

# ENTSO-E POSITION ON THE REVIEW OF THE RENEWABLE ENERGY DIRECTIVE

10 FEBRUARY 2016

## 1. Consultation questionnaire

**Q1. To what extent has the RED been successful in helping to achieve the EU energy and climate change objectives?**

<i>Very successful</i>	<i>Successful</i>	<i>Not very successful</i>	<i>Not successful</i>	<i>No opinion</i>
	x			

*To what extent did implementation measures for the RED as well as external factors (technological development, financial crisis, security of supply concerns and related market interventions) affect the effectiveness and efficiency of achieving the objectives? Please identify and ideally also quantify the direct and indirect costs and benefits such as macroeconomic effects, competitiveness effects, innovation, cost and cost reductions, environmental and health effects of the RED.*

RED has been a successful factor in the achievement of the 2020 EU energy and climate change objectives. Nevertheless, as RES technologies mature, we see significant space for improvement in view of reaching the energy and climate objectives for 2030.

In recent years, national governments have introduced important amendments to RES support mechanisms in line with these suggestions above. Such changes have been mainly driven by the need to improve the cost-efficiency of RES development (thus trying to limit the final impact on end-consumers) as well as reducing market distortions and inefficiencies. Such principles have been integrated in the Energy and Environmental State Aid Guidelines revised in 2014.

Building on the State Aid Guidelines, we believe that the RED should be reviewed so to:

- expose all RES mature technologies to wholesale market price signals;
- ensure that all market participants, including RES, have the same balancing responsibilities;
- not dispatch RES in priority, especially if this implies increased dispatching costs for the system.
- avoid if possible perverse interactions between wholesale energy markets and supports for example payment of RES output for negative prices.
- if still needed, support schemes for new RES generation should promote the economic efficiency of the selected resources (e. g. tendering)
- facilitate the participation of RES generation units in control centres with correct real time data to guarantee the observability and controllability of the units.

Looking at the new EU energy and climate change objectives, ENTSO-E welcomes the EU-wide 27% RES target for 2030 and stresses the need for a more coordinated approach to RES development. To ensure that RES investments are efficiently driven by price signals, it is now fundamental that European Policy – by reviewing the RED and other legislative instruments - ensures a comprehensive approach to RES targets, reformed ETS, interconnection targets and energy efficiency. Particular attention should be paid to measures ensuring that further RES development does not jeopardise the important goal to promote the reliable operation, optimal management and sound technical evolution of the European electricity transmission system.

**Q2. How should stability, transparency and predictability for investors be ensured with a view to achieving the at least 27% renewable energy target at EU level? Please indicate the importance of the following elements:**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Forward looking strategic planning of RES development is required by EU legislation</i>		x			
<i>Best practice is derived from the implementation of the existing Renewable Energy Directive</i>		x			
<i>Regional consultations on renewable energy policy and measures are required</i>		x			
<i>Member States consult on and adopt renewable energy strategies that serve as the agreed reference for national renewable energy policies and projects</i>	x				
<i>The Commission provides guidance on national renewable energy strategies</i>			x		

*Any other view or ideas? Please specify. What are the lessons from the RED (mandatory national targets, national plans, progress reports etc.)?*

It should be noted that stability, transparency and predictability are needed for the whole electricity sector, not only for investors in RES technologies.

RES development has been – and will continue to be – the key factor in transforming the whole value chain, for instance determining the level of complementary investments needed in network expansion and reinforcement, the level and type of necessary system services to ensure grid stability, as well as the capacity and flexibility required from generation and demand response to ensure system adequacy.

While policy and regulatory risks should be reduced, this does not imply that RES developers should be shielded from normal market risks like other investors in the sector, as such risks are part of competitive environments. In particular, RES generators – regardless of the level of investment-based or output-based support, should be exposed to market signals and balancing responsibility, and not be guaranteed priority dispatch if this implies increasing dispatching costs for the system.

To help minimize market distortions from differences in national RES support schemes, regional consultations are especially important. They would force Member State governments to engage in urgently needed discussions with each other.

**Q3. Please rate the importance of the following elements being included in Member States' national energy and climate plans with respect to renewable energy in ensuring that the plans contribute to reaching the objectives of at least 27% in 2030.**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Long term priorities and visions for decarbonisation and renewable energy up to 2050</i>	x				
<i>In relation to national/regional natural resources, specific technology relevant trajectories for renewable energy up to 2030</i>	x				
<i>Overview of policies and measures in place and planned new ones</i>	x				
<i>Overview of renewable energy trajectories and policies to 2050 to ensure that 2030 policies lie on the path to 2050 objectives</i>		x			
<i>Qualitative analysis</i>					x
<i>Trajectories for electricity demand including both installed capacity (GW) and produced energy (TWh)</i>	x				
<i>Measures to be taken for increasing the flexibility of the energy system with regard to renewable energy production</i>	x				
<i>Plans for achieving electricity market coupling and integration, regional measures for balancing and reserves and how system adequacy is calculated in the context of renewable energy</i>	x				

It is very important to have priorities, visions, trajectories and policies for RES production and decarbonisation in place up to 2030 and to take into account national/regional resources.

It is also very important to have trajectories for electricity demand and installed capacities as this is basic data for network planning (including cross-border interconnections), and for facilitating the completion of the IEM. These need to be consistent with the TYNDPs.

Flexibility of energy systems is one of the key factors in the future when very different technologies and fuels are in use at the same time.

It's very important to have plans for market integration and regional measures for balancing and reserve included in national plans. It is not very important to have trajectories up to 2050 as the level of uncertainties is too high for this period.

There is too little information about the idea and content of "qualitative analyses" to give an opinion.

**Q4. What should be the geographical scope of support schemes, if and when needed, in order to drive the achievement of the 2030 target in a cost-effective way?**

- Harmonised EU-wide level support schemes*
- Regional level support schemes (group of Member States with joint support scheme)*

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- *National support schemes fully or partially open to renewable energy producers in other Member States*
  - x *Gradual alignment of national support schemes through common EU rules*
  - *National level support schemes that are only open to national renewable energy producers*

**Rationale.** A more coordinated approach across Europe for RES support schemes is desirable because it would improve the economic efficiency of the energy transition in Europe by optimizing the development of RES based on States' endowment. This advocates for harmonizing the type and level of support – at least at the regional level — to achieve 2030 targets more cost-effectively, while raising significant political and economic challenges.

**Economic challenges.** Beyond the mere question of resources, if support schemes are to be harmonised, they should be designed with the aim to achieve (i) coherence between the development of the grid (interconnections in particular) and RES units and (ii) efficient geographic distribution of RES to allow using the benefits of complementarities between regions (particularly true for wind). A proper level of exposure to the wholesale market price is the obvious way to solve both these issues.

**Political challenges.** RES regionalisation appears to have many advantages. However cognisance needs be made of the MS subsidiarity on fiscal issues and the choice of generation mix, as well as natural geographic factors that may make some locations more advantageous for certain technologies.

Fully harmonized support schemes would also mean significant transfers of money between MS since consumers and/or taxpayers from poorly endowed countries pay for RES production occurring in countries where the resource is more abundant (possibly also creating jobs and providing cheaper electricity in these countries). Additional fiscal questions (depending on how the money financing RES is collected) and, in any case, the redistributive effects of such a harmonization will have to be dealt with by participating MS. In any case, close MS dialogue at regional level is needed to avoid that inconsistent support schemes distort market functioning, create SoS risks or lead to RES development not compatible with existing grid capabilities and planned regional grid investments. In this context, TSOs should be closely consulted to assess which volumes of RES can be integrated into the grid in which timeframe and at which costs. Building on such analysis, and based MS consensus, this could for instance lead to temporary limits for development of specific RES technologies in specific areas) and consequently on levels of support schemes.

Other challenges and barriers include:

- the lack of public acceptance for new generation (notably wind farms) in their vicinity (NIMBY) as this effect might be even increased for new generation that only contribute to the RES-target of a foreign country; and
- the lack of sufficient grid capabilities to incorporate and transmit increasing RES throughout Europe.

**Way forward.** Progressive harmonization should be encouraged through proper incentives (including evidences of common economic benefits) not immediately imposed by legislation, if the challenges above have not been solved. A pragmatic way to achieve harmonisation would be the establishment and implementation of a step-wise roadmap:

- (Regional) alignment of the type of support scheme;
- MS might in the transitional period open up the national support schemes partially
- Discuss fiscal harmonization: if a common fiscal ground is established the level of support should eventually converge regionally

ENTSO-E still believe that the least distortive and best harmonised way for effective RES support would lie in higher CO<sub>2</sub> prices and the removal of all subsidies to mature RES technologies; therefore support level

should progressively be reduced to allow market prices to drive dispatch and investment as much as possible.

**Q5. If EU-level harmonised /regional support schemes or other types of financial support to renewable energy projects would be introduced:**

**What hinders the introduction at the EU wide and/or regional scale?**

As indicated in our answers to Q 4 and 7, we believe the main obstacles to the introduction of regional (or European) RES support schemes are political (including legal, fiscal, public acceptance barriers). More specifically, setting up an EU-wide or regional support scheme is the responsibility of M S and the Council, as per article 194 of the TFEU, since:

- it affects their generation mixes
- and involves fiscal instruments

In addition, national targets have been set for 2020 and the national level was therefore the most relevant.

Other barriers include:

- different support schemes in place that cannot be retroactively withdrawn;
- different levels of RES development among Member States;
- different economic situations of Member States (and other circumstances);
- lack of public acceptance for new generation (notably wind farms) in their vicinity (NIMBY) that contribute to the RES-target of a foreign country; and
- lack of sufficient grid capabilities to incorporate and transmit increasing RES feed-in.

**How could such mechanism be activated and implemented?**

Political agreement is the key enabling factor. One way to facilitate this could be to involve the EC in the first instance. Before considering harmonization EC should develop a proposal, in close cooperation with MS, to prove (i) the feasibility of a harmonized support scheme at regional or EU level and (ii) show the added value of common support schemes in different regions. Such analysis should also clearly identify winners/losers and lead to non-binding recommendations (on geographical and technological scope, type of supports, finance/cost sharing, etc.). This could thus facilitate political consensus.

Provided this consensus is reached, in terms of practical implementation we foresee the following steps:

- Multilateral political decision of all involved countries in the respective region (or EU-wide with unanimous Council decision, hence unrealistic).
- Selection of the type of support scheme (e.g. a certificate system could make it easier as the SE-NO joint scheme has proven)
- Auctioning to determine level of support

It should be reminded that the cost sharing mechanism is probably the most important factor of political acceptability of such a mechanism; it will however inevitably exhibit that the consumers / taxpayers' participation to reaching the RES targets is not the same from one country to another which could turn out to be fairly unacceptable as well.

**What would be their scope (what type of projects/technologies/support mechanisms could be covered?**

- Acknowledging the fact that support to mature technologies should be phased out in the long run, this would need to cover only immature technologies.
- Such mechanisms should in any case cover only future installations.

### Who would finance them?

- EU co-funding could be a way to incentivise the convergence of support schemes.
- Ultimately, consumers or taxpayers will finance support schemes, therefore the question is more that of the vehicle: charges, levies or taxes (possibly on consumption) or a level of obligation (for green certificates). The financing system should not result in additional wholesale market distortions and ensure cost causality: since penetration targets are expressed in proportion of energy consumption, it would be logical that energy consumers pay because, in this case, they can participate to achieving the target by two ways: contributing to the support of RES (through a tax or an obligation) or reducing their consumption;
- In green certificate system, the financing vehicle question is embedded (through the obligation) but there is latitude to address the burden sharing.
- Finally, the alignment of support schemes goes hand in hand with that of exemptions regimes (e.g. large consumers, grid losses, self-consumption)

### How could the costs of such measures be shared in a fair and equitable way?

- Need to take into account all relevant costs and benefits.

**Q6. The current Renewable Energy Directive gives Member States the possibility to enter into various cooperation mechanisms (statistical transfers, joint projects and/or joint support schemes). Please expand on the possible new legislative and non-legislative measures that could be introduced to foster the development of cooperation mechanisms in the period beyond 2020.**

- The governance system of the 2030 framework needs to be clarified to understand whether cooperation mechanisms will remain relevant: statistical transfer and joint projects may be less relevant with non-binding country specific RES targets beyond 2030. A clear link between national CO2 targets should be defined.
- In general, either financial incentives (extra EU-funding for reaching RES targets beyond certain national benchmarks) or obligations (for instance binding minimum share of RES via cooperation mechanisms) could be introduced to facilitate the use of these mechanisms. As under the current RES Directive, such a cooperation mechanism should include cooperation with third countries.

#### In terms of non-legislative measures:

- The EC could facilitate MS dialogue by providing a platform to discuss enabling factors for cooperation mechanisms (infrastructure, spatial planning, environmental frameworks, etc.)
- Regional inter-governmental initiatives (e.g. PLEF) should be encouraged to support the coordination of national energy policies
- Voluntary regional targets could also foster the development of cooperation mechanisms
- Public transparency on RES development shares/trajectories planned by individual countries would also be an enabling factor

**Q7. The use of cooperation mechanisms has been limited to date. Which of the below factors do you consider important in explaining the limited recourse by Member States to cooperation mechanisms so far?**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Unclear legal provisions</i>			x		
<i>Administrative complexities</i>		x			
<i>Lack of cost-effectiveness / uncertain benefit for individual Member States</i>		x			
<i>Government driven process, not market driven</i>		x			
<i>Member States reluctant to see their taxpayers/ consumers' money used for investments outside their country</i>	x				

Political and economic challenges are the most relevant ones as highlighted in question 4. Moreover, despite goodwill from governments, cross-border political agreements to introduce such mechanisms are normally lengthy and complex.

Additional factors:

- Unclear financial penalties imposed on MS for not meeting targets.
- Possible society reluctance to accept installations in their own territory (due to NIMBY approaches) if most of the benefits are besides realised in other countries (employment, decrease of electricity prices, etc.);
- Member States have the responsibility of security of supply in their country. Investing abroad might not necessarily contribute to this goal.

**Q8. How could renewable electricity producers be fully or partially eligible for support in another Member State? Which elements would you include in a possible concrete framework for cross-border participation in support schemes? Any other consideration? Please explain.**

**Context.** EU Member States may today limit their support schemes to national producers to ensure its effectiveness. As confirmed recently by the EU Court of Justice (cf. Sweden v. Ålands Vindkraft AB), such a territorial limitation may in itself be regarded as necessary in order to attain the legitimate objective - promotion of the renewable energy sources in the production of electricity. This presents a barrier to free electricity trade though.

**Principles.** The benefits for MS in terms of achieving a RES penetration objective are unclear in absence of binding RES targets at national level. The relevance of allowing RES projects to be financed by the support scheme of another country indeed depends on the coordination/burden sharing mechanism allowing European States to reach a common RES penetration target. In particular it would make sense if this coordination mechanism results in something equivalent to national targets or benchmarks. Moreover, cross-border participation to RES support schemes would lead to a certain level of harmonization of the support schemes across countries. Indeed, projects would participate in support schemes in the countries where their levels are the most favourable and would settle in the countries where their expected benefits from the market are the highest (given the resources and the market price). From an overall economic perspective however, due to higher transaction costs, this appears as a less efficient solution, therefore less desirable alternative when compared to joint support schemes.



**Barriers.** However, heavy public acceptance issues are to be expected. Consumers/taxpayers would most likely be reluctant to see their money financing electricity production abroad unless they receive tangible economic benefits. Reciprocity may be necessary but it may be not sufficient to make such a scheme a winning deal for all parties. Where they are used at their full potential, statistical transfers would play the exact same role as enabling the participation of foreign producers into one’s support scheme; but since they fall under public decision-making, they allow States to keep exerting their fiscal prerogative and to judge whether the redistributive effects are acceptable or not. Lastly, infrastructure insufficiency to integrate RES production to be transferred (e.g. interconnections) can also represent an important barrier. That is why the process of opening up the schemes will have to be done in parallel to increasing interconnection capacity within and between the European countries.

**Alternative solutions.** Partial eligibility for support in another MS is quite unclear but States could open a limited part of their support schemes budget to foreign projects. This could benefit the overall efficiency of European support schemes whereas keeping the money transfers acceptable to consumers / taxpayers. Respective EU-wide or interstate controlling mechanisms will have to be introduced in order to avoid the double remuneration in several countries.

**Q9. Please assess what kind of complementary EU measures<sup>1</sup> would be most important to ensure that the EU and its Member States collectively achieve the binding at least 27% EU renewable energy target by 2030:**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>EU-level incentives such as EU-level or regional auctioning of renewable energy capacities</i>		<i>x</i>			
<i>EU-level requirements on market players to include a certain share of renewables in production, supply or consumption</i>					<i>x</i>
<i>EU-level financial support (e.g. a guarantee fund in support of renewable projects)</i>		<i>x</i>			

<sup>1</sup> Without prejudice of the actual funding mechanism, where required, of the complementary EU measures

<i>EU-level support to research, innovation and industrialisation of novel renewable energy technologies</i>	<i>x</i>				
<i>Enhanced EU level regulatory measures</i>					<i>x</i>

An important complementary measure to achieve the collective goal of 27% EU renewable energy target is to ensure that infrastructures development is coherent with the 27% goal in order to use the RES resources in the more efficient manner (see also answer to Question 10).

EU level incentives are important to achieve the binding EU RES target but they should be seen as complementary measures on top of any other support schemes and should be open to the non-supported RES projects. EU wide or regional auctioning for RES capacities should not hinder the application of TFEU 194 (for instance MS could decide to participate or not).

**Q10. The Energy Union Framework Strategy sets the ambition of making the European Union the global "number one in renewables". What legislative and non-legislative measures could be introduced to make/strengthen the EU as the number one in renewables? Has the RED been effective and efficient in improving renewable energy industrial development and EU competitiveness in this sector?**

ENTSO-E welcomes the EU's ambition of making the European Union the global "number one in renewables". The EU should now define a stable, clear and coherent RES legislative framework for 2030. Indeed, considering that transmission network planning occurs at least a decade in advance, transparency, clarity and early agreement will facilitate ENTSO-E's and TSOs' responsibility for the planning, investing and operating of the grid necessary to integrate RES and ensure system security in the long term.

Transmission system operators (TSOs) have difficulties implementing the required investments due to lengthy permit granting procedures, public opposition and unprecedented capital requirements. Therefore, a clear political willingness and commitment to build the required infrastructure, at EU, national and regional level, underpinned by more consistent regulatory frameworks, are needed to support the process.

Over the next 15 years, in the lead up to 2030, economic drivers will exert a stronger influence on the development of the power system than it is presently the case. As renewable energy technologies mature, market mechanisms and exposure of RES to price signals will need to replace old subsidy schemes. The phase-out of support for mature renewable technologies in the post-2020 period means that the market (along with carbon pricing) will need to provide appropriate signals for investors to enter the renewables sector. The current levels of RES and the resulting impact on electricity markets require these sources to be fully integrated into the market. With more ambitious RES targets, market integration of renewables will become even more important.

The target model for European electricity markets needs to be implemented as soon as possible. ENTSO-E's member TSOs are already working on implementing the IEM through network codes, regional projects and initiatives. Moreover, to continuously match the physical reality of the changing power system and to integrate adequately the increasing share of renewable energy sources, the market design needs to be reviewed, in particular to ensure correct price signals for all necessary investments.

Another complementary objective to support the development and integration of RES is to stimulate innovation. In view of more decentralised (RES) generation and active demand response, significant innovation potential lies for instance with new actors from the ICT sector, independent aggregators, prosumers and storage solutions. The TSO community thus needs to be prepared for game-changing modifications such as low-cost local storage and must be prepared to define the cooperation with these actors in activities to smarten the grids.

Last but not least, energy policies, and in particular the ones leading to financial support to specific technologies (like RES), should preserve and enhance the competitiveness of European industries. Europe should ensure a level playing field to avoid that non-European manufacturers unduly benefit at the expense of European ones leading to a “leakage” of companies, jobs, technologies and know how.

## 2. Empowering consumers

**Q11. How would you rate the importance of the following barriers for consumers to produce and self-consume their own renewable energy?**

	<i>Very important barrier</i>	<i>Important barrier</i>	<i>Not very important barrier</i>	<i>Not important barrier</i>	<i>No opinion</i>
<i>Self-consumption or storage of renewable electricity produced onsite is forbidden</i>	x				
<i>Surplus electricity that is not self-consumed onsite cannot be sold to the grid</i>	x				
<i>Surplus electricity that is not self-consumed onsite is not valued fairly</i>		x			
<i>Appliances or enabler for thermal and electrical storage onsite are too expensive</i>		x			
<i>Complex and/or lengthy administrative procedures, particularly penalising small self-consumption systems</i>		x			

<i>Lack of smart grids and smart metering systems at the consumer's premises</i>		x			
<i>The design of local network tariffs</i>				x	
<i>The design of electricity tariffs</i>				x	

*Other? Please explain.*

Self-consumption (or self-generation) is an important aspect of customer empowerment and choice. From the TSO perspective, it can also be useful to strengthen energy awareness in customers, which we hope then lead to more flexibility and price responsiveness on the demand and self-generation side.

Nevertheless, an increasing self-consumption penetration without suitable regulation and technical control may raise network issues that should be duly considered.

- For a grid-connected prosumer, individual optimisation can be driven by the minimisation of payable energy tariffs, taxes and levies, which would only be beneficial to the prosumer because it in turn increases the burden of cost recovery schemes on all other consumers. This stimulating effect of taxes and levies on self-consumption is not a desirable but a distortive effect since it prevents both efficient allocation of distribution grid costs and efficient response of the self-consumption and the local demand to market prices.

- In the case of self-consumption from variable sources, support from the electric system may be needed when on site generation is not enough to complete the required consumption. The prosumer must contribute to the cost of the back-up generation and grid costs that allow the reception of this back-up supply.

- In this context, the introduction of some more capacity –rather than energy- based distribution tariffs would mitigate these problems and would also be better from the cost causation viewpoint.

With specific reference to the barriers, we believe the legal ones – where present – are the most important. The lack of infrastructure (i.e. smart meters) is also an important obstacle.

**Q12. In general, do you think that renewable energy potential at local level is:**

- Highly under-exploited*
- Under-exploited*
- Efficiently / fully exploited*
- Over-exploited (i.e. beyond cost-effectiveness)*
- No opinion*

**Q13. How would you rate the importance of the following barriers that may be specifically hampering the further deployment of renewable energy projects at the local level (municipalities and energy cooperatives):**

	<i>Very important barrier</i>	<i>Important barrier</i>	<i>Not very important barrier</i>	<i>Not important barrier</i>	<i>No opinion</i>
<i>Lack of support from Member State authorities</i>					
<i>Lack of administrative capacity and/or expertise/knowledge/information at the local level</i>					
<i>Lack of energy strategy and planning at local level</i>					
<i>Lack of eligible land for projects and private property conflicts</i>					
<i>Difficulties in clustering projects to reach a critical mass at local level</i>					
<i>Lack of targeted financial resources (including support schemes)</i>					
<i>Negative public perception</i>					

**Q14. Please rate the appropriateness of stronger EU rules in the following areas to remove barriers that may be specifically hampering the further deployment of renewable energy projects at the local level:**

	<i>Very appropriate</i>	<i>Appropriate</i>	<i>Not very appropriate</i>	<i>Not appropriate</i>	<i>No opinion</i>
<i>Promoting the integration of renewable energy in local infrastructure and public services</i>					
<i>Supporting local authorities in preparing strategies and plans for the promotion of renewable energy</i>					
<i>Facilitating cooperation between relevant actors at the local or municipal level</i>					

<i>Facilitating access to targeted financing</i>					
<i>EU-wide right to generate, self-consume and store renewable electricity</i>					
<i>Measures to ensure that surplus self-generated electricity is fairly valued</i>					
<i>Harmonized principles for network tariffs that promote consumers' flexibility and minimise system costs</i>					

**Q15. Should the current system for providing consumers with information on the sources of electricity that they consume be further developed and improved?**

*If not, why? If yes, how? Should the current Guarantees of Origin (GO) system be made the mandatory form of information disclosure to consumers? Should other information, such as e.g. CO<sub>2</sub> emissions be included? Should it be extended to the whole energy system and include also non-renewable sources? Other ideas? To what extent has the current GO system been successful in providing consumers with information on the sources of electricity that they consume?*

Guarantees of Origin (GOs) and Electricity Disclosure (i.e. a process whereby electricity suppliers inform their customers about the energy origin and environmental impacts of sold electricity) belong together, because Electricity Disclosure is the sole purpose of GOs. The establishment and maintenance of the well-functioning pan-European GO system is deemed to facilitate the promotion of renewables to the consumers and shall make (cross-border) trade of renewables more transparent.

Some countries already support the issuance of GOs for electricity produced from non-renewable energy sources. This gives the suppliers the possibility to differentiate its products. A GO mechanism solely for renewable energy might not be able to deliver fully reliable electricity disclosure information, as most of electricity disclosure would still be based on uncorrected statistics or self-declarations. This way, renewables also bear most of the cost of electricity tracking and disclosure systems. The GOs for other energy sources than renewables should be at least voluntary. Furthermore, the awareness of Electricity Disclosure systems might be improved by developing clear rules for what needs to be disclosed to consumers, emphasising the role of GOs as a disclosure mechanism. The absence of mandatory GOs for all sources of electricity might result in a less complete picture of electricity supply across Europe, regardless of source. The benefits of establishing mandatory GOs for all sources should be however compared to its costs, especially considering additional administrative burdens on producers, auditors, authorities, grid companies, etc.

Furthermore, the conditions under which Member States accept imported GOs, and permit these to be used within their disclosure schemes (recognition criteria) should ideally be the same independently from the GO's origin (equally applicable to the non-EU GOs), and should be harmonised across Europe.

The reliable tracking of electricity and therefore the associated carbon emissions might be helpful in supporting consumers' ability to take responsibility and influence the environmental impacts of their electricity consumption, thus driving forward the decarbonisation of the European economy not only from the supply, but also from the demand side. One of the obstacles might be the difficulty in finding the proper calculation method.

### 3. Decarbonising the heating and cooling sector

**Q16. Please rate the importance of the following barriers in hampering the deployment of renewable heating and cooling in the EU:**

	<i>Very important barrier</i>	<i>Important barrier</i>	<i>Not very important barrier</i>	<i>Not important barrier</i>	<i>No opinion</i>
<i>Real or perceived incoherence in existing EU policies (such as RED, EED and EPBD)</i>					
<i>Lack of administrative capacity and/or expertise/ knowledge/information at the national and local level</i>					
<i>Lack of energy strategy and planning at the national and local level</i>					
<i>Lack of physical space to develop renewable heating and cooling solutions</i>					
<i>Lack of requirements in building codes and other national or local legislation and regulation to increase the share of energy from renewable sources in the building sector</i>					
<i>Heating and cooling equipment installers lack sufficient knowledge or information to offer renewable energy alternatives when asked to replace fossil fuel heating and cooling equipment</i>					

<i>Lack of targeted financial resources and financing instruments</i>					
<i>Lack of definition and recognition of renewable cooling</i>					
<i>Lack of electricity market design supporting demand response, decentralised energy and self-consumption and thermal storage in buildings and district systems</i>					
<i>Lack of mapping tools to identify the resources potential at regional scale with local renewable energy</i>					
<i>Lack of tools and information to compare the lifecycle costs of the various alternative heating and cooling alternatives</i>					
<i>Negative public perception</i>					



**Q17. Please rate the most effective means of addressing these barriers and advancing the decarbonisation of EU heating and cooling supply:**

	<i>Very effective</i>	<i>Effective</i>	<i>Not very effective</i>	<i>Not effective</i>	<i>No opinion</i>
<i>Renewable heating and cooling obligation<sup>2</sup></i>					
<i>Requirement for energy suppliers and/or distributors to inform consumers of the costs of heating and cooling and to offer renewable heating and cooling solutions</i>					
<i>Requirement that all urban and municipal infrastructure upgrades (energy infrastructures, and other relevant infrastructure, such as sewage water, water and waste chains) make it possible and promote the distribution and use of renewable energy for heating and cooling and hot water generation</i>					
<i>Measures supporting best practices in urban planning, heat planning, energy master planning, and project development</i>					
<i>Criteria and</i>					

<sup>2</sup> ‘Renewable energy obligation’ means a national support scheme requiring energy producers to include a given proportion of energy from renewable sources in their production, requiring energy suppliers to include a given proportion of energy from renewable sources in their supply, or requiring energy consumers to include a given proportion of energy from renewable sources in their consumption.

<i>benchmarks for promoting district heating and cooling taking into consideration the local and regional conditions</i>					
<i>Nearly zero-energy building (NZEB) standards to include a mandatory minimum use of renewable energy</i>					
<i>Including systematically renewable energy production in buildings' energy performance certificates</i>					
<i>The promotion of green public procurement requirements for renewable heating &amp; cooling in public buildings</i>					
<i>Heating and cooling equipment installers should present renewable energy alternatives when asked to replace fossil fuel heating and cooling equipment</i>					
<i>Develop best practices for enterprises, including SMEs, to integrate renewable heating and cooling into their supply chains and operations</i>					
<i>Requirement to consider renewable energy alternatives in subnational, national, regional or EU security of supply risk preparedness plans and emergency procedures</i>					
<i>Targeted financial measures</i>					

## 4. Adapting the market design and removing barriers

**Q18. In your view, which specific evolutions of the market rules would facilitate the integration of renewables into the market and allow for the creation of a level playing field across generation technologies? Please indicate the importance of the following elements to facilitate renewable integration:**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>A fully harmonised gate closure time for intraday throughout the EU</i>		x			
<i>Shorter trading intervals (e.g. 15 min)</i>		x			
<i>Lower thresholds for bid sizes</i>			x		
<i>Risk hedging products to hedge renewable energy volatility</i>	x				
<i>Cross border capacity allocation for short-term markets (i.e., some capacity being reserved for intraday and balancing)</i>			x		
<i>Introduction of longer-term transmission rights (&gt; 3 years)</i>				x	
<i>Regulatory measures to enable thermal, electrical and chemical storage</i>		x			
<i>Introduction of time-of-use retail prices</i>	x				
<i>Enshrine the right of consumers to participate in the market through demand response</i>	x				

### **A fully harmonised gate closure time for intraday throughout the EU**

It is not clear whether the expression “gate closure time” belong to the trading or to the scheduling. As in some of the EU countries, there is no scheduling obligation for RES generators, we can assume that the text refers to the GCT of the intraday trading.

ENTSO-E and its members TSOs are currently engaged in shortening cross-zonal intraday gate closure times to maximum 1h prior to real time. We believe that the harmonization of the cross-zonal intraday trading gate closure time is an important but not decisive factor in relation to RES integration. The existence of different GCTs impact the EU-wide market integration in general as they limit cross-border trading between the different markets. More decisive for RES integration is to shorten the time period between the cross-zonal GCT and the delivery, so to improve the planning accuracy of weather-dependent generations.

#### **- Shorter trading intervals (e.g. 15 min)**

Shorter trading periods could impact positively the planning accuracy of weather-dependent generations but this improvement has its limits (e. g. best available weather forecasts, planning costs etc.) and needs to be compatible with TSOs’ operational processes and implementation challenges. Moreover, they may also complicate the development of power exchanges algorithms, considering the future co-optimisation of energy and reserves, the further geographical extensions of market coupling and the introduction of new tailored products. It should be highlighted that the trading interval is different from the settlement period.

#### **- Lower thresholds for bid sizes**

The bid sizes used on most of the European day-ahead and intraday markets are sufficient (generally the minimum is 0,1 MW) and do not hinder the integration of RES in the market. For ancillary services markets, the right thresholds will be defined by the product definitions provided in the Network Code EB.

#### **- Risk hedging products to hedge RES volatility and linked to long term scarcities**

ENTSO-E advocates for the emergence of hedging products such as, for instance, intraday cap futures recently introduced on power exchanges. Provided all energy market participants are subject to balance responsibility, imbalance prices are reflective of full system costs, and market parties are incentivised to balance their position in intraday markets rather than in balancing, hedging products should thus emerge spontaneously because the less flexible BRPs will demand risk hedging opportunities which should be offered by the more flexible BRPs. Such hedging products would have the ability to value flexibility and translate it into a more predictable and bankable revenue stream compared to the underlying commodity; this will further stimulate investments. Hedging products will act as insurance for market participants to manage their risk of not fulfilling the necessary capability (e.g., having contracted enough capacity/flexibility to ensure a continuous supply for themselves or for their customers).

Hedging instruments can protect market parties and end consumers from undesirable volatility.

#### **- Cross border capacity allocation for short-term markets (i.e., some capacity being reserved for intraday and balancing)**

Cross border capacity allocation already exists for short term on most of the borders and it is a mandatory requirement set by the CACM Guidelines. This process should be differentiated from capacity reservation, which is foreseen for balancing by the Network Code EB and will be implemented where beneficial. With regards to intraday capacity reservation, this is currently not foreseen in any current legislation (CACM guidelines). The issue should be thus further analysed and discussed with stakeholders before any EU measure is proposed.

#### **- Introduction of longer-term transmission rights (> 3 years)**

We do not see that the introduction of longer-term transmission rights would facilitate the integration of RES generation into the market. Regarding RES generation, short-time planning would be much more critical and relevant.

**- Regulatory measures to enable thermal, electrical and chemical storage**

Storage, but also flexible generation, demand response and interconnectors can contribute to system adequacy and are therefore important to enable RES integration. EU regulatory measures should take into account the potential of each solution and be technology neutral to ensure cost effectiveness.

**- Introduction of time-of-use retail prices**

The most efficient tool for maximising the flexibility potential of customers would be to introduce dynamic pricing on retail markets. Time-of-use pricing could be less effective because of its static nature which does not reflect real-time situations of the market.

**- Enshrine the right of consumers to participate in the market through demand response**

, accelerated change in retail electricity markets is crucial to enable DSR for all customers via dynamic pricing and hedging instruments. It will achieve a better functioning market in each Member State and Europe-wide, while increasing RES integration and maintaining security of supply.

**Q19. Currently, some exceptions from the standard balancing responsibilities of generators exist for energy from renewable sources. In view of increasingly mature renewable generation technologies and a growing role of short-term markets, is time ready to in principle make all generation technologies subject to full balancing responsibilities?**

- Yes, in principle everyone should have full balancing responsibilities*
- No, we still need exemptions*

As a general principle, the legislative framework and market rules should stipulate that RES producers are bound by the same duties and responsibilities as all other electricity generators. Providing incentives for RES producers to correctly forecast their feed-in and hedge their volatility will improve system security and its economic efficiency.

If provided with the right incentives for BRPs to be balanced during real time operation, BRPs will physically act more in line with system needs. BRPs can use different tools to manage their risks of imbalances and reduce the associated costs: improve their monitoring and take actions in the day-ahead and intraday markets, outsource this task to third parties, or buy specific hedging products.

**Q20. Please assess the importance of stronger EU rules in the following areas to remove grid regulation and infrastructure barriers for renewable electricity deployment:**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Treatment of curtailment, including compensation for curtailment</i>		<i>x</i>			
<i>Transparent and foreseeable grid development, taking into account renewable development and integrating both TSO</i>	<i>x</i>				

<i>and DSO level and smart technologies</i>					
<i>Predictable transparent and non-discriminatory connection procedure</i>		x			
<i>Obligation/priority of connection for renewables</i>			x		
<i>Cost of grid access, including cost structure</i>			x		
<i>Legal position of renewable energy developers to challenge grid access decisions by TSOs</i>				x	
<i>Transparency on local grid congestion and/or market-based incentives to invest in uncongested areas</i>	x				

*Comments and other ideas, including whether there are any consideration concerning gas from renewable energy sources, for instance expansion of gas infrastructure, publication of technical rules, please explain.*

- Curtailments: no need of detailed EU definitions but general common principles would be useful
- Transparent grid planning is important but this is already done via national, regional plans and TYNDP. No need of stronger EU rules
- Priority connection rules for RES: these are already sufficiently defined by the RES directive. Any further harmonisation should rather be defined at regional level.
- Cost of grid access: no need for EU harmonisation, although differences can hamper the development of regional support schemes. Also, the application of different G-tariffs in each MS could distort the functioning of markets and the participation of RES in it. Cost structure (cost of grid access) should be considered by taking into account the lower load factor of RES, giving to grid reinforcement and insurance value.

**Q21. Which obstacles, if any, would you see for the dispatching of energy from all generation sources including renewables on the basis of merit order principles? Should there be any exemptions in some specific cases?**

- Yes, exemptions are necessary*  
 *No, merit order is sufficient*

*Please specify: If yes, in which case and why? What are the lessons from the implementation of RED?*  
 There are no real obstacles to integrating variable RES to the dispatch based on merit order. Though it may be necessary to set exemptions for immature technologies in a transitional phase, the long term goal should be that all technologies are treated equally.

Preferential treatment for RES might not be compatible with the current functioning of the wholesale market (bids are not tagged to correspond to RES production or dispatchable production) but could be applied in a unit based balancing market. In any case, preferential treatment for RES should only be allowed if it does not increase dispatching costs. In this sense the following exemptions

might, for example, be implemented in order to integrate the highest possible share of energy from renewable sources.

At the same bid price:

- Renewable units should have dispatching priority versus non-renewable technologies.
- Among renewable units, non dispatchable technologies should have priority versus dispatchable technologies, which would reduce spillages.
- Renewable units providing systems services (i.e. voltage control, regulation and balance services) should have priority versus units that do not provide these services. This measure would help the SO to keep the stability and security of the electric system

Last but not least, priority rules, where applied, should be harmonised at regional level to avoid market and operational distortions.

**Q22. Please assess the importance of stronger EU rules in the following areas to remove administrative barriers to renewable energy deployment:**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Creation of a one stop shop at national level to allow for more streamlined permitting procedures</i>		x			
<i>Online application for permits</i>					x
<i>A defined maximum time-limit for permitting procedures, and effective consequences if deadline is missed</i>		x			
<i>Harmonisation of national permitting procedures</i>		x			
<i>Special rules for facilitating small-scale project permitting, including simple notification</i>		x			
<i>Pre-identified geographical areas for renewable energy projects or other measures to integrate renewable energy in spatial and environmental planning</i>	x				

*Any other views or ideas? To what extent has the RED been successful in reducing unnecessary administrative barriers for renewable energy projects in the Member States? Please specify. Max 500 words*

- Inspiration for one-stop-shop permitting can be taken from Article 8 in Regulation 347/2013, which had a similar objective as to facilitate Member State permitting procedures for Projects of Common Interest. It is of relevance that such competent bodies are activated, and lessons learned could be drawn from cases where the establishment of such body was delayed.
- The objective of the proposal “Special rules for facilitating small-scale project permitting, including simple notification” is supported; administrative burden for smaller projects should be absolutely minimized. Nevertheless this should not result in a fit-and-forget approach. A large number of small units connected to the European grid, can have a significant impact in aggregate in case of particular system disturbances (e.g. the March 2015 solar eclipse). For this reason, technical rules, as prescribed in network codes, need to be complied with in absolute certainty. A relevant system operator needs to have the means to enforce and check this.

**Q23. Please identify precise challenges with regard to grid regulation and infrastructure barriers in EU Member States that you are aware of.**

**More infrastructure needed, poor public acceptance.** Larger and more volatile flow over long distances in Europe demand more interconnections, with little acceptance from local populations impacted by new lines. An ENTSO-E member survey showed that authorization processes and public acceptance pose in most countries (90%) the strongest challenges in developing the grid infrastructure needed to secure a renewable revolution and grid operation. For some EU countries (10%) the financing and regulatory frameworks for infrastructure are experienced as being more prominent challenges.

**Changing services require to modify the tariff structure.** Efficiency and accuracy of the signals delivered by transmission tariffs structure: the locational and temporal signals provided by the tariff should be refined and strong enough to foster efficient investment decisions and efficient operations by network users. Similarly, the allocation of costs between consumers and generators, as well as the allocation between an energy-related component and a power-related component, should reflect as much as possible the costs caused by two different services delivered by the transmission network to its consumers: delivering energy, but also providing consumers with a possibility to withdraw energy from the network with a guaranteed quality at any time. With decentralized generation and on-site consumption ("prosumers"), the network is increasingly creating value by providing insurance against shortage rather than by carrying large amounts of energy. Capacity-based tariffs might then become more cost-reflective than energy-based tariffs.

Simplicity and transparency of the transmission tariff structure is also important, so that the signals implemented can stand out and be taken into account by network users.

**New challenges on the technical regulation of the grid.** With a growing amount of RES generation and a decreasing part of dispatchable generations, the voltage control and the frequency stability of the power system (ramps, inertia...) will be challenged.



**Q24. How would you rate the administrative burden and cost of compliance with the RED for national, regional and local authorities?**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Administrative burden</i>					
<i>Cost of compliance</i>					

**Q25. Please rate the importance of stronger EU rules in the following areas to remove barriers relating to renewable energy training and certification:**

	<i>Very important</i>	<i>Important</i>	<i>Not very important</i>	<i>Not important</i>	<i>No opinion</i>
<i>Incentives for installers to participate in certification/qualification schemes</i>					
<i>Increased control and quality assurance from public authorities</i>					
<i>Understanding of the benefits and potential of renewable technologies by installers</i>					
<i>Mutual recognition of certificates between different Member States</i>					

**Q26. How can public acceptance towards renewable energy projects and related grid development be improved?**

Insufficient public acceptance is one of the most significant obstacle to the construction of extra-high voltage power lines. Presently one out of three TYNDP projects is delayed either due to lengthy permitting procedures or a lack of public acceptance. Fostering power lines acceptance by the public is thus crucial to meet national and European climate and energy policy objectives.

The lack of public acceptance is primarily a local problem and needs to be resolved primarily at this level. It should include public participation in the decision-making process by involving the broadest possible group of stakeholders and providing them with all information on the projects (objectives, assumptions and adopted solutions for preparation and realization of investment).

A lack of public acceptance and political support contributes to slow down or even impede the permitting process. It may also shed doubt on the need for new power lines. It is useful to engage the public at the early project stages to shift participation away from perceived sheer information sharing. To reach this aim, it remains necessary to increase the public's grasp on the need for new high voltage lines. TSOs are exploring and piloting tools and methodologies, often in cooperation with NGOs (e.g. RGI, Birdlife, etc.) to go beyond traditional communication. The role and position of these early participation tools (such as round tables, recently employed in Germany by TSOs for instance) must be clarified. Such tools have been employed recently. Legally, there is no scope for consensual or self-governed decision making. What is

possible, however, is formalising an agreement that was taken between the stakeholders and the project promoter in the context of the permit granting or corridor finding procedure.

Permit granting authorities should take account of these agreements when they exist. Taking account of agreements in the authority’s planning discretion does not endanger the legality of its decision. Such options may help increase acceptance more than a proliferation of further regulations on public participation options of which – at least in some countries – there are now many.

Specific communication tool and compensation mechanisms at the local level are also key to improve public acceptance. However, public acceptance needs also to be addressed beyond the local level. TSOs need coherent political support across all levels (European, national, local).

The means that TSOs are allowed to use for project communication are in some countries too restrictive; an assessment and review of the respective regulations by NRAs (possibly supported by ACER through a benchmark and best-practice) is recommended.

## 5. Increase the renewable energy use in the transport sector

**Q27. To what extent has the RED been successful in addressing the following EU transport policy objectives?**

	<i>Very successful</i>	<i>Successful</i>	<i>Not very successful</i>	<i>Not successful</i>	<i>No opinion</i>
<i>Contribute towards the EU's decarbonisation objectives</i>					
<i>Reduce dependency on oil imports</i>					
<i>Increase diversification of transport fuels</i>					
<i>Increase energy recovery from wastes</i>					
<i>Reduce air pollution, particularly in urban areas</i>					
<i>Strengthen the EU industry and economy competitiveness</i>					
<i>Stimulate development and growth of innovative technologies</i>					
<i>Reduce production costs of renewable fuels by lowering the level of investment risk</i>					
<i>Facilitate fuel cost reduction by integration of the EU market for renewable fuels</i>					

**Q28. Please name the most important barriers hampering the development of sustainable renewable fuels and renewable electricity use in transport?**

N/A

**Q29. Please rate the most effective means of promoting the consumption of sustainable renewable fuels in the EU transport sector and increasing the uptake of electric vehicles:**

	<i>Very effective</i>	<i>Effective</i>	<i>Not very effective</i>	<i>Not effective</i>	<i>No opinion</i>
<i>Increased use of certain market players' obligations at Member State level</i>					
<i>More harmonised promotion measures at Member States level</i>					
<i>The introduction of certain market players' obligations at the EU level</i>					
<i>Targeted financial support for deployment of innovative low-carbon technologies (in particular to the heavy duty transport and aviation industry)</i>					
<i>Increased access to energy system services (such as balancing and voltage and frequency support when using electric vehicles)</i>					
<i>Increased access to alternative fuel infrastructure (such as electric vehicle charging points)</i>					