines some of the challenges, the upcoming legislative proposal on market design foreseen for 2016 and the Renewable Energy Package will be the legislative tools to address them.
- **The high and still growing dependence of the EU on imports of energy** and the resulting political vulnerabilities could be reduced by further deploying domestic renewable energy sources, including in the areas of transport and heating and cooling.
- **Not all bioenergy sources deliver substantial and verifiable greenhouse emissions savings and the promotion of bioenergy can lead to market distortions in relation to the underlying demands for biomass feedstocks for material use.** Bio-energy is expected to remain a significant part of the EU renewable energy mix, therefore its further development post 2020 needs a coherent framework to ensure sustainable production and efficient use of biomass and biofuels. This should deliver robust and verifiable greenhouse gas savings (taking into account land use) and maximise the resource-efficient use of biomass, while guaranteeing the integrity of the internal market.
- **Strengthening regional cooperation offers unique opportunities to deliver faster and more cost-efficient progress towards an integrated market.** While there are some successful examples of ongoing regional cooperation, effective **regional cooperation** is not happening sufficiently in the energy sector and in renewables. Interconnection levels and cooperation at regional level to address market development issues have been insufficient to deliver an integrated energy market with missed benefits for energy costs and security of supply. Whilst regional cooperation is now an established practice in infrastructure development, it is increasingly seen as a stepping stone for building a more integrated European energy policy, including on renewable energies and for lowering costs of transitioning to a low carbon economy. It is also seen as an instrument enabling more flexibility and helping the Member States to develop regional markets and to find regional solutions based on differences between the regions and their geographical, climate and energy market conditions as well as consumption patters. It is important to ensure that regional cooperation further supports a progressive EU-integration and the completion and deepening of the internal energy market.
- Problems identified in the **REFIT evaluation of the existing legislation** (see above) particularly related to its implementation, potential to simplify and reduce regulatory and administrative burdens (e.g. coherent planning and reporting by Member States, lack of stable, transparent and credible policy framework).

The positive impacts of mitigated climate change and enhanced energy security affects everyone, while jobs and growth mainly benefit companies and citizens involved in the transition. However, introducing grid competitive, less expensive and abundant renewable energy technologies in the new energy market mix increases the competitiveness of the EU economy and provides first mover advantages to the European industry. Third countries may also benefit from reduced costs of renewable energy sources stemming from the EU technological leadership and enabling policies in this area. Increased demand for resources needed for renewable energy sources will impact other using sectors, in the EU and internationally.

Subsidiarity check

Why can Member States not achieve the objectives of the proposed action sufficiently by themselves?

The European Union has established an internal energy market which also addresses renewable energy sources. Experience has shown that uncoordinated actions at Member States level can lead to a more limited and more expensive renewable energy sources development and the fragmentation and distortion of the internal

energy market. EU level action is needed to ensure that Member States' contributions to the at least 27% EU-level binding renewable energy target is collectively met.

Can the EU achieve the objectives better?

EU level action ensures achievement of the at least 27% EU renewable energy target through investor certainty. It will also enhance a consistent development of EU renewable energy policy across the EU leading to a more cost-efficient renewable energy deployment and a smooth and efficient operation of the internal energy market whilst fully considering the differing capacities of the Member States to produce different forms of renewable energy. Together with the market design legislative proposals this initiative should enable the further integration of renewable energy sources into the internal energy market alongside other generation technologies.

Main policy objectives

The overall objective is to: Achieve the target set by EU leaders of at least 27% share of renewable energy in final energy consumption by 2030 in particular by ensuring appropriate market conditions for the cost-effective development and deployment of sustainable and competitive renewable energy, consistent with other policies, in line with the 2030 target and remedy market failures (such as inadequate inclusion of externalities in the cost of energy sources) as well as avoiding the creation of new market failures.

More concrete specific objectives of the initiative are:

1. Establishing an accountable and reliable system for the achievement of the 2030 target of at least 27% renewable energy at EU level that provides Member States with flexibility to deploy a nationally or regionally desired amount of renewable energy, while ensuring the binding EU-level target is met by a combination of Member States efforts and EU measures. This will also underpin the EU ambition to become the world number one on renewable energy;
2. Creating the market conditions that allow for the cost-efficient financing and integration of renewable energy into the market. Where support is still needed, it needs to be cost-efficient, sustainable, predictable, and reliable through market-based mechanisms. A regional approach to renewable energy policy, cooperation and market integration is considered.
3. Addressing remaining challenges with regard to the mainstreaming, deployment, uptake and integration of renewable energy in the EU energy markets and grids, including self-generated renewable energy on an individual basis and through collective schemes, sustainable transport and heating and cooling (including market design and legal and administrative barriers at Member State level);
4. An improved bioenergy sustainability policy which promotes robust, cost-efficient and verifiable greenhouse gas emission savings with sustainable production and efficient use of biomass and biofuel in the heat, electricity and transport sectors, while ensuring the sustainable use of land, the sustainable management of forests in line with the EU's forest strategy, addressing indirect land use effects, guaranteeing the integrity of the internal market, respecting the international trade rules and avoiding excessive administrative burden;
5. Promote cooperation between Member States in regional approaches to renewable energy and market integration and grid operation.

This initiative builds on the extensive experience gained, in particular through the implementation of the Renewable Energy Directive 2009/28/EC and its REFIT evaluation as carried out.

B. Option Mapping

Baseline scenario – no EU policy change

Option 1: No further action

The current Renewable Energy Directive stays in force. Member States are legally only obliged to meet their 2020 renewable energy targets. The specific provisions of the Directive either become obsolete (cooperation mechanisms, planning and reporting) or outdated (grid access, guarantees of origin, administrative and non-technical barriers to renewable energy deployment). Biofuel sustainability rules are maintained at status quo while sustainability rules are not extended to cover other energy uses of biomass.

Options of improving implementation and enforcement of existing legislation or doing less/simplifying existing legislation

Option 2 – Better implementation and enforcement

The Commission's REFIT analysis of the current Renewable Energy Directive indicates that the effectiveness and efficiency of the measures laid down by the Directive vary, depending on a number of factors such as their implementation at Member State level, clarity of the tasks that need to be fulfilled by Member States, uncertainty about costs, benefits or legal barriers or lack of incentives. In particular certain provisions of the Directive, such as Articles 13,14 and 16 (administrative procedures, information and training and access to and operation of the grids) could be made more specific in order to enable better implementation, monitoring and enforcement. The current Directive also leaves room for simplification, in particular as concerns the biofuel sustainability related

articles (Articles 17-19). However, such limited changes would seem insufficient to ensure delivery of the EU 2030 renewable energy target, because they would not reflect the fundamental change in the target architecture (from binding national targets to a binding EU level target), or the intended revision of the power market design, nor the broader changes in EU energy governance initiated by the Energy Union Framework Strategy.

Alternative policy approaches

Option 3: A new EU policy framework for renewable energy to ensure that Member States collectively meet the at least 27% renewable energy target in a sustainable and cost-efficient way

A new approach to renewable energy deployment is developed that takes into account the European Council conclusions to achieve a mix of at least 27% renewable energy by 2030 at EU level and the new governance system developed to reach this goal (including streamlining of planning and reporting), while taking into account that the 2020 targets need to be fully met. This new system would build on the currently existing framework to provide stability of expectations but be complemented by regional and EU-level elements to encourage a gradual transition to a fully market integrated renewable energy system that is fully consistent with a functioning EU internal energy market.

Options are considered which address:

- Target achievement: Measures to build a stable policy regime that creates investor certainty around the at least 27% target for renewable energy and ensures that the EU is able to reach the target collectively. This could include options for an EU-level financing facility;
- National and regional approaches and market design: Remaining challenges to integrating renewable energy in the EU energy markets are addressed. A new regional approach to renewable energy policy and market integration is considered;
- Outdated provisions of the current Directive are updated, options for simplification and burden reduction are addressed and problems associated with the implementation of the existing framework are tackled;
- Other measures to stimulate the growth of renewable energy, empower citizens, remove barriers to renewable energy deployment and create green jobs and growth are considered;
- The existing EU biofuel and bioliquid sustainability criteria are streamlined/extended/reinforced to continue applying after 2020. This new policy would be developed to cover also solid biomass and biogas in heat and power in a coherent way and will ensure cost-effective and verifiable greenhouse gas emissions savings (e.g through a GHG accounting methodology), addressing direct and indirect impacts, including on carbon stocks. The new EU bioenergy policy is either integrated into the renewable energy instrument or in a stand alone instrument but is part of the renewable energy policy framework.

Option 4: Full harmonisation of the EU renewable energy policy (with EU policy tools or harmonised policy tools across Member States)

The European Council conclusions to achieve a mix of at least 27% renewable energy by 2030 at EU level is achieved through full harmonisation of the EU renewable energy policy. The economic benefits of this approach would need to be balanced with the likely substantial changes to current national frameworks and the need to avoid interfering with Member States' choices between different energy sources.

Options are considered which address:

- Target achievement: Investor certainty around the at least 27% target for renewable energy is created through a fully harmonised EU renewable energy policy and incentives, at Member State or company level, to ensure that the EU is able to reach the EU target collectively; this could include obligatory cooperation between Member States and an EU mandate to promote renewables in transport.
- Market design and barriers: Remaining challenges to integrating renewable energy in the EU energy markets are addressed at the EU level, including harmonisation of national permitting procedures; harmonisation of certification schemes for installers.
- A new bioenergy sustainability policy is considered that ensures robust and verifiable greenhouse gas emissions savings, addressing direct and indirect impacts, including on carbon stocks. This policy is either integrated into the renewable energy instrument or in a stand alone instrument but is part of the renewable energy policy framework.

Alternative policy instruments

Use of alternative policy instruments (alternative to regulation) will be considered if deemed useful to ease implementation of the RES legal framework. The [guidance on self-consumption](#) (SWD/2015/ 141) that was issued as part of the Market Design initiative is an example of such an alternative policy instrument. It should be noted that 'soft' options such as guidances and platforms will be explored, not only as an alternative to legislation

but also as a possible complement thereto.
Alternative/differentiated scope
Possibilities for differentiation in scope compared to the scope of the current Renewable Energy Directive will be considered, in view in particular of the objective to cover comprehensively bioenergy sustainability. Currently there are mandatory EU sustainability criteria only for biofuels and bioliquids. A new framework could put in place mandatory harmonised and comprehensive EU sustainability criteria for all bio-energy uses (including solid biomass) in the energy sector (electricity, heating and cooling and transport).
Options that take account of new technological developments
Options that take account of new technological developments will be considered, particularly ones which could facilitate cross-border coordination and the integration of decentralised generation and demand side resources. The use of IT tools will also be considered to foster better co-operation amongst relevant players.
Preliminary proportionality check
An EU legislative framework for renewable energy is a proportionate response to the objective to achieve the at least 27% renewable energy target by 2030 at EU level, compensate for market failures, avoid fragmentation and distortion of the internal energy market and create investor certainty at EU level. It does not go beyond what is necessary to achieve this objective. Important national prerogatives, such as the Member State's right to determine the conditions for exploiting their energy resources, their choice between different energy sources and the general structure of their energy supply, remain untouched.
C. Data Collection and Better Regulation Instruments
Data collection
Usage will be made of existing and projected econometric tools, existing and projected studies, and other data available inside and outside the Commission. A large number of studies are already available to provide general input to the process ⁴ . In addition, a number of specific studies have been/are being commissioned to support the build-up of the analytical basis of the work (including Impact Assessment(s)). A non-exhaustive list of studies contracted by Commission services:
<u>Ongoing studies:</u>
<u>Renewable energy (general)</u>
<ul style="list-style-type: none"> • Realisation of a reliable and stable energy supply system integrating an increasing share of variable renewable energy and storage • Technical assessment study analysing cost-efficient support schemes • Study on technical assistance in realisation of the 2016 report on renewable energy, in preparation of the renewable energy package for the period 2020-2030 in the EU • Study on the barriers, benefits and challenges of renewable energy self-consumption, undertaken under the Insight E observatory project, unpublished TOR available on demand • Impact assessment support study: Policies for DSOs, Distribution Tariffs and Data Handling, tender to be published by October 2015, first results by Q2 2016, unpublished TOR available on demand • Technical support for Impact assessment of policy options and measures for increasing the share of renewable energy post-2020 • Mapping and analyses of the current and future (2020 - 2030) heating/cooling fuel deployment (fossil/renewables)
<u>Bioenergy</u>
<ul style="list-style-type: none"> • Delivery of sustainable supply of non-wood biomass to support a resource-efficient bioeconomy in Europe • Carbon impacts of biomass consumed in the EU • Renewable energy progress and biofuel sustainability • ILUC quantification study of EU biofuels • Improving the sustainability of fatty acid methyl esters (FAME/biodiesel)

⁴ All studies to be potentially used for this purpose can be found here : <http://ec.europa.eu/energy/en/studies>

- [From the Sugar Platform to biofuels and biochemical](#)
- Development of a methodology to certify low ILUC biofuels and guidelines supporting auditors verifying compliance with the sustainability criteria for biofuels in their risk assessment. Call for tender to be published by end of October 2015, [unpublished TOR available on demand](#)
- [Impacts on resource efficiency of future EU demand for bioenergy](#)
- [Environmental implications of the increased reliance of the EU biomass for energy imported from North America](#)
- [Study on optimised cascading use of wood](#)
- Provision of data and analysis on a long term basis on biomass supply and demand (JRC) – ongoing, first deliverable by Q4 2015, [unpublished TOR available on demand](#)
- Study on the sustainable and optimal use of biomass for energy in the EU beyond 2020, tender published under a DG ENER framework contract, unpublished TOR available on demand

These studies will be used as input to the Impact Assessment(s). A REFIT evaluation of the existing Directive on renewable energy sources is being conducted and will provide input to the envisaged impact assessment(s). First results have already been published in the latest renewable energy [Progress Report of June 2015](#) (COM(2015)293 final and SWD(2015)117 final).

Consultation approach

The consultation process started with the “EU leading on renewable energy conference” on 17 March 2015, and continued with the RES integration conference on 27-28 May 2015. However, the official kick-off will take place, with the opening of a public consultation in Autumn 2015. The topics relevant to the new renewable energy package will be discussed at a range of workshops, bilateral and multilateral meetings with stakeholders (including third countries representatives) and events to be organised during 2015 and 2016.

The stakeholders concerned are: EU Member States, civil society, think tanks, international organisations, renewable energy associations, industry federations and businesses. The stakeholders will be contacted by the Commission and invited to the relevant events. The purpose will be to discuss the implications of possible policy options with the stakeholders concerned.

Will an Implementation plan be established?

Yes No

An implementation plan will be considered depending on the policy options pursued.

D. Information on the Impact Assessment Process

An Impact Assessment with regard to the policy options indicated above is planned and under preparation. It is not excluded that a separate Impact Assessment will be needed concerning the sustainability of bioenergy. All relevant DGs participate (SG, ENER, ENV, COMP, ECFIN, SJ, AGRI, CLIMA, GROW, MOVE, RTD, TRADE, BUDG, JUST, JRC, REGIO).

E. Preliminary Assessment of Expected Impacts

Likely economic impacts

The costs and benefits of the agreed target of at least 27% renewable energy, in combination with targets for energy efficiency and greenhouse gas emissions have been assessed extensively in the [Impact Assessment](#) to the Commission's Communication: A policy framework for climate and energy in the period from 2020 to 2030 (COM(2014) 15 final and SWD(2014) 15 final). With regard to the cost components, in scenarios with explicit energy efficiency policies and renewables targets, energy purchases are significantly reduced but investment costs increase. Importantly, these investments have great potential for driving jobs and growth in the EU and have a positive impact on GDP.

While the [2030 Impact Assessment](#) has provided an analytical basis for the overall 2030 framework and its targets, this impact assessment can consider costs and benefits of different policy options to meet the at least 27% renewable energy target.

Likely social impacts

According to the Impact Assessment to the Commission's Communication: A policy framework for climate and energy in the period from 2020 to 2030 (COM(2014) 15 final and SWD(2014) 15 final), ambitious energy efficiency and renewable targets are expected to increase employment. In particular, sectors meeting the need for increased investments such as equipment and the building sectors see employment growth compared to the reference scenario, whereas employment in e.g. extracting industries for fossil fuels are expected to decrease. As highlighted in the Energy Union Framework Strategy, the European renewable energy sector employs over a million people, i.e. more than 2 renewable jobs per 1000 capita, which is twice the world average. In 2013, the

EU RES sector generated €137 bn in turnover, with a 6% increase towards the previous year ([Eur'Observer 2014](#)).

According to the 2030 Impact Assessment, both fossil fuel prices (up to 2030) and electricity prices (up to 2020) are expected to increase already in the reference scenario, putting pressure on the affordability of energy. All scenarios implying greenhouse gas reductions at 40% or less nevertheless demonstrate small differences compared to the reference scenario. While the 2030 Impact Assessment has provided an analytical basis for the overall 2030 framework and its targets, this impact assessment can consider costs and benefits of different policy options to meet the 27% renewable energy target.

Finally, according to the 2030 Impact Assessment, policy options with concrete energy efficiency policies and renewable energy targets can facilitate the involvement of citizens in the energy markets and increase acceptance of the energy transition.

Likely environmental impacts

Increased deployment of renewable energy will lower greenhouse gas (GHG) emissions from the EU energy system. More renewable energy deployment would reduce the use of fossil fuels, for which the implicit subsidies related to air pollution in EU28 in 2015 are estimated by the IMF to be €145 billion⁵. The renewables substitution of natural gas made up 30% of all avoided fossil fuel use in 2013, almost half of Member States reduced their gross inland consumption of natural gas by 7%⁶. The development of a new EU bioenergy sustainability policy will help to improve the level of GHG savings achieved using biomass for energy purposes and will ensure sustainable use of land, sustainable management of forests in line with the EU's forest strategy, address indirect land use effects, and include safeguards for biodiversity.

Likely impacts on simplification and/or administrative burden

In line with the broader objectives of the Energy Union governance, a new EU legislative framework for renewable energy should simplify and streamline Member States' and Commission' planning and reporting requirements.

Likely impacts on SMEs

The economic impacts developed above will also influence SMEs. Most of the value chain of deploying renewable energy technology is operated by SMEs. The streamlining of the EU sustainability criteria for biofuels provides opportunities for significant simplifications for national authorities, farmers and traders of biomass, including SMEs. On the other hand new sustainability criteria which add to existing criteria established in the sectorial policies (Common Agriculture Policy (CAP) and national forest policies) could also imply increased administrative burden for bioenergy generators and biomass producers, including SMEs. In some cases, this might have the knock-on effect of negatively affecting established markets for non-energy biomass-based products.

Likely impacts on competitiveness and innovation

According to the Impact Assessment to the Commission's Communication: A policy framework for climate and energy in the period from 2020 to 2030 (COM(2014) 15 final and SWD(2014) 15 final), both renewables policies and energy efficiency policies can have a tangible impact on security of energy supplies and competitiveness due to reduced exposure to volatile and sometimes unreliable fossil fuel supply. With € 35 bn exports in renewables technology every year compared to € 31 bn of imports, the EU is also above the world average with regard to trade in renewable energy equipment (with 20% of world's trade) (based on Eurostat statistics). The EU's share of the world's renewable energy patents was around 40% in 2011 (higher than the overall share of EU patents at 32.5%) (see European Commission, European Economic Developments in Europe 1/2014).

Likely impacts on public administrations

The streamlining/simplification of the EU biofuel sustainability criteria, including through a risk-based approach provides opportunities for significant simplifications for national authorities. On the other hand additional sustainability criteria which add to existing criteria established in the existing sectorial policies (CAP and national forest policies) could also imply increased administrative burden for Member States authorities, and there will be additional challenges to facilitate and developing local implementation plans.

Likely impacts on third countries, international trade or investment

Reaching the at least 27% EU renewable energy target will incentivise the development of EU innovative renewable energy technologies and reduce the costs of key technologies available for renewable energy deployment anywhere in the world. Increasing the share of renewable energies has become crucial to tackle the challenge of climate change as well as energy security. A new bioenergy sustainability policy would have bearing on relations with third countries.

⁵ Currency exchange assumed 1 € = 1.13 \$ Report and spreadsheet with country-specific data available here: <http://www.imf.org/external/pubs/ft/survey/so/2015/new070215a.htm>

⁶ COM (2015) 293 final