ENERGY SOLUTIONS HIGH-LEVEL MEETING ON THE FUTURE ENERGY MARKET

Reflections from 31st January 2017, 17:00-19:00, Sofitel Europe Brussels

Energy Solutions High-Level Reflections

Energy Solutions high-level reflections outline key challenges and solutions to legislation on the future energy market identified by high-level representatives from the European Commission, the European Parliament and industry to discuss the legislative proposal on the market design.

Reflections sum up key messages identified across national, sectorial and individual interests: [1]

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1. **The proposals on the future market design contain the right elements to build a market fit for very high shares of renewable electricity.** The proposed market design is robust for a significant share of renewable energy in the electricity mix but requires a higher ETS price.

2. **Integrate legislation across sectors in the deliberations of directives with specific focus on governance of the Energy Union to ensure that Member States actively assess and pursue integrated opportunities** across electricity, heating/ cooling, buildings, transport and energy markets to ensure policy coherence, cost efficiency and predictability for market players.

3. **Harvest significant saving potential in households by activating consumer behavioural changes** with greater consumption transparency through sub-metering mandatory legislation, passing on sub-metering cost to the tenant, evaluating the service of the sub-metering services, and enforcing including administration fines for non-compliance.

4. **Scale up renewables in households by standardizing frameworks and energy labels surveillance across Europe**, including standardization of test methods of products, testing products and imposing penalties of non-conformities.

5. **Prioritize untapped low-cost renovation investments over high-cost renovations** to facilitate a step by step renovation for buildings and industry. Additionally improve credibility of energy performance certificates, enlarge energy audit obligations, and promote active houses.

6. **Improve predictability and confidence in renewable energy** by incorporating a requirement on public support schedules in the national energy and climate plans and allowing Member States to design tender systems according to different technology profiles to provide a clear and sufficient project pipeline for investors and domestic market.

7. **Prioritize innovation to encourage more in number, more ambitious and more cross-border projects. Solutions include** offering retirement programs to outdated, inefficient technologies that allow the upgrade of the system as a whole or using the CO2 price system to move the system to a decarbonised production mix.

8. **Increase system flexibility also with using digitalization** to ensure the reliability of power delivery and quality, integrate new technologies and neutralize cyber security threats etc.

9. **Improve finance and investments through enabling environments** including regulatory stability, aggregated projects, risk-sharing, investment platforms and funds that encourage public-private partnerships and co-financing.

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[1] *Positions presented do not reflect the positions of the individual representative, but are a sum of discussions across national, sectorial and individual interests within the European Parliamentary Network on Energy Solutions (Energy Solutions), ref. final page adopted upon launce of Energy Solutions, SS2016.*

Reflections are elaborated into solutions where possible in the following:

1. The market design proposals contain the right elements to build a market fit for high shares of green electricity. The emphasise in the market design legislation on finer resolution and more trading closer to delivery together, clear rules for curtailment, equal access to balancing and other ancillary services market combined with system integration solutions is the way forward. Crucial for making the market healthier is a severe strengthening of the ETS closing inflexible and carbon-intensive overcapacity.

2. Integrate legislation across sectors in the deliberations of directives with specific focus on governance of the Energy Union to ensure that Member States actively assess opportunities in e.g. electricity, heating/ cooling, buildings, transport and energy markets to ensure policy coherence, cost efficiency and predictability for market players. Integrated energy solutions are present within e.g. district heating that has the potential to utilise various energy sources to heat buildings, however, it remains to be considered an important element in the governance. Additionally waste heat offers a renewable energy source and should be treated as such to incentivize the utilisation of it.

3. Harvest significant saving potential in households by activating consumer behavioural changes with greater consumption transparency through sub-metering mandatory legislation, passing on sub-metering cost to the tenant, evaluating the service of the sub-metering services, and enforcing administration fines for con-compliance. Thus, consumption transparency enables consumers to reduce their consumption with 1) mandatory legislation through house-owner obligations on equipment and legal access to install and meter read as well as articulate unambiguous guidelines for consumption-based billing; 2) pass on sub-metering costs to the tenant to merge with saving gains.

4. Scale up renewables in households by standardizing frameworks and energy labels surveillance across Europe, including standardizing test methods of products, testing products and imposing penalties of non-conformities. 1) Standardize test methods with CERTIA, EUROVENT, EHPA, SP, MCS speed up the introduction of energy efficiency products, reduce costs of testing that reduce the cost of the products. 2) Surveillance of energy labels and other specs by testing products and introducing penalties in case of non-conformities.

5. Prioritize untapped low-cost renovation investments over high-cost renovations in reconsidering systems that facilitate a step by step renovation of buildings and industry. Low-cost step by step renovation of buildings and industry is possible with smart installation options that reduce the technical installation, service and maintenance time and costs.

6. Improve predictability and confidence in renewable energy by incorporating a requirement on public support schedules in the national energy and climate plans and allowing Member States to design tender systems according to different technology profiles to provide a clear and sufficient project pipeline for investors and domestic market. One solution would be to review targets along developments.

7. Prioritize innovation to encourage more in number, more ambitious and more cross-border projects while offering retirement programs to outdated, inefficient technologies that allow the upgrade of the system. The upgrade of the system will unlock long-term operating results based on the ability to develop, introduce and market new and innovative products and services, modify existing products and services etc.

8. Increase system flexibility with digitalization to balance the fuel mix, ensure the reliability of power delivery and quality, integrate new technologies and neutralize cyber security threats etc. for an interconnected electricity value chain. The electricity value chain encompasses three elements including 1) generation based on a mix of conventional and renewable sources, 2) a digital grid that connects generation and consumption for

multidirectional flows of energy and information, 3) digital consumption to improve consumption patterns and add generation and storage capacity.

9. Improve finance and investments through enabling environments including regulatory stability, aggregated projects, risk-sharing, investment platforms and funds that encourage public-private partnerships and co-financing.

Reflections rest on the below principles that sum up prerequisites for a viable electricity market design.

Principles on the Future Energy Market

Principles below serve as a guide for the design of the future energy market in delivering the Energy Union.

Principles sum up key perquisites for a viable electricity market design:

1. **Investments and dispatch of capacity shall be market based.** Where necessary, due to high costs for electricity generation capacities (but with significant potential for cost reductions) or high regulatory risks, support or hedging must be available for renewable sources of electricity. Reliability of supply should be ensured through market prices and fair competition across generation and demand-side response resources with hedging products where cost efficient. Scarcity pricing is central part of the solution in enabling a well-functioning market and evolution of hedging products.

2. **Internal energy market rules should be enforced without political interference.** Capacity between markets (bidding zones) should be determined by the full capacity of the transmission system at the crossing. Any deviation from this benchmark should be justified from the perspective of market efficiency.

3. **All products and services should be remunerated individually to increase cost efficiency and lower overcapacity.** Market-wide capacity mechanisms (CRMs) if not well-designed with a set of rules are poor at differentiating among capacity and demand-side response resources on the basis of their overall services offered, e.g. flexibility.

4. **TSO must be incentivized to act towards a socioeconomic optimum regarding both grid investments and grid use.** TSOs are companies or institutions with incentives like any other. With the increasing role of interconnectors and increasing trade cross borders, the incentives of TSO must be those of overall cost efficiency for Europe as a whole.

5. **Consumers should have access to all relevant consumption data and be able to participate on equal footing in the market.** Today consumers do not have access to the relevant data nor aggregators to take part in the energy market. DSO should as a neutral market facilitator seek to make it possible for consumers to participate in the electricity market, e.g. with flexibility sources.

6. **Policies need to assure that the incentives to consumers deliver cost-efficient solutions in combination to the final output potential of (installed) RES.** In particular renewable energy provided by district heating and cooling networks has to compete on equal footing with RES provided by installations in the building.

Issues from Political Energy Solution Makers

Issues from political energy solution makers across political parties and member states address the pathway towards an Energy Union:

"The Energy Union was announced an ambition only one year ago – now legislation by legislation a reality: The future energy market requires collaboration across very real challenges in finding solutions. One solution is right at our feet: A fully interconnected energy grid to allow a genuine cross-border energy market. We need a competitive internal energy market!"

Vice President to the ITRE Committee, Member of the European Parliament and President of Energy Solutions, Morten Helveg Petersen (ALDE).

"When it comes to developing well-functioning internal market, there is not one silver bullet for ensuring that clean, affordable and reliable energy will be provided to citizens and business across the Union; instead it is the well-balanced set of political, regulatory and market measures that we need to come with to address all challenges ahead of us. The aim is to increase the living standard of all Europeans while reducing the energy requirements of our economy and providing necessary supplies in a much more sustainable way and with fewer risks of various natures. It can be achieved by substantially modernising our energy infrastructure, by connecting member states and regions, by mobilising financial resources for innovations and new technologies or by looking for all options on how to save energy. And the role of the EU is to provide legislative and regulatory framework that would facilitate this."

Member of the European Parliament and Vice President of Energy Solutions, Miroslav Poche (S&D).

"The future energy market is of utmost importance; the question is how we are progressing under the objective of security of supply: We still have a long way to go in reflecting a European energy market – and as politicians we need the eyes and ears of the industry as well as the other stakeholders involved on where to set in along the legislative process!"

Member of the European Parliament and Vice President of Energy Solutions, Angelika Niebler (EPP).

"A future-proofed energy market rests on a fair market design: A fair market design involves the review of public subsidies across energy sources from renewables to nuclear to fossil fuels. Fossil fuels and nuclear are historically the biggest receiver of direct and indirect public support – that public support now should be phased out to meet current political ambitions!"

Member of the European Parliament and Vice President of Energy Solutions, Claude Turmes (Greens).

Member of the European Parliament and Vice President of Energy Solutions, Ian Duncan (ECR).

Reflections from Energy Solution Creators

Reflections from energy solution creators highlight where to set in on the pathway towards an Energy Union:

3M	The issues around effective use of energy resources and climate change are complex and interconnected. At 3M, we are focused on understanding those connections and seeking solutions that promote energy efficiency, clean energy infrastructure, and reduction of greenhouse gases. With the current aging energy infrastructure, public policies should focus on improving energy management and grid modernization. Coordinated action is needed to deploy smart grids, meters and infrastructure. Greater energy efficiency in energy transmission and distribution combines a high return on investment and allows sharing the efficiency effort between producers, distributors and end-users. As a core enabler of a competitive European economy, investments in a well-functioning energy system with cross-border connections should be accelerated.
Aurubis	Europe is highly dependent on a secure and sustainable energy and raw materials supply. Energy markets are in full transition and need special attention. This transition to a more resource- and energy-efficient production and consumption is highly complex and affects almost all economic and policy areas. Aurubis contributes with copper and many more metals to resource and energy efficiency as well as to the climate protection, in equipment technology, in electrical infrastructure and products for clean energy. Copper is indispensable for this (low carbon /sustainable / green / energy efficient) energy transformation program. To paint the picture: Efficiency and innovation are part of the DNA of Copper; as an excellent conductor of heat and electricity it can be found in almost any electricity and heating.
Danfoss	We are facing a historic opportunity to speed up the energy transition and increase the European competitiveness on both energy efficiency and renewable energy. Capital costs have never been lower, technologies are ready, and we have learned from past experience. The cost and speed of the energy transition can be signicantly improved by sector coupling, tapping into the fulll potential of electricity and heat storage, utilising district heating and cooling grids to absorb excess renewable electricity and speed up the decarbonisation and digitalization of our building stock. There are still huge untapped energy savings potential, there is simply no time to waste.
DONG energy	With an end to the overcapacity in the power supply, fair CO2 costs and developed grids, electricity prices will reach levels where renewable energy, including offshore wind, can soon be built without subsidies. Also allowing scarcity prices and market based procurement of grid services will in addition ensure security of supply at least costs.
GE	The electricity industry is undergoing massive transformation. Complex interrelationships across the entire Electricity Value Network pose challenges to power leaders everywhere. The new age of digital is providing the means for driving efficiencies, uncovering business opportunities and better serving consumers. Public policies that support the digital transformation of the electric power sector will enable Europe to lead and ensure long-term growth in this critical industry. GE is a digital industrial company that offers superior customer outcomes across the entire energy ecosystem. This puts GE in a unique position to understand the complex interrelationships within the ecosystem, and the implications to our customers of transformations occurring within the ecosystem.
GRUNDFOS	Buildings are key to reach a decarbonised and flexible energy system in Europe. Firstly, buildings can reduce the energy consumption and, secondly, buildings can provide flexibility in energy demand. A key enabler of this is district energy solutions, where waste heat from electricity production or the industrial sector can be utilised to heat buildings instead of being wasted, if it is treated on equal footing with renewable energy sources. At the same time, district energy systems can easily and effectively absorb great amounts of electricity when it is needed and store it as thermal heat, if the electricity market values the flexibility.

ista	We believe that energy efficiency in buildings is key for reaching the Energy Union goals. Heating and hot water account for around 85 % of a household's total energy consumption. Even small changes in the tenants' heating behavior can help to increase the energy efficiency of a building tremendously. One requirement is transparency for the tenant about his / her own heat and hot water energy consumption. As one of the world's leading submetering companies, we provide corresponding, innovative, sustainable and cost-efficient solutions.
pka	Unlocking private capital for investments in low carbon solutions is essential in achieving the ambitious climate targets put forward by the European Union, and cross-sector partnerships between companies, investors and goverments will be a deciding factor to scale new investments. Closing the current financing gap is an enourmous challenge and requires commitment from the member states if we are to shift investments from fossil fuels to low carbon alternatives.
ROCKWOOL	Energy efficiency must be the first priority for the future energy market. Since 40% of EU energy is used in buildings, energy efficient buildings are a must. What is needed is a 'smart' building stock with a very low requirement for heating and cooling. This can be achieved by making the building envelope highly thermally efficient, then efficiently controlling residual demand, met from renewable sources. Buildings that have been brought up to a very high standard of energy efficiency can play an integral role in the overall energy system, as they can be used for balancing and storage thereby ensuring a massive reduction in both peak and overall energy demand.
Statoil	A European Energy Union that is just and benefits consumers and investors alike must be delivered through a market oriented approach where participants are free to compete and respond to credible price signals for emissions, for energy services and for energy commodities. Second, removal of inconsistencies and barriers that undermines a step up in R&D spending, technology deployment and energy system investments should be a priority. Third, to address energy efficiency improvements the distribution of costs and benefits of the proposed legislation must address social, health and climate change issues in complementary ways.
VELUX®	Our main objective is to make Energy union a true success. To achieve that, the future energy markets require smart, innovative, market-driven, cost-optimal, affordable and consumer-driven solutions. Important progress Europe has achieved in the recent years in the areas of Energy efficiency, Renewable energy sources and CO2 reductions should serve as a good "launch platform" in achieving even more in the future. By doing so, we need to remain ambitious but at the same time realistically assess the technological and societal potential by making focused choices where, by when, by which technology or measures and how we can achieve most.
Vestas	The "Clean Energy for All Europeans" provides a framework for a European energy market better fit to handle integration of renewables. This is a good first step towards a foundation for the EU to deliver on its long-term climate objective and to maintain its renewable technology leadership. We, as the provider of the technology needed, are to make sure the transition is made in the most cost-effective way and significant efforts to reduce the cost of energy throughout the whole value chain are being done in this regard. This in turn requires public commitment that signals to the industry that there will be long-term stability for renewable energy markets. Rules for renewable energy support mechanisms will need to be clarified to ensure they can remain technology-specific. Critical is also that phase out of priority dispatch is done with very clear conditions and adequate compensation for curtailment. Third, a clear, transparent and binding Governance Regulation for how Member States should deliver towards the EU 2030 target will be of outmost importance.

Schneider Electric

The main issue at stake, and that the Clean Energy Package has to address, is to adjust the regulatory rules to tomorrow's market reality (digital, decentralized, decarbonized, flexible…) and to boost end-users plug and play, with a bottom-up approach. The empowerment of consumers will create opportunities at local level by harmonizing & stabilizing end-users' participation in the energy markets (by promoting demand response, self-generation and local energy community). As regards market flexibility, DSOs should have a neutral facilitator role and remuneration conditions for distribution grid should promote flexibility. Finally, building renovation will be critical, and should be further boosted. Energy management (building automation & control, monitoring, BIM) should be promoted and renovation be pushed at EU level (especially in non-residential buildings where paybacks and savings potential are the most important).

SIEMENS

Cost-effective progress towards a low carbon power mix requires (a) a strong home market for renewable energy sources with the possibility for Member States to organise technology specific auctions and (b) an emission ceiling for conventional power generation. But moving towards a low-carbon economy, power needs to grow beyond the electricity sector with electrification and better use of green energy for producing raw materials, alternative fuels, or seasonal storage.

Siemens supports the Commission in strengthening the power market as an important step to drive innovation, digitalization, to integrate renewables and storage, and to facilitate cost-effective dispatch of power generation. But a power market remunerating only energy on marginal costs will not trigger the necessary investments to make the energy transition work. We need to discuss the fundamentals of Europe's power market design.

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Energy Solutions is a platform for developing holistic energy solutions for an integrated energy system towards a European Energy Union.

The European Energy Union is identified as the top priority for the coming years with the aim to deliver secure, affordable and sustainable energy while creating jobs and growth as well as investments in Europe.

The European society is fundamentally shaped by energy as a political issue in terms of security, competitiveness and sustainability. Ensuring security of supply while developing a sustainable and competitive energy sector requires contributions from all parts of the energy system. An integrated energy system requires a bankable energy sector. The energy sector as a whole needs to be the guiding principle when developing energy regulation.

Energy Solutions facilitates dialogue across national, sectorial and individual positions for an integrated system-approach. The integrated system-approach is to develop and promote tangible, holistic and pragmatic solutions to challenges facing industry and society.

Energy Solutions ultimately seeks to strengthen policy development within the European Parliament.