

Mrs. Marie DONNELLY
Director – Directorate C
DG Energy
European Commission
Rue de la Loi 200
1049 BRUSSELS

Brussels, 9 February 2012

Dear Mrs. Donnelly,

We are pleased to send you attached the EURELECTRIC response further to the public consultation on the Renewable Energy Strategy.

Please contact Pierre Schlosser (pschlosser@eurelectric.org) should you require any further information regarding this response paper.

Yours sincerely,



Susanne NIES
Head of Energy Policy & Generation Unit

European Commission's Public Consultation on the Renewable Energy Strategy

A EURELECTRIC response paper



The **Union of the Electricity Industry–EURELECTRIC** is the sector association representing the common interests of the electricity industry at pan-European level, plus its affiliates and associates on several other continents.

In line with its mission, EURELECTRIC seeks to contribute to the competitiveness of the electricity industry, to provide effective representation for the industry in public affairs, and to promote the role of electricity both in the advancement of society and in helping provide solutions to the challenges of sustainable development.

EURELECTRIC’s formal opinions, policy positions and reports are formulated in Working Groups, composed of experts from the electricity industry, supervised by five Committees. This “structure of expertise” ensures that EURELECTRIC’s published documents are based on high-quality input with up-to-date information.

For further information on EURELECTRIC activities, visit our website, which provides general information on the association and on policy issues relevant to the electricity industry; latest news of our activities; EURELECTRIC positions and statements; a publications catalogue listing EURELECTRIC reports; and information on our events and conferences.

EURELECTRIC pursues in all its activities the application of the following sustainable development values:

Economic Development

▶ Growth, added-value, efficiency

Environmental Leadership

▶ Commitment, innovation, pro-activeness

Social Responsibility

▶ Transparency, ethics, accountability

European Commission's Public Consultation on the Renewable Energy Strategy

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EURELECTRIC Key Messages on an EU Post-2020 RES Strategy

- ✓ **EURELECTRIC is committed to achieving a carbon-neutral power supply in Europe by 2050 and Renewable Energy Sources (RES) will play a major role in this regard**, but EURELECTRIC also stresses the need to foster a diversified energy mix as an important means of dealing with uncertainty and promoting cost-effectiveness in the framework of an integrated European market. EURELECTRIC also underlines that this objective cannot be achieved without major investments in grids infrastructure to cope with the variability of power generation based on wind and solar.
- ✓ To reach the EU's 20% RES target by 2020, about one third of the EU's electricity will need to be generated from renewable energy sources. **RES thus represent a key investment opportunity for the power sector. Indeed, the European electricity industry represented by EURELECTRIC is and will remain a major investor in electricity generation from renewables.**
- ✓ **RES cover more than ten different technologies with different characteristics – for instance, some are variable while others are not. These different technologies are on different tracks to market competitiveness.** Hydropower, a mature technology representing 20% of the global and 17% of the European electricity output, currently makes up the major share of installed RES capacity – and it has the potential to develop further in the EU. Other, more recent technologies such as wind and solar are expanding considerably. Their variability will transform Europe's energy system, both networks and markets.
- ✓ It is important to achieve Europe's sustainability agenda in a cost-effective way that does not unnecessarily increase costs for customers and overburden the EU economy. EURELECTRIC believes that **cost-effectiveness is best delivered through consistent, market-based approaches which rely on a European approach to RES development.** We are strongly committed to achieving the internal energy market by 2014, in line with European targets. Conflicting and inconsistent policies threaten the transition towards the new energy system. They could also have a negative impact on the investment climate – at a time when investment in generation infrastructure and networks infrastructure (including smarter distribution grids) is urgently needed to achieve agreed political targets.
- ✓ Most importantly, and with a view to enhancing and speeding up the integration of renewables into the internal energy market, **RES generators must be incentivised to progressively enter into the market on a level playing field with all other generators. In particular RES generators should be incentivised to sell their production into the market as well as to meet scheduling, nomination and balancing requirements as other generators do.** In addition, there should be a progressive convergence towards European-wide market-based support mechanisms. This would expose RES generators to market prices that reflect variations in demand and supply. It would also substantially enhance cost-efficiency. In this regard, the use of cooperation mechanisms and progressive convergence of support schemes for RES must however be incentivised, step-by-step.
- ✓ **EURELECTRIC recognises the need to decarbonise the electricity sector and strongly believes that ambitious and clear EU CO₂ reduction targets are needed for 2030 and beyond.** The EU ETS should be the main driver for decarbonising the European economy. Its effectiveness will be enhanced if we have firm, long-term targets for 2030 and beyond, up to 2050.
- ✓ **With several RES technologies becoming more cost-competitive, it should be possible to progressively integrate them into the market from 2020 onwards – and in some cases even before. The EU ETS should then become the main driver for the deployment of low-carbon generation, including renewables, and specific support should be phased out.** Moreover, RES should be developed in the most suitable locations if investments are to be sustainable in the long term.

- ✓ The measures above will contribute to the new, low-carbon energy system, but **should be complemented by a stronger focus on the full innovation chain and on research, development and demonstration (RD&D)**. Enhanced RD&D is needed to propel low-carbon technologies towards competitiveness, enabling them to compete on a level playing field with other technologies. Public support after 2020 should be primarily oriented towards high-potential low-carbon technologies that have not reached market competitiveness by then.
- **In the timespan up to 2020, policymakers must take some key actions to keep RES growth on track to meeting the 2020 target:**
 - **Renewables should be developed in a way that is compatible with the market, taking into account security of supply and the wider competitiveness of the EU.** A well-functioning and integrated European energy market is key to successful growth in renewable energy.
 - **Investors need stability – it is therefore imperative to avoid retroactive changes to support schemes.**
 - **Obstacles to investments in renewables and grid infrastructure must be removed.** The EU should address the lack of appropriate interconnections within Europe. An adequate degree of interconnection is a key prerequisite for competitive electricity markets and successful growth in renewable energy.
 - **A consistent policy framework must promote flexibility on both the demand and supply side.** Furthermore, as gas is to play a major role in increasing flexibility, the underlying gas markets need to develop towards a single EU gas market (underpinned by a diversified infrastructure) which flexibly delivers gas supplies to power.

Section A: General policy approach

In light of the results of recent communications on a Roadmap to a low carbon economy and transport white paper as well as the Energy 2050 Roadmap:

1. Is there a role for new targets for renewable energy sources post-2020 assuming that any targets must be consistent with climate mitigation and energy efficiency policies and targets as is currently the case with the 20/20/20 targets in the Europe 2020 strategy?

Please explain the reasons for your answer (such as the scope and contribution from GHG targets/ETS, the need to address other environmental, security of supply or technological development benefits).

- Yes, a mandatory target at EU level is appropriate

- ✓ **Yes, an indicative and non-legally binding target at EU level is appropriate**

EURELECTRIC:

The binding 2020 targets have been beneficial in providing increased support and a higher profile for renewable energies. They have helped to develop RES as a mainstream source of electricity, but have also introduced conflicts with other EU policies, e.g. EU ETS and the internal market; and these policy conflicts will become more pronounced as the renewables market share increases. Therefore, the main focus should be on the development of a system approach rather than on targets.

This means that policy must promote integration of renewables in energy markets and networks, encourage flexibility of demand and ensure back-up capacity. In its Renewables Action Plan, a comprehensive industry strategy on RES development in Europe, EURELECTRIC has proactively outlined which barriers will need to be overcome to meet the 2020 RES targets. To make this move as cost-effective as possible, cooperation mechanisms should be maximised towards the 2020 targets.

The existing targets already envisage a RES market share in electricity of around 35% by 2020. This has two effects: it removes a large share of capacity from the dynamics of the wholesale market and it weakens the carbon price. While EURELECTRIC acknowledges that renewable energies provide benefits other than carbon abatement, the effect of mandatory RES targets is that more cost-effective means of CO2 reduction are not developed. If ever greater amounts of subsidised capacity are brought onto the system, this calls into question the viability of energy markets and significantly raises the cost of decarbonising Europe's electricity.

EURELECTRIC hence considers that after 2020, renewables in the electricity sector should move towards being fully integrated in the market, with a strong carbon target implemented over the entire energy system. The EU ETS is the main policy instrument for decarbonising at the EU level, in contrast to EU policies executed through national approaches on RES.

In a post-2020 perspective, the ETS would allow for a consistent and economically efficient move towards carbon-neutrality, while facilitating affordability and security of supply. We believe that a strong 2030 carbon target must be put in place, beyond the carbon reduction trajectory foreseen in the ETS Directive, in recognition that the existing trajectory is insufficient to create a strong carbon signal.

EURELECTRIC believes that indicative targets at EU level could act as a useful signal for the continuing development of renewables, in recognition of their benefits for decarbonising Europe, security of supply and industrial development. Investors need stability to deliver on investments.

- Yes, a combination of EU and sectoral level targets is appropriate

- No, targets for renewable energy sources are unnecessary

2. Are other policy elements necessary to promote renewable energy post-2020, such as:

✓ Enhanced focus on R&D to bring down the costs of renewables technologies

EURELECTRIC:

Yes. We support a progressive shift from production subsidies to RD&D funding for RES technologies along with an increased reliance on alternative support instruments (such as for example risk sharing facilities) which contribute to delivering a secure investment climate without hampering market dynamics. In our recent position paper on "How to Foster Research, Development and Demonstration of RES-E technologies?"¹, we have outlined a nine-step approach that would bring down the cost of RES technologies.

✓ Facilitation policies (faster and easier permitting, improved access to the grid and further grid investments, availability of more sites for renewables, etc)

EURELECTRIC:

Yes, this is a key priority, and action should start now, as proposed by the Commission in its Infrastructure Package. Member states urgently need to reduce the length of permit granting procedures for energy infrastructure. Current periods of up to 10 years are not compatible with the EU's carbon and energy policy objectives. We thus support both the proposed one-stop shop and the envisaged time limits and consider them as best practices for successful energy infrastructure investments across Europe.

EURELECTRIC also agrees with the proposed measures to provide a supportive regulatory framework for interconnector investment, as further grid investments are key to promote renewables and integrate markets. It should be noted that reinforcement of national electricity networks will also often be essential to accommodate more variable renewable generation and that national network regulation must also be aligned to integrate renewable and decarbonising objectives.

¹ Available on EURELECTRIC's website: www.eurelectric.org/resap

- Abolition of support mechanism or subsidies to other energy sources

EURELECTRIC:

Yes, EURELECTRIC supports a level playing field for all forms of generation and does not see the need to subsidise mature generation technologies.

- Public procurement obligations in support of renewables

EURELECTRIC:

While this is a matter for the public authorities, EURELECTRIC does not believe that a particular purchasing strategy should be mandated. National and local governments can play an important role in promoting more sustainable energy provision, but it should be up to them how this is done and efforts should clearly be focused on areas of good renewable resource.

- Better financing possibilities

EURELECTRIC:

EURELECTRIC believes that a stable and predictable investment/regulatory framework are key elements in ensuring that renewables continue to develop rapidly. Sudden and in particular retroactive changes to support schemes must absolutely be avoided.

Investment decisions should mainly lie with market players based on price signals from a well-functioning market. Public funding should thus focus on leveraging private investment (e.g. via the European Investment Bank) where the market alone is unable to give the right investment incentives.

- Continue to ensure sustainability and scalability

EURELECTRIC:

It is important to ensure consistency between RES development and the environmental legislation (and vice versa) as there are trade-offs and interlinkages between these two sustainable goals. For example, experience with the RES Directive have shown that questions related to the protection of the environment have not been regulated comprehensively, in particular regarding water, soil and habitat while detailed assessments have been missing.

- Other (please specify):

EURELECTRIC:

Policies are needed to increase public acceptance in RES investment and the related and necessary grid investments: awareness and information campaigns, transparency and adequate participation of stakeholders in permitting procedures. These policies are needed as early as possible, not only after 2020.

Coordination of renewable energy development and network development is needed, with a view both to developing the network effectively and making best use of the existing network. Ideally generation should be located near to and in proportion to consumption.

Section B: Financial support

EURELECTRIC:

EU member states have developed a wide variety of different support schemes for RES, like feed-in tariffs or certificate schemes. To avoid negative consequences of the current fragmentation that exists for RES subsidies (more than 30 across the EU), a European approach to renewable promotion (recognising Europe's resource and geographical diversity) is needed to ensure a European level playing field.

A European approach would maximise RES potential throughout the EU and would bring about the benefits of a larger market: higher resource- efficiency, greater cost-efficiency and reduced transaction costs. However, the move towards a coordinated European approach should be done step by step, i.e. both gradually and transparently and in a way that does not damage investor confidence.

The regulatory regime for investments that have already been committed should not be changed. Retroactive changes to RES support for existing installations, as implemented in some countries, can severely and sustainably damage investors' confidence.

Most NREAPs, submitted at the end of 2010 to the European Commission, are nationally focused and do not consider an EU-wide context. We believe there is a need for more convergence on RES support schemes across national boundaries. The joint certificate market between Sweden and Norway from 2012 can be considered by other members as a potential benchmark on the path towards convergence². Other cooperation mechanisms such as joint projects between EU member states also need to be promoted as a means of reducing overall costs³. ACER and the European Commission – in cooperation with all relevant EU and national stakeholders – could promote increased use of cooperation/flexibility mechanisms with a view to more convergence.

Member States at present rely on various forms of national support mechanisms to fulfil their national renewable targets for 2020. This section refers to the further development of support mechanisms post-2020.

1. Do you consider that financial support will continue to be necessary to support renewables post 2020 given their expected greater penetration?

- Yes

- No

✓ For selected technologies/circumstances/markets (please specify)

EURELECTRIC:

Yes, financial support will continue to be necessary to support specific renewable technologies which have not yet reached maturity in 2020. In order to promote a proper and undistorted market functioning, there should be a gradual shift from production support to innovation support. This means that after 2020, RES support should primarily take the form of research, development & demonstration funding.

Most investments in new renewable electricity generation post 2020 should therefore be without specific support other than the effects of ETS. If support schemes are continued, they should imperatively go hand in hand with markets so as to prevent distortions in the price formation mechanism or act as barriers to market integration⁴.

Moreover, with a cost-efficiency consideration, priority funding should be granted to those technologies which are close to competitiveness or have the potential to rapidly close the cost gap with mature technologies.

² Feedback on this experience which has started on 1st January 2012 should be followed up with great attention.

³ This should be underpinned by an enhanced effort in strengthening interconnectors throughout the EU.

⁴ EURELECTRIC notes that, notwithstanding the above points, some existing support schemes will continue to 2030 and beyond for generation developed under the current support schemes.

2. If renewable energy sources require support post-2020, how do you think this can best be achieved with a view to achieving a cost-effective deployment?

- a. Making support schemes more market-oriented (please specify how)
- b. Accelerate convergence of national support schemes
- c. Open up national support schemes to cross-border projects
- d. Phase out support schemes over time (please specify for which technologies if applicable)

EURELECTRIC:

All of the above listed measures should be addressed, as much as possible before 2020, in line with the evolution of the internal energy market. EURELECTRIC considers that a cost-effective deployment of RES will be ensured if the following conditions are fulfilled step by step and in the following order.

1. Open up national support schemes to cross-border projects (i.e. use cooperation mechanisms)
2. Accelerate convergence of national support schemes. This should be done gradually and transparently and in a way that does not damage investor confidence.
3. Make support schemes more market-oriented
4. Phase out support schemes over time, as technologies reach competitiveness to market prices

Studies like EURELECTRIC/Pöyry 2008 or Primes 2008 reveal that a European and market-based approach will reduce the costs to deliver on these goals significantly. A European approach to renewables can exploit open markets and geographic advantages to deliver the necessary growth. A European approach would also provide consistency with overall European market integration, with the EU energy market to be set up, according to the European Council, by the end of 2014. Regional integration is a promising means to achieve the target. The best performing region could serve as a benchmark for the others.

Moreover, the concentration of RES in one specific region must be aligned with a corresponding increase of interconnection/distribution network reinforcement & upgrade to prevent additional distortions both in the market and the system operation of the region concerned by this RES capacity growth. The total system cost of promoting RES in a certain country/region far from the relevant market/load centre should be taken into account, in particular as regards necessary new investments in transmission or risk of over-investment.

3. Do you think it would be useful to develop common approaches as regards Member States' financial support for renewables?

- Yes, with benchmark values for support level per technology per Member State
- Yes, with EU-wide benchmark values for support level per technology
- No, support levels should be entirely up to Member States.

EURELECTRIC:

EURELECTRIC supports a European approach (i.e. more coordination and more convergence between existing support schemes) to RES support (and we elaborate further on these aspects later in our response). EURELECTRIC's long-term position is to see a European convergence to market-based mechanisms, without technology-specific support.

Currently, there is an incentive to invest in the country where RES support is the most attractive, rather than where the resource-efficiency (i.e. the load factor) is highest.

4. Should the structure of financial support be gradually aligned EU-wide?

- ✓ Yes (please explain how this could be achieved and which support structure you consider most suitable)

EURELECTRIC:

Yes. Financial support schemes in the EU should converge on the basis of the cooperation mechanisms foreseen in the RES Directive.

Common RES instruments would reduce the cost of achieving EU policy goals, as opposed to many different systems.

- No

With regard to questions 3. and 4. please specify if you see a difference between the different sectors (electricity, heating and cooling, transport).

EURELECTRIC:

When considering policy options, it is important to look at which sectors are (or should/will be) covered by the ETS. For sectors not covered by the ETS, a different approach to support can be useful, compared to the one applied to electricity for example.

The above mentioned sectors are all affected by the targets set in the RES Directive; however, mainly due to technological constraints, not all of them contribute in the same way to achieving the 20% target. With a view towards 2030, we believe that a fair burden-sharing between the above mentioned sectors is essential to avoid market distortion, e.g. perverse incentives to use fossil fuels rather than renewable electricity for heating. The aim should be to achieve the EU target at least cost consistent with the available potential and using common instruments.

5. How do you see the relation between support schemes for renewable energy and the requirements of the internal electricity market for the period after 2020 against the background of a rising share of renewables?

- Member States need to be able to continue to operate support schemes on a national level and retain control over who benefits from national schemes.

- ✓ **Member States need to open their support schemes to renewable generation from other Member States (if so, please explain how this could be achieved, e.g. through convergence of national schemes, compensation mechanisms or other)**

EURELECTRIC:

The requirements of the internal electricity market and renewable electricity reaching possibly a third of the market in 2020 is an important argument for having the ETS and not new support schemes as the main driver for new investments in RES generation post 2020.

Yes. A bottom-up convergence based on joint certificate schemes would be desirable (on the basis of the Norway-Sweden joint support scheme for example), or joint projects could be pursued. This would have the effect of encouraging development in optimum locations (rather than where support is most generous) and should make costs converge around Europe.

- ✓ **Member States should open their support schemes to renewable generation from third countries (as above, please explain how this could be achieved)**

EURELECTRIC:

Yes.

Member states should fully implement Article 9 of the RES Directive. Constraints to flexible mechanisms foreseen

by Directive 2009/28/CE should be relaxed, such as the limitations to import from third countries. It will be important to ensure that definitions of renewable technologies are consistent and that double counting is avoided, i.e. imported renewable power should not count towards the target of the exporting country.

6. Do national support schemes and differences between such schemes distort competition?

- No, support schemes do not have a significant distorting impact on competition
- Yes, all support schemes distort competition to a similar extent
- ✓ **Yes, some support schemes are more distorting than others (please specify which you consider most distorting)**

EURELECTRIC:

Regardless of the scheme applied, it is essential that RES generators compete on a level playing field with all other generators, i.e. paying connection, grid access and balancing charges like others. Support should be adjusted to cover these costs, ensuring a more transparent system.

Indeed, those support schemes which expose RES generators to market prices are more compatible with the well-functioning of electricity markets.

Schemes based on feed-in premiums or on tradable certificates allow exposure to market dynamics and are therefore preferable to basic feed-in-tariffs.

Moreover, we consider that alternative support instruments (such as for example risk sharing facilities) should be explored further as they contribute to deliver a secure investment climate.

Lastly, support schemes which are asymmetric cost charged to electricity import/export will distort the electricity market between two neighbouring countries.

Section C: Administrative procedures

Articles 13 and 14 of the Directive lay down rules on administrative procedures, information and training.

1. Which of the following issues relating to administrative procedures, information and training do you consider acting as a serious impediment to further growth of renewables following Member States' implementation of the provisions of the Directive? Please provide explanations and specific examples where available.

- Length and complexity of administrative procedures relating to authorisation/certification/licensing
- Lack of commonly agreed technical specifications
- Lack of information on support schemes or other
- Lack of credible and certified training and qualification
- ✓ **Other: lack of stable support schemes**

EURELECTRIC:

The aspects listed above are all relevant and should be addressed to stimulate investments in RES capacities. In general, the length of the administrative procedures is the most important issue to deal with. Planning and authorisation delays must be tackled both in relation to renewable energy facilities and the power lines required to connect them.

2. Which policy response to the problems identified above do you consider appropriate?

- The approach of the current Directive to lay down a general framework for Member State action is fine

✓ **Strengthen rules to intrude more directly into Member States procedures in terms of roles of different actors (e.g. one-stop-shop), maximum time-frame or other**

-Push for more standardisation and harmonisation on EU level or mutual recognition

- Other (please specify which would be in your view a workable solution to eliminate barriers).

EURELECTRIC:

A European approach to common EU projects should be designed on authorisation procedures. EURELECTRIC welcomes the measures recently proposed as part of the Commission's Energy Infrastructure Regulation, in particular the one-stop shop and the mandatory time limits for electricity transmission projects.

Section D: Grid integration of electricity from renewable energy sources

Article 16 of the Directive lays down a number of binding rules related to network development, access and operation in order to ensure that electricity from renewable energy sources may access the electricity network freely.

1. Do you consider that any of the following national rules and framework conditions will still create obstacles to renewable energy production after 2020? If so please specify which obstacles and the nature and degree of them for each of the following:

- Grid connection rules
- Cost-sharing rules
- Balancing rules
- Curtailment regime
- None of the above

EURELECTRIC:

EURELECTRIC stresses that these relevant issues need to be addressed as early as possible and certainly before 2020.

An interconnected power system creates interdependencies which make more harmonisation of network access and connection rules necessary for a secure operation of the power system.

Convergence of grid connection requirements with impact on cross-border network and market integration should be pursued on the basis of the 3rd Energy Package. Requirements should however be proportionate for all types of generation, and standards for existing generation facilities should only be changed if justified by cost-benefit analyses.

Following a growing share of RES, a lack of level playing field between supply technologies and a lack of harmonised rules for balancing, grid connection and access (at transmission level) create regional imbalances within and between member states that further increase the stress on the transmission system, making the issue even more urgent. This, together with the lack of proper cross border cost sharing of the grid expansion needed to realise RES expansion, will in the longer run impact the pace and potential volume of further RES expansion.

To reveal and allocate costs when and where they occur (cost-reflectivity principle), it is necessary to limit total costs and to create incentives for innovation in system services and efficient integration of the renewables.

Regulation should notably allow DSOs to follow an active network management approach revolving around investments in ICT and a more efficient grid planning and operations. This will enhance the legitimacy of policy targets.

2. Which renewables-specific grid related rules do you consider necessary and proportionate in a post-2020 perspective? (please explain why)

- Obligation for network operator to develop network
- Priority or guaranteed access
- Priority dispatch and obligation on TSO to counteract curtailment
- Other (please specify).
- None of the above

EURELECTRIC:

EURELECTRIC stresses that these relevant issues need to be addressed far before 2020.

We believe that priority of dispatch and guaranteed network access for RES generation, set by the new RES Directive, should not exempt these generators from their scheduling and balancing obligations, otherwise full integration of wind and solar generation in the market will never be achieved and wind generation will never be able to compete with other types of generation. After 2020, every technology must compete on the market under equal conditions. Therefore, no priority dispatch should be given to any specific technology.

An increasing share of variable generation will increase the value of and need for a well-functioning internal wholesale market with proper scarcity signals. These signals will become increasingly important to support not only a cost-efficient transition towards a low carbon economy, but also the adequacy of electricity supply in the interconnected EU system and in the end the legitimacy of the EU energy policy.

It will thus be of increasing importance to support a level playing field, and to ensure that RES is fully incorporated in the electricity markets, taking responsibility for own imbalances and being dispatched on equal terms as other generation sources. The number of events when RES curtailment for system security reasons is needed is already on the rise in Europe. This will, in the future, require more economic approaches towards grid integration and participation of RES in system security.

3. With regard to system integration of wind and solar power, what measures do you consider most important to increase the flexibility reserve of the system:

- ✓ **Increase flexible back-up capacity (capacity payments ...)**
- ✓ **Increase availability of demand response (smart grids ...)**
- ✓ **Accelerate infrastructure development and interconnection**
- ✓ **Market-based measures: better use of interconnectors (implicit auctions), trading closer to real time**
- ✓ **Increased availability of storage**
- ✓ **Enable renewable generators to offer balancing services to TSOs**
- ✓ **Other (please specify): adequate and cross-border ancillary services reserves.**

EURELECTRIC:

EURELECTRIC believes that the challenge of managing variability will require innovation and investments as well as a reliable regulatory framework that provides the right incentives for energy infrastructure investments in this new environment. Variability at unprecedented levels will therefore have to be managed, with major implications for all generation technologies, transmission and distribution grids, energy markets and end-users.

We therefore need to adopt a system approach to RES that considers all those elements and also the timelines when each element can deliver. A large and growing share of renewable energy in the generation mix can only be delivered if all the elements are in place. This calls for a wider approach on policy measures on how to deliver

ambitious RES targets.

Variability requires flexible back-up capacity from dispatchable generation (thermal and hydro), enhanced demand side participation, integrated markets and transmission and distribution grids. In markets where price signals do not ensure enough investments in flexible and back-up capacity, it could be necessary to introduce Capacity Remuneration Mechanisms (CRM) under the prerequisites and conditions outlined by EURELECTRIC in a policy paper dedicated to this issue⁵.

Improved forecasting of wind and solar power, enhanced ability to regulate dispatch from the existing generation fleet, and improved balancing, also on the border, intra-day and day-ahead markets will also be key elements.

With market-coupling within Central Western Europe (CWE) and between CWE and Northern Europe, a big step towards the 2014 target models has recently been made. Equally, reinforced and upgraded European transmission and distribution grids are needed, able to absorb the majority of variable RES capacities. Demand side measures, smart grids and new interconnections will complete the effort to balance the electricity system. Research, development and demonstration (RD&D) can speed up this development. Technological development both of RES generation as well as of transmission and distribution systems is necessary to reach the targets.

Such development requires involvement from equipment manufacturers, the electricity industry and research institutions. This requires large, targeted and coordinated R&D support, combined with support for demonstration projects and stable market conditions in order to ensure the implementation of increasingly competitive RES technologies.

A system approach which takes into account the flexibility on the generation side, the flexibility on the demand side, the degree of market integration and the degree of interconnection of different power systems is needed.

- **A basket of different solutions will have to be implemented, taking stock of the specificities of different countries and/or regions. These solutions must however be compatible with the integration of the European electricity market and the cost-efficient development of RES.**
- **Market prices must always be allowed to reflect the hourly supply-demand balance, affected by RES variability, in order to give correct signals for flexible and back-up capacity, as well as for demand response.**
- **In countries where generation adequacy is endangered despite efforts to remove distortions to price signals policymakers should consider introducing capacity remuneration mechanisms - under the prerequisites and conditions outlined by EURELECTRIC in a policy paper dedicated to this issue⁶ - to ensure investments in flexible and back-up capacity.**
- **Investment should be urgently directed towards RD&D programmes which aim at enhancing the cost-efficiency of the various flexibility and storage solutions mentioned above.**
- **Support acceptance for price volatility and market-based prices reflecting full cost of generation: Indeed, demand response is one of the key factors that may facilitate further expansion of RES. This demand response can, depending on the design, apply to consumers of various sizes. Demand response and the innovations needed to develop technological solutions must build on market price signals (e.g. day-ahead, intra-day and real time).**
- **As gas is to play a major role in terms of flexibility, the underlying gas markets need to develop towards a single EU gas market which flexibly delivers gas supplies to power stations (both commercial and technical flexibility).**
- **Renewable generators should be able to offer balancing and ancillary services to both TSOs and DSOs.**

⁵ See www.eurelectric.org/resap : "RES Integration and Market Design: are Capacity Remuneration Mechanisms need to ensure generation adequacy?", May 2011.

⁶ See www.eurelectric.org/resap : "RES Integration and Market Design: are Capacity Remuneration Mechanisms need to ensure generation adequacy?", May 2011.

- As additional measures, adequate ancillary services (control reserves) must be contracted by the TSOs to secure the power system stability during the operational hour, and the balancing markets need to be integrated in order to efficiently utilise all European balancing resources.

Section E: Market integration

EURELECTRIC:

According to EURELECTRIC members, the two most important actions to take are to establish functioning and integrated wholesale markets across the EU and to incentivise RES generators to progressively enter into the wholesale market.

Current national support schemes expose renewable energies to market signals to various degrees. In many cases, these support schemes nevertheless result in parallel "systems" for conventional and for renewable generation which are largely unresponsive to one another. The following questions ask how this could be addressed in a post-2020 perspective where renewables will represent a significant share of the market.

1. In which of the following ways could renewable energy be made responsive to market signals?

- ✓ **Price risk - producers of renewable energy should be obliged to sell their production on the market and aid be granted exclusively as a) premiums or b) investment aid**
- Price risk – producers of renewable energy should operate without any aid
- ✓ **Producers of renewable energy should bear greater responsibility for system costs.**
- ✓ **Balancing risk – producers of renewable energy should bear balancing responsibility towards TSOs (if so, please specify how: responsibility on individual operator or centrally organised, same balancing rules for all operators or specific rules for variable generation?)**
- Producers of renewable energy should continue to be treated separately (no exposure to conventional market)

EURELECTRIC:

EURELECTRIC considers it necessary to ensure a level playing field for balancing responsibility which applies to all producers, including wind generators, in order to stimulate all market participants to carry out thorough and proper scheduling and forecasting and thus limit system costs.

In order to support the market integration of RES it is also important to recognise the value of a further development of intra-day trade across borders in order to provide RES generators with sufficient possibilities to manage their imbalances.

2. How can it be ensured that market arrangements reward flexibility?

- ✓ **A - Dedicated arrangements to reward availability of generation capacity**
- B - Favourable regulatory treatment of storage operators
- ✓ **C - Develop demand response to market signals (please specify, e.g. smart grids, smart meters, demand aggregation, interruptible demand)**
- D - Current market arrangements are sufficient to reward flexibility

EURELECTRIC:

We believe that a combination of measures A (while ensuring compatibility with well-functioning electricity markets and their European integration) and C will bring about the right regulatory framework to deliver on these solutions. Flexibility solutions should compete on a level playing field.

In any case, every dedicated arrangement to reward flexibility capabilities should be designed with the goal of avoiding any distortion on electricity markets.

The discriminatory treatment of pumped-storage in various EU Member States (e.g. 'double grid fee obligations' in Austria, Germany and France to name only a few) should be eliminated, so that the flexibility potential of pumped storage can be fully reaped in Europe.

In addition to these measures, the regulatory framework needs to ensure that the European-wide market coupling of the day-ahead and intra-day market, as well as balancing market integration are realised quickly, and that there are no artificial price caps or floors limiting the flexibility potentials in both generation and demand.

Finally, as gas is to play a major role in terms of flexibility, the underlying gas markets need to develop towards a single EU gas market which flexibly delivers gas supplies to power stations (both commercial and technical flexibility).

3. In how far do you think today's market design needs to be adapted to provide an appropriate framework for renewables

✓ The current wholesale market model based on short-run marginal cost pricing is appropriate

EURELECTRIC:

EURELECTRIC considers that to enhance electricity markets' ability to deliver generation adequacy, governments and regulators must first of all allow energy-only markets to function properly. To this end, distortions which hinder the balance of demand and supply must be removed. Such distortions include regulated end-user prices, restrictions on plant operations, price caps and floors, and other regulatory or administrative measures which unnecessarily hinder wholesale market outcomes.

At the same time, integration of wholesale markets must remain a top priority for EU and national policymakers. Efforts should thus concentrate on implementing the Target Models of day-ahead market coupling, intra-day and forward markets to fulfil the objective of an EU integrated market by 2014. This process should be accompanied by the strengthening of transmission capacity (both domestic and cross-border) and the establishment of regional balancing markets.

In markets where generation adequacy is endangered (through reduced investments and early decommissioning), policymakers should consider introducing a capacity remuneration mechanism (under the prerequisites and conditions outlined by EURELECTRIC in a policy paper dedicated to this issue⁷) – ideally at a regional level or at least in coordination with other EU markets. In any case, consistency with the process of EU market integration should be ensured.

If introduced, capacity remuneration mechanisms should be able to be phased out once the market itself delivers the appropriate investment incentives to ensure the adequacy of the system. In practice, the implemented model, while ensuring sufficient regulatory stability, should produce effects only as long as the underlying problem of generation adequacy requires an additional solution to complement well-functioning wholesale markets.

✓ The current wholesale market model based on short-run marginal cost pricing would have to be supplemented by instruments incentivising investment in generation capacities with a high CAPEX/OPEX ratio (please specify which)

⁷ See www.eurelectric.org/resap : "RES Integration and Market Design: are Capacity Remuneration Mechanisms need to ensure generation adequacy?", May 2011.

- Wholesale markets would have to move to reflecting full costs
- Electricity markets should evolve into energy services markets, earning revenues from more than just electricity

Section F: Renewables in Heating and Cooling

The challenges for renewable energy in the heating and cooling market are sometimes considered to be different in that its use is in many cases already cost-competitive but impeded by other barriers. Many of the barriers should be addressed when the Directive is implemented.

1. What do you consider to be the main barriers against a stronger uptake of renewable energy in the heating and cooling market beyond 2020?

- Costs/lack of financial support
- Building regulations etc.
- Lack of awareness
- Lack of suitable information
- Lack of public support
- Lack of capacity (installers, other)
- Other (please specify)

EURELECTRIC:

The following issues need due consideration:

- **Lack of supportive tax policy – e.g. carbon taxes on heating fuels.**
- **Lack of incentives for RES heat commensurate with those for RES electricity but if incentives, need for convergence at EU level.**
- **Lack of financial support is a considerable obstacle.**
- **Lack of public support is a major barrier. Public spending should promote long run energy efficiency gains particularly in infrastructures with high energy usage, thus sustainably supporting specialised businesses and skills.**
- **The decentralised nature of the sector with many millions of decision-makers makes change more difficult to implement than in electricity.**

2. What pathways do you consider to be the most promising for further increasing the share of renewable energy in heating and cooling beyond 2020?

- ✓ **Biomass**

EURELECTRIC:

Yes, there is scope for developing biomass-based CHP, though this is likely to vary across the EU. As a mature technology, CHP should be developed on market terms and where there is existing access to heat consumers and sufficient heat demand. There is also potential for increased used of bio-methane for direct injection into gas networks.

- ✓ **Geothermal**
- ✓ **Solar thermal**
- Electrification together with higher share of renewables in electricity production

EURELECTRIC:

Yes, heat pumps. They remain the most efficient solution outside of distribution heat networks.

Electrification together with a higher share of renewables in electricity production is the most promising pathway to further increase the share of renewable energy in heating and cooling beyond 2020. Electricity is and will remain a flexible, safe and extremely efficient way of using energy that may be cost-effectively transmitted and which may be generated from multiple primary renewable sources regardless of their location. In limited areas and subject to seasonality, solar thermal may also play a relevant role.

- Other (please specify)

EURELECTRIC:

The setting of the fuel mix should be left to market dynamics.

Integrated smart grids and metering systems with home storage and management technologies enable the efficient measurement of energy use and promote energy efficiency through adequate planning of cost-effective consumer behaviour and investment.

3. How do you see the interaction of promoting further use of renewable energy in heating and cooling and enhancing energy efficiency in this sector?

EURELECTRIC:

Increase efficiency of buildings and optimise heating and cooling systems. Heat pumps can contribute here, with high conversion factors.

Section G: Renewables in transport

Transport is almost entirely dependent on oil consumption. There is a growing recognition that major efforts are needed to reduce GHG emissions and fossil fuel dependency in this sector. The Directive requires that 10% of transport fuel should come from renewable energy sources but more efforts to reduce oil dependency and GHG emissions are needed post-2020.

1. What do you consider to be the main barriers against a stronger uptake of renewable energy in transport?

✓ **Costs**

EURELECTRIC:

Yes, cost of batteries. For plug-in and battery electric vehicles the biggest obstacle remains the costs for batteries, which can add 6-16k €/car. The resulting higher up-front purchase price is the key deterrent for customers. This needs to be addressed in order to become an attractive alternative to ICE cars for the consumers.

✓ **Pace of technology development**

- **Mainly development of batteries.**
- **Lack of awareness regarding electric vehicles (use and cost awareness, initial investment and running costs).**

- Lack of standards

EURELECTRIC:

Yes.

As with every new technology, standardisation is a prerequisite for market deployment and development. Europe still has not found consensus on a single connector to charge electric vehicles which would enable electric vehicle customers to charge their vehicle anywhere in Europe without having to worry about the compatibility and interoperability of different cables.

The Focus Group set up under the umbrella of the European Standardisation Organisations to respond to the European Commission's standardisation Mandate (M/468; charging electric vehicles) has not reached agreement among the European stakeholders on the choice of a single connection to the AC mains for charging passenger vehicles in Mode 3. On the international level, the IEC has standardised the two infrastructural solutions that are on the European table for discussion, within the catalogue of IEC 62196-2 standards which approves both solutions from a safety and security point of view thus leaving the choice depending on the regulatory conditions and electrical infrastructure of each country. A solution to the regulatory issue of shutters/IPXXD would be the single most immediate contribution for providing a single, harmonised solution for connecting electric vehicles to the charging infrastructure across Europe.

In addition to standardised hardware to charge electric vehicles, a standardised communication protocol is required between the charging infrastructure, the electric vehicle, the energy management system of the private network - if existing - and the electricity distribution grid. The communication between those will enable load management, while also making efficient use of the electricity generation capacity, especially electricity generated from intermittent renewable energy sources. Consequently, ICT standards are a prerequisite in this future smart energy system that will maximise the amount of electric vehicles powered by renewable electricity.

- Lack of infrastructure

EURELECTRIC:

In comparison to other alternative transport fuels, for example hydrogen, the infrastructural hurdles are rather low for electricity taken from the distribution grid. The basic infrastructure for recharging battery electric vehicles is already in place: electricity distribution grid connection points already offer recharging possibilities with domestic or industrial sockets. However, if electricity is to be used as a transport fuel under mass market conditions, the distribution network will require a dedicated and intelligent electric vehicle recharging infrastructure.

The power industry is already working towards a low-carbon electricity supply, dominated by intermittent and decentralised renewable energy sources. A smart distribution network that is able to manage demand and flexible loads is required anyhow.

Electric vehicles will become an integrated part of the smart home concept in a smart distribution grid by acting both as mobile consumers and electrical storage possibilities. Moreover, smart integration of electric vehicles in the network facilitates RES integration and optimises RES electricity charging. Hence, the synergies that exist between electrified transport and renewable electricity should be exploited to a maximum.

- Lack of awareness

EURELECTRIC:

The transport sector will have to undergo a radical shift in order to become more sustainable: fossil fuelled cars will need to be phased out in order to drastically reduce transport emissions.

Customers need to be made aware and incentivised to change their mobility habits by using fewer cars, shifting to more sustainable drive trains and making more use of sustainable public transport. Although many customers still perceive the range of today's electric vehicles as an obstacle, 80% of customers' daily journeys already fall within this range. The mind-set of mobility needs to be changed.

- Lack of suitable information

- Limits of availability of sustainably produced biofuels
- Other (please specify)

2. What sectors of transport do you consider to be the most promising for further increasing the share of renewable energy?

- Road for passengers
- Road for goods
- Rail
- Water
- Air

Please explain your answer.

EURELECTRIC:

The state-of-the-art technology of battery electric vehicles already offers a sustainable alternative for urban traffic. Road passenger transport especially in urban areas should shift to electrified vehicles as they significantly reduce the environmental impact: they produce no local emissions (zero tank-to-wheel), no air pollution and no noise pollution.

In this regard, EURELECTRIC welcomes the goal set in the Transport White Paper to phase out conventional cars in cities by 2050. In addition, EURELECTRIC is convinced that electric vehicles can complement a multi-modal approach of transport by electrifying the last/first mile of a journey.

Buses for public transport in urban areas are predominantly operated with diesel engines. In order to reduce global as well as local emissions caused by public transport, full electric buses are being investigated as a low emission alternative. Different technologies exist (battery swapping, conductive (AC/DC) and inductive charging, ultra-fast recharging at regular stops), and cost estimation and grid impact are being studied.

Electric drive trains may also offer solutions for urban freight transport by turning the last miles of a supply chain electric. Again this has a huge potential to reduce urban noise and air pollution, which is particularly important given the growing urbanisation rate.

The rail sector is already electrified to a large extent where economic performance allows for electrification of overhead lines. Synergies with renewable electricity and smart grids need to be exploited further.

For water and air, electricity can substantially reduce emissions, particularly in relation to fleet operations in harbours and airports. The potential for electric vessels in short-distance travel should also be further assessed.

In sum, EURELECTRIC is convinced that renewable electricity holds the key to significantly reduce GHG emissions and noise and air pollution of the transport sector.

Section H: Sustainability

Currently biofuels have to comply with sustainability criteria in order to benefit from support or to be counted towards renewable energy targets. This is in order to avoid negative side effects from an increasing use of biofuels. In addition, the Commission is currently considering introducing additional requirements related to indirect land use change and criteria for solid and gaseous biomass for energy.

1. Do you think that additional sustainability criteria are necessary in the post 2020 period?

- No, the existing criteria are already burdensome to implement
- No, the existing binding sustainability criteria are sufficient
- ✓ **Yes, sustainability criteria should apply to both all biomass and fossil fuels**

EURELECTRIC:

EURELECTRIC views bioenergy as a key tool in fulfilling the EU's 2020 renewable energy targets and curbing climate change. Forecasts suggest that electricity production from biomass will increase from 90 TWh in 2006 to between 200 and 360 TWh in 2020.

EURELECTRIC members will play a major role in developing this growth in biomass-fired power generation. Biomass is an essential part of the renewable portfolio; unlike other sources of renewables, it can provide baseload power generation and heating, and can also be used in existing thermal plants. Furthermore, biomass can be used as fuel in the automotive and transport sector. We favour the use of sustainable biomass, avoiding potential detrimental effects on the environment and social welfare. We believe that in the medium term, the use of biomass in all sectors – not just energy – should be subject to sustainability requirements.

However, there is a danger that the administrative burden of verifying such sustainability requirements could hinder the positive development of biomass use. Therefore criteria must be proportionate and appropriate to the purpose.

We advance the following views on sustainability criteria for solid biomass for energy production:

- EURELECTRIC is convinced that biomass is a key renewable source and will form a major part of reaching the 2020 targets.
- As a consequence, EURELECTRIC believes that the need for biomass for energy will increase over the coming years, necessitating much greater import from outside Europe. We fear that the development of many different national sustainability schemes in response to this will create inefficiencies and increase costs, leading to barriers to biomass trade and deterring investment in both biomass cultivation and biomass-powered electricity generation, because of uncertainty over long-term fuel supply in a changing regulatory environment.
- EURELECTRIC believes that EU-wide harmonised sustainability criteria are urgently needed to provide reliable evidence to the general public that biomass is a sustainable fuel⁸. We hence urge the European Commission to proceed with no further delay, with the publication of its report on “sustainability requirements for the use of solid and gaseous biomass sources”, which we see as a first step towards a binding EU legislative proposal on binding sustainability criteria for biomass.
- EURELECTRIC considers that this set of rules is absolutely needed to provide the legal certainty which the energy sector critically needs to invest in biomass projects (which might be put on hold if sustainability criteria are not adopted swiftly). We hence believe that the dialogue between policymakers and different stakeholders on creating mandatory criteria must start now.
- In developing criteria, through an open, consultative process, EURELECTRIC believes that the Commission should make use of lessons learnt through existing voluntary schemes and legislation. Several member states and industries already have good experience of using sustainability criteria which would usefully contribute towards the design of appropriate criteria at EU-level.
- EURELECTRIC recognises that the largest share of solid biomass used in the EU is produced within the union. Many member states, particularly those who are large producers of solid biomass, have national legislation on forestry that comprehensively covers sustainability issues relevant for that geographical area. Such legislation should be taken into account, and, if possible and where appropriate, biomass produced in such states should be considered sustainable by default or by a simplified “fast-track” process. This concept could also be extended to non-EU countries where legislation is sufficient and well-enforced, in order to avoid a disproportionate administrative burden that may hinder biomass market development.

Sustainability criteria should include requirements for sustainable production and a positive greenhouse gas balance. However, the inclusion of use in greenhouse gas balance needs to be approached carefully.

One of the EU's key aims should be to minimise barriers and ensure supply in an EU-wide biomass market –

⁸ The industry has already developed a standard which will facilitate implementation for solid biomass (Initiative Wood Pellet Buyers - IWPB).

harmonised, mandatory criteria will play a key role in development of this market.

Sustainability criteria should progressively be applied to all uses of solid biomass regardless of its end-use. This will assure transparent, non-discriminatory and objective rules for players in the biomass market and ensure that “unsustainable biomass” is not simply diverted from the energy sector to other users. Sustainability criteria for the non-energy industry should be equal in most respects apart from greenhouse gas balance which would not be practical to apply to uses in the non-energy sector.

Measures to counter indirect land-use change should also be considered, to ensure that biomass remains a solution to the climate problem and does not become counter-productive.

Moreover, in this relatively new field it is important to continue to monitor scientific results and implement new criteria if and when they become necessary to ensure a positive contribution of biomass to reducing global greenhouse gas emissions. For example, extra harvesting of slow-growing semi-natural forests, although delivering climate benefits in the long term, may increase CO₂ emissions in the period up to 2050 in which a substantial reduction of atmospheric CO₂ is needed to meet EU aims. It is therefore important to promote only biomass use which has a positive CO₂ performance in the relevant time scales and to discuss how to achieve this with science and industry representatives.

It is essential that sustainability criteria are proportionate and take into account that biomass will predominantly replace fossil generation. These criteria could also be extended to non-energy uses of biomass post-2020.

- Yes, additional criteria should be introduced to promote only the best performing biomass (please specify which)
Please explain

Section I: Regional and international dimensions

The cooperation mechanisms of the current Directive offer a framework for cooperation between Member States and with third countries. A number of initiatives are currently under consideration for putting regional coordination in practice, both within the EU as well as with neighbouring regions.

1. Do you consider current rules for cooperation *between Member States* sufficient to fulfil their purpose, i.e. realisation of cost-efficient renewable potential in the EU?

- Yes.

- No. (Please specify how they should be amended or which elements added)

EURELECTRIC:

As far as a European approach to RES development is concerned, EURELECTRIC considers that the use of cooperation mechanisms (in the short term) and progressive convergence of support schemes for RES towards a market-based design (in a medium to long term) must be incentivised to ensure cost-effectiveness and to establish a European level playing field.

A clearer framework for use of the mechanisms needs to be established.

The main problem is political will. Member States need to incentivise companies to undertake joint projects where this will reduce the cost of meeting national targets.

A regional approach makes sense, and nearby geographical regions should take advantage of this in order to ensure maximum economic efficiency. In this regard, the common certificate scheme between Norway and Sweden can be considered as a promising development.

Interconnections should be further developed to ensure inter alia that renewable power can be effectively utilised across the EU. In order to secure a cost-efficient development, the total system costs needs to be taken into account, including investments in generation, transmission, distribution and balancing costs.

2. Do you think the EU should further facilitate cooperation with third countries when it comes to the development of the potential for renewable energy?

- No, the EU should first focus on developing its own renewable potential
- ✓ **Yes, cooperation with third countries should be further promoted (please specify how and with whom, i.e. only neighbouring countries or more widely)**

EURELECTRIC:

Yes.

Cooperation should be based on market-based mechanisms, thus reflecting commercial rather than physical criteria. The Guarantees of Origin system (made free of current Directive constraints) could offer an effective basis for developing cooperation mechanisms with third countries, thus promoting a progressive convergence of support/cooperation mechanisms.

3. Should investments in electricity networks in some Member States (i.e. Spain, Greece, Italy) be prioritized for this purpose?

- ✓ **Yes (explain in which way and to which degree)**

EURELECTRIC:

Yes, there should be a role for the European Infrastructure Fund for Transmission to third countries.

- No (explain why)

4. Which measures do you consider appropriate and necessary in order to foster cooperation with third countries in this area?

- Bilateral agreements between Member States and third countries
- Agreements between the EU and third countries
- Other measures (please specify)

EURELECTRIC:

We call for a full implementation of Article 9 of the RES Directive in all Member States. We see plenty of political and economic opportunities in this cooperation with third countries.

The Commission could act as a facilitator in this regard and could provide a clear and transparent platform on the existing projects.

5. In its Communication on security of supply and energy cooperation – "The EU Energy Policy: Engaging with Partners beyond our Borders"⁷, the European Commission proposes to promote cooperation on renewable energy projects with the Southern Mediterranean countries and to gradually build a renewed EU-Mediterranean energy partnership focus on electricity and renewable energy. How do you consider this should relate with the EU internal renewables policy? What should be the priorities?

EURELECTRIC:

Instruments promoting the import of renewable electricity from third countries to meet European RES/decarbonisation targets exist, but can be further exploited. Article 9 of the RES Directive already offers the opportunity to meet RES targets via imported electricity from third countries, and should quickly be transposed into national law by EU Member States. However, cooperation mechanisms within the EU should not be forgotten: they are even more important and should be used without delay.

6. The possibility to explore regional cooperation and a coordinated, more strategic approach to grid connection for the rapidly growing volume of offshore wind generation in the North Sea is currently being explored in the framework of the North Sea Countries Offshore Grid Initiative (NSCOGI). Do you think such cooperation should be further fostered? What benefits do you think could arise from it? Do you consider that this experience could be generalised and applied elsewhere?

EURELECTRIC:

Yes, such cooperation should be further fostered and a European approach should be pushed forward to encourage the smooth and swift development of offshore wind in Europe.

Section J: Technology development

The SET plan presents the strategic framework to accelerate the development and deployment of cost-effective low carbon technologies in the perspective until 2020. For a limited number of technologies industrial initiatives were set up according to two criteria, their large-scale availability by 2020 and the willingness of industry to engage in public private partnerships.

1. For a first set of renewable technologies, namely wind, solar, bio-energy, the SET Plan aims at a cost-competitive market roll out of renewable energy by 2020. It also aims at enabling integration of renewable energy into the electricity grid and smart cities and communities. In your view, what would be the remaining key challenges of these technologies to be addressed by research and innovation in view of the 2050 objectives?

- ✓ **Technology performance and cost-competitiveness**
- ✓ **System integration**
 - Industrial manufacturing and supply chain
 - Other (please specify)

EURELECTRIC:

A stronger focus on the full innovation chain and on research, development and demonstration (RD&D) is needed. Enhanced RD&D is needed to propel low-carbon technologies towards competitiveness in Europe and initiatives with a European scope such as the European Institute of Technology should be further promoted.

Technology performance and cost-competitiveness along with system integration are the remaining key challenges.

As far as system integration is concerned, there should be a strong focus on enabling technologies such as Smart Grids or energy storage with the objectives of identifying what measures must be pursued to upgrade power networks to facilitate a larger scale integration of renewable energies. Smart Grids have an enabling feature to RES integration and so does demand response⁹.

In order to achieve the 20% RES target for 2020, EURELECTRIC considers that a clear focus should lie on the most mature RES technologies.

2. Which additional measures and/or instruments should be developed to address these technologies and their remaining challenges and to ensure that the EU innovation fabric is geared to supporting the significant deployment up to 2050?

EURELECTRIC:

- **Dissemination of publicly funded R&D results is essential.**
- **Investments in skills are key for Europe to meet its energy and climate objectives. The EU as a whole should**

⁹ See EURELECTRIC Policy Paper “10 Steps to Smart Grids” and EURELECTRIC Views on Demand Side Participation”, 2011.

ensure that future investments can be sustained by a well-trained and skilled workforce.

3. In your point of view, which technologies other than those covered by the current industrial initiatives should be given priority in the post-2020 perspective? Please justify with reference to the criteria mentioned above, i.e. large-scale availability and willingness of industry to engage in public private partnerships?

EURELECTRIC:

Storage technologies for load-levelling and energy management are currently not covered.

4. How successful do you consider the existing measures have been and which have been the main drawbacks? Explain why.

- Very successful, no drawbacks
- ✓ **Successful but some drawbacks (please specify which)**
- Not successful

EURELECTRIC:

We are witnessing a strong contrast between the ambitions for RD&D in energy and a reality in which spending is insufficient, fragmented and uncoordinated. In addition, member states focus too much on their share of the already limited budget, rather than developing a European approach.

In order to deliver on the ambitious 2020 agenda, and especially the 20% RES target, EURELECTRIC recommends the following nine general actions:

1. Significantly increase the energy-related RD&D budget.
2. Be realistic about what can be achieved by 2020 on the RD&D agenda, focus accordingly and be accountable for the steps to get there.
3. Focus more on deployment and commercial market uptake.
4. Focus clearly on mature technologies, in order to deliver on the 2020 targets.
5. Promote cooperation and exchange among member states and stakeholders on deployment experiences and RD&D focus and priorities. Avoid duplication of efforts. Set best practice and benchmarks and make them public.
6. Ensure stable incentives for industrial participation.
7. Give the SET Plan an independent budget line and use it as a major instrument to deliver on the 2020 targets.
8. Lighten the bureaucracy around EU research programmes. Adopt a results-oriented approach to programmes and ensure EU-wide benefits, but question for example the required number of participating countries.
9. Rather than merely stimulating competition across all EU member states for limited funding, consolidation or research and demonstration via hubs may lead to advances. A number of demonstration and innovation hubs across the EU should be identified: they should focus on particular technologies and services, recognising the existing advantages/imperatives in those areas to achieve technological breakthroughs.

5. Do you consider that assistance in technology development should be linked to a certain result to be achieved by a certain deadline?



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