ENERGY SOLUTIONS: WORK STREAM

Greenhouse Gas Emissions Reduction - Non-ETS Sectors

Reflections from 14 June 2016, 12:30-14:40, European Parliament, Brussels

Energy Solutions Work Stream Reflections

Energy Solutions Work Stream Reflections are the outcome of the Energy Solutions Work Stream. The Energy Solutions Work Stream gathered EU decision-makers from the European Commission, the European Parliament and key industrial players to discuss the upcoming proposal on greenhouse gas (GHG) emissions reduction in sectors not covered by the emission trading system (ETS). Not covered sectors (non-ETS sectors) included buildings and transport.

The reflection paper lays out challenges and solutions on the role of buildings and transport in the future energy system as well as how the interplay can support the target of GHG emissions reduction by 30% in 2030.

- **European leadership in innovative industries**

European leadership in innovative industries is visible within single sectors; but less clear across sectors in general. In general the world is catching up to an extent where the leadership is challenged by countries like the United States and China. The challenge from countries like the United States and China spells out the need to not only rely on the economy of scale to maintain technology leadership in renewable energy and energy efficiency; but to increase investments in R&D and in maturing technology for the market to preserve the leadership of Europe. The preservation of the leadership of Europe could also be ensured through the latest innovations in digital. Thus an interconnected hybrid energy system should be enabled so as to synchronize variable distributed energy production and consumption.

- **Integrated solutions require proper market design**

Integrated solutions across the energy system require a market design that supports the decarbonisation of the non-ETS sectors. The decarbonisation of the non-ETS sectors includes the building and transport sectors via the utilisation of renewable forms of energy and decarbonised electricity produced locally or remotely. Overall the market should incentivise the deployment of energy efficiency measures. In the future prosumers will also play a stronger role as a part of the energy system.

- **Primary Energy Factors as an obstacle to CO2 mitigation**

Primary Energy Factors (PEFs) present an obstacle to CO2 mitigation by disincentivizing the electrification of heating. Examples of disincentives of the electrification of heating include the deployment of heat pumps and thermal storage in areas with a high share of low-carbon electricity. Electricity produced off-site presents both the challenge and solution that currently is multiplied by a factor of 2.5 when measuring electricity as part of the energy consumption of buildings, regardless of the carbon content of the electricity mix. The PEF needs to be set following a transparent process and based on accurate statistical data. In specific local realities should be reflected so as to acknowledge the effect on the performance of the whole building stock if countries set high the PEF.

- **Access to finance to unlock the potential**

Access to finance is essential in unlocking the potential of decarbonizing also non-ETS sectors. The potential of decarbonizing non-ETS sector rests on the definition of principles for how you attract finance. Principles for how to attract finance relate to the flow, methods and risks at different scales. On the scale of large funds, a mechanism could potentially allow funding from funds such as the EFSI as an insurance tool to stimulate private investments also into energy efficiency in buildings. At the smaller scale, an investment mechanism could enable the aggregation of several small scale projects while only forwarding one single application for funding of energy efficient projects. The constellation is possible due to ambitious technical assistance (TA) and project development assistance (PDA) programs. Thus solutions lay in access to private finance in e.g. housing renovations as well as conventional energy saving measures. Part of that solution may be found in the upcoming proposal for smart finance in smart buildings; yet more conventional energy saving measures may face challenges in attracting investments.

- **Energy Saving Obligations generate investments in buildings**

Energy Saving Obligations generate investments in building stocks as a positive effect of the current energy and climate framework of 2013-2020. The current energy and climate framework of 2013-2020 has resulted in 42% of investments under article 7. Article 7 on energy saving obligations in EDD has proven successful to an extent where it will play an even more crucial role in the future in allowing flexibility to reach required levels of savings.

- **Smart buildings and renovation of existing ones for a flexible energy system, reduce consumption and ultimately emissions**

Smart buildings and renovation of existing ones can add flexibility to the energy system and significantly reduce consumption as well as ultimately reduce CO2 emissions. Reduction of CO2 emissions through ICT-based solutions for buildings should be a priority to the EU that is lagging significantly behind the US and Asia.

Part of the solution for especially existing buildings lays in the ownership structure, tax incentives, and renovation of buildings. Renovation of buildings can specifically decrease the total energy consumption of existing buildings. The decrease in total energy consumption of existing buildings is even compatible with increasing consumption of electricity based on renewables, however, a challenge due to national legislation. National legislation presents a challenge due to national sovereignty; whereas public buildings and in particular office spaces represent a potential for savings and roll-out of innovative products and systems. The potential for savings and roll-out of products and systems require a large-scale initiative on commercial and office buildings to gather stakeholders including real estate investors, buildings performance certifiers, facility managers, technology providers etc.

- **Data on consumption to remain under customer-control**

Data on consumption should remain under customer-control as a direct result of increasing flows of data in the energy system. The flows of data in the energy system raise the issues of ownership and handling of data that first and foremost belongs to the consumer. The consumer needs clarity and reassurance about the accessibility to, purpose and use of data on consumption. Data on consumption should be managed by a common trusted mechanism accessible to consumers. The accessibility to consumers should ensure complete control of the

respective private lifestyle. The control of private lifestyle could release the potential of energy system data, digitalization and ICT as important cross-cutting dimensions that could support the energy transition and development of energy services.

- **Three pillars to decarbonising transport**

Three pillars define the decarbonisation of transportation according to the European Commission:

1) Vehicle efficiency (continuation and update of CO2 standards for cars etc.)
2) Decarbonisation of fuels (increase uptake of electro mobility and use of second generation advanced biofuels)
3) Demand management (deploy intelligent transport systems, charging and modal shift)

The market should to a greater extent contribute to demand response. A precondition for both demand response and decarbonisation is roll-out of smart charging stations. The Expert Group on Sustainable Transport to the European Commission has an important role to play in the integration of the transport sector into the energy system and in accordance to the business model of smart-charging systems.

- **Smart charging to add flexibility and ensure uptake of low-carbon mobility**

Smart charging is a fundamental prerequisite, along societal changes to soft mobility and new economic schemes including car-sharing and carpooling as it adds flexibility and ensures the uptake of low-carbon mobility. The uptake of low-carbon mobility is, however, not reflected in the number of chargers to electric vehicles in public spaces with 90 % placed privately or in spaces not accessible to the wide public. The accessibility to the wider public is a low-hanging fruit to reap.

The solution would not be a massive roll out of non-smart charging stations since the main issue is not to increase electricity demand, as even a large fleet of electric vehicles would only result in limited increases in demand. Demand centre around existing peak time e.g. between 5 pm and 8 pm would be problematic. One solution would be to incorporate smart charging as a system-requirement in new buildings to ensure the uptake of low-carbon mobility and to add flexibility. Flexibility could further be enhanced through hydrogen storage as a technology with some potential in the future. Future charging stations sockets should be interoperable and charging infrastructure interconnected.

Work Stream Reflections from Political Solutions Makers

Work stream reflections from political solutions creators across political parties and member states, addressing the pathway to a European Energy Union:

2016 is the year of action on the energy agenda. The energy agenda is full in realizing the European Energy Union. A European Energy Union requires integrated energy solutions. Energy Solutions set out to break down silos in legislation. Legislation on non-ETS sectors is what we address at this first Work Stream Meeting to Energy Solutions, says Member of the European Parliament, Vice Chair to ITRE and President to Energy Solutions, Mr. Petersen (ALDE).

Europe is at a cross-road: We want a European Energy Union, but - in reality - we are rather far away from that objective. Therefore policy-makers as well as industry are challenged to build up a more efficient energy system in Europe, thus finding appropriate solutions for buildings and transportation, says Member of the European Parliament and Vice President to Energy Solutions, Mrs. Niebler (EPP).

The move to more clean and efficient technology is no longer an option; it is something we must decide on as soon as possible. The transportation sector is part of the solution of an optimal energy system, says Member of the European Parliament and Vice President to Energy Solutions, Mr. Poche (S&D).

Energy Solutions adds up values by bringing together the different links of the wider energy system. Bringing together the different links of the wider energy system requires integrated energy solutions on legislation – legislation that starts now with stepping stones towards a European Energy Union, says Member of the European Parliament and Vice President to Energy Solutions, Mr. Duncan (ECR).

We are in the industrial race – we cannot waste time on definitions – we need to settle on standards. Standards for transportation are part of the solution for an integrated energy system, says Member of the European Parliament and Vice President to Energy Solutions, Mr. Turmes (Greens).

We face an imbalance politically as well as industrially – we cannot allow that imbalance goes into one silo that being geographically or sectorial – we need integrated solutions to reach a zero-carbon building stock by 2050, says Member of the European Parliament and Vice President to Energy Solutions, Mr. Turmes (Greens).

Work Stream Reflections from Industrial Solutions Creators

Work stream reflections from industrial solution makers across sectors and member states, addressing the pathway to a European Energy Union:

3M	• The building sector has a vast potential for energy savings and CO2 reduction through retrofitting measures. Energy savings and CO2 reductions represent low-hanging fruits for energy savings with little initial cost. In specific, the renovation of existing buildings present a solution towards a nearly-zero energy building stock if in focus by the EDD and EPBD within the EU by 2050. The increased use of insulation with higher thermal performance for buildings would improve performance, keeping heat in (building, office and home) or heat out (refrigerated buildings). The improved performance requires fiscal incentives and market-based mechanisms. The public sector has an important role to play in in leading the way. Current public sector renovation target only covers central government buildings; but should be expanded to cover all publically owned buildings. Also at regional level, the EU should further raise awareness of the importance and the benefits of energy efficiency that in many countries legislation does exist, but with limited impact due to a lack of awareness among citizens and the absence of business models that would make energy efficient products more attractive for the ESCOs. • The transport sector has the second highest CO2 reduction potential. Existing weight reduction solutions offer real and immediate potential for CO2 reductions by making vehicles lighter, therefore consuming less fuel. An additional alternative to decarbonisation of transport is also electrification of transport, presuming that the EU electricity system will be almost fully decarbonized by 2050. At regional level the European Union and its member states should focus on improving future energy management (grid efficiency). Coordinated action is needed to deploy smart grids, meters and wider 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.
DONG energy	• Wholesale price signals are not reaching consumers, as the levels of taxes and levies put on the electricity bill compared to on the fuel (gas/oil) bill makes electricity a poor competitor. One example is how the RES-levy is put onto the electricity bill, although the whole society benefits from the on-going decarbonisation. Meanwhile, fossil fuels continue to receive subsidies. This reduces the potential of electrification. • Energy efficiency (EE) legislation is not helping electrification by applying a primary energy factor of 2.5 for all electricity consumption regardless of *when* the consumption takes place. This reduces the level of electrification; both on the level of products sold (through poorer energy labels), and on the level of buildings (energy labeling of houses, where e.g. heat-pumps' consumption of electricity is multiplied with 2.5). • "EE first" is not always the case in the non-ETS sector – at some stage (and earlier than one could expect) it becomes cheaper to use carbon-free energy than to do further EE measures. One example is the article 7 of the EE Directive, which sets out a 1.5% energy saving obligation for energy suppliers.

ROCKWOOL

- Reduction of energy demand in the buildings sector is the best way to reduce the cost for decarbonisation of the energy system. Buildings account for more than 40% of our final energy consumption in the EU and 36% of our greenhouse gas emissions – EU has set a long-term goal for decarbonisation of the building sector, aiming at a 88-91 % reduction in CO2 by 2050, as set out in the Commission Roadmap, COM (2011)112 final.
- Today we have the knowledge and technology, as well as a fairly clear political mandate to construct and renovate buildings to the nzeb level providing not only a comfortable and healthy indoor climate, but also removing the burden from future energy bills of the individual building-owners and tenants (and the society at large). We also have to take into account that the majority of building in the EU are owned and used by 'amateurs', i.e. private people individuals with other priorities than the energy performance of their homes. The more we can take the burden of action away from individual decisions and embed the energy efficiency in the building itself, the more reliable and lasting the savings will be for the future. The only guaranteed way of ensuring that buildings have low energy demand is to design and construct them so that they meet a minimum standard of efficiency; and to ensure that when a building is being renovated, all cost-effective energy savings measures are installed. Reducing the energy demand of the building sector will not only reduce future energy costs for the consumers, but will also help to reduce the cost for de-carbonisation of the entire energy sector.

SIEMENS

- Energy efficiency in buildings is often seen in isolation, however, high CO2 savings potential and energy efficiency potential stem from grid flexibility and the ability of smart buildings to communicate with the grid. Energy efficiency provided by smart grids is an important piece of the energy solutions puzzle.

- Europe has long been a standard-setter in meeting global challenges. The global approach to energy and environmental issues has been transformed by pioneering technologies and policies in Europe that have reduced carbon emissions dramatically. Yet again Europe is poised to take the lead, driving energy efficiency and notably the digital optimization of assets. It requires that policy-makers embrace new technological trends, develop a better connected energy system, and create the right market conditions (e.g. properly remunerate the capability to provide system flexibility) for low-carbon technologies to flourish.
- Electrification and the digital optimization of assets are fundamental to long-term growth and to the transition to a low-carbon economy. Innovative technologies, combined with advances in digital solutions, create opportunities for progress, not only in the power sector, but also in the transport, buildings and other industrial sectors. Electricity is on track to become the energy carrier of the future. There is no energy carrier that can decarbonize to the same extent and scale as electricity – and it is the prerequisite for digitalization.

Schneider Electric

- The burden sharing efforts of non-ETS sectors dedicate a large deal to the building sector, consuming 40% of energy consumption in Europe while having a very low renovation rate (1% per year in average). It requires the EU to support an ambitious decarbonisation roadmap for buildings. An ambitious decarbonisation roadmap for buildings should especially address non-residential buildings, where the deployment of energy efficiency technologies will be much easier and will contribute greatly to the overall efficiency of the energy system. The burden sharing effort of non-ETS sectors also include transport that can contribute to decarbonisation by means of electrical grids, where energy losses represent approximately between 5 and 10 %.

- Breaking the silos across the energy system is needed. Breaking down silos across the energy system include looking at the energy demand-side, where decarbonisation is about reducing energy demand ("energy efficiency") as well as about improving energy flexibility ("efficient energy"). Overall in the decarbonisation effort for both ETS and non-ETS sectors within Europe there is a need to better support and prioritize energy management. Energy management is the backbone to deliver the integration of renewable energy sources, low carbon technologies, digital solutions, but also to save and optimise energy consumption.

- A system approach is needed to deploy both energy efficiency and efficient energy objectives. Energy efficiency through building decarbonisation and energy savings objectives shall be set-up at individual building level as well as at district level when it makes sense. The understanding of distribution grid will not only help to reach the decarbonisation objectives by reducing energy reduction losses, but also improve the flexibility of electrical grid.

Panasonic

- The eco-design regulation for heaters (heat pumps Air to Air and Air to Water) is not ambitious enough today. Today more than 80% of the heat pumps on the market are already A++ or A+++. This means that manufacturers are not incentivized to develop new technologies more efficiently as the actual products are already meeting the highest energy ranking.

- No authorities certify the correctness of information on eco design labels. A list of heat pumps should be generalized in Europe. Examples of lists of officially tested include Denmark (Sparenergi: http://sparenergi.dk/forbruger/vaerktoejer/varmepumpelisten) as well as France (http://www.certita.org/marque-certita/nf-pompe-chaleur). Lists of officially tested products should give incentive. The incentive could be a subsidy or a lower VAT for the heat pump on the list or a penalization of the heat pumps which are not on the list (higher VAT for example).

- The buildings represent 40% of the energy consumption in Europe. In Europe there is unfortunately no specific and harmonized road map to renovate buildings (residential and commercial). The EU should support massively a retrofitting plan for the building with more than 20 years.

- History of the 20th century shows that electrification has always led to decarbonisation. The decarbonisation will continue with more and more RES and other low-carbon energies connected to the grid. Thus, a CO2 criterion should be applied when defining pieces of legislation to aim to impulse an energy transition that is the case for energy efficiency policies. Current legislation encourages the switch to higher CO2 content solutions (example: a gas boiler is favoured compared to electrical water heater fed by low carbon electricity).

- Transportation of goods and people is one of the biggest parts of the energy consumption in Europe. Europe is unfortunately lagging behind when it comes to the use of alternative fuels for transport. Alternative fuels for transport are part of the solution in ensuring better air quality in urban areas with more than 70% of European citizens living in cities. The high concentration in cities requires technological solutions such as electrification of public transport. The segment should be supported by the EU. At the individual household level and private vehicles level, all data gathered the past decade on electric mobility show that > 90% of charging events take place at the domestic home level or at the working place. The domestic household level and the working place represent places for installing charging devices. Charging devices is already possible with the availability of technology that avoids increasing peak electricity demands. Electric vehicle acquisition should be strongly supported, keeping European car manufacturers at the forefront.

- Non electrical renewable should be much more encouraged, showing very high conversion rates while substituting high carbon content fuels. Domestic hot water does not need to be brought at high temperature to fulfill user requirements. Consequently, fossil fueled heating should not be considered as the main sources of heating in the 21st century.

VELUX®

- Europeans spend up to 90% of their time in buildings. It is therefore of a paramount importance to create legislative framework which will stimulate activities creating healthy and comfortable indoor climate taking into consideration all aspects of the building envelope, energy efficiency and environment.

- The current legislative framework contains shortcomings in areas related to the implementation of legislation on indoor climate and affordability assessment of the proposed measures. Measures that ensure wider implementation of the energy balance principle as part of the methodology assessing the overall building envelope should be put in place to overcome shortcomings.

- A holistic approach across aspects can contribute as a supplement to the “hard” measures in the upcoming review of the policy areas including EED, EPBD, and RES related to the energy union. In particular, policy areas related to the stimulation of the renovation rate in European buildings can create a win-win situation by acknowledging that 70% of the building stock is privately owned and that non-energy aspects are drivers for renovation. For consumers in terms of better living conditions and wider society by active contribution to the transition to the low carbon economy and multiple benefits such as increased productivity, improved health and better

	learning abilities.
GRUNDFOS	• Buildings can significantly contribute to decarbonisation in Europe. Firstly, buildings can reduce the energy consumption and secondly, buildings can provide flexibility in energy demand. Some of the solutions to do this, however, require that some of the energy production is moved into the ETS-sectors. Hence, a level playing field is needed between central and decentralised solutions. The revisions of EED and EPBD should take this into account. • District energy solutions provides a good example as waste heat from electricity production or the industrial sector can be utilised to heat buildings instead of being wasted. In addition, district energy systems can easily and effectively absorb great amounts of electricity when needed and store it as thermal heat. • The public sector plays an important role in reducing the energy consumption in buildings – both as the owner of millions of square meters of buildings and as a trendsetter in procurement. In specific, the EED could be improved to address the potential. Firstly, the scope should be expanded to also include regions and municipalities instead of only national authorities, as a significant amount of the energy consumed is consumed at regional or local level. Secondly, public procurement decisions should be based on a life-cycle-cost perspective rather than simply the procurement price. Currently, public tenders too often have a narrow focus on procurement price that can generate sub-optimal decisions from an EE perspective.
Vestas	• Electrification and especially of transport and heating and cooling is an essential tool in decarbonizing the European economy. Decarbonizing the European economy is even more efficient in the face of the increasing amount of renewables connected to the grid electrification. However, electricity is taxed and levied to a level that de-incentivizes the necessary transformation, distorting fair competition against fossil fuel. • The increase in carbon free electricity across Europe means that energy efficiency initiatives are not necessary the most efficient way to decarbonize – instead we need to direct energy use towards cheap and clean electricity produced in Europe. • Increased electrification will also allow for increased electricity storage in these sectors and thus contribute to balancing variable renewable energies.
Danfoss	• Energy efficiency investments in buildings shall be regarded as an infrastructure investment since every euro spent in the energy renovation of buildings is a euro spent IN Europe, and not OUTSIDE, e.g. for gas import. In specific, every 1% improvement in energy efficiency leads to 2.5% less gas import. Thus, building renovation and local infrastructure investments create jobs and growth, support factories, and contribute to better quality of life as well as better air quality in cities in Europe. The European situation with Brexit only emphasises its top priority, where energy efficiency shall be regarded within the infrastructure budget and planning by finance ministers and shall be treated as capital investment and not operational expenditure. The situation has the potential to completely change the affordability discussion and open up for a healthy discussion on what constitutes the best value for

public spending decisions.

- A holistic approach is needed for the best and cheapest solution for the energy transition, exploiting the synergies between the heating and electricity sector. Good practice includes storage of excess renewable electricity in district heating and cooling grids via large scale heat pumps. Heat storage helps integrating renewable electricity into the energy system while making heating and cooling sustainable at low cost. Further affordable renewable energy in the building stock requires hybrid systems that combine renewable electricity driven solutions and fossil fired back-up heating systems.

- Smart buildings require that the basics are right. The basics rest on the optimal overall energy performance of heating and cooling systems in existing buildings. At the moment in multifamily buildings or office buildings a large number of residents are still not able to control own heating expenses or do not have the equipment that automatically delivers the right quantities of heat at the right place (so called "automatic hydronic balancing"). Benefits are huge in terms of comfort, gas, oil and cost savings with no lock-in effects in regards to the renovation of the envelope. Studies show that roll-out of basic radiator thermostats in homes would deliver 4% of the 2020 energy saving target in Europe. Internal calculations also show that pressure independent balancing technology in commercial buildings alone could achieve 7% of the 2020 energy efficiency target. The new energy efficiency legislation should ensure that all citizens benefit from appropriately controlled and balanced buildings as a pre-requisite for putting consumers at the centre of the Energy Union.

- Alternative measures are preferable to obligations, since these are usually market-driven approaches in line with a liberalized market. In line with the different climate situation, primary energy sources, existing infrastructure systems, and existing implemented measures, member states need the flexibility to choose and develop adequate and cost-efficient measures. However, if Member State governments choose to meet all or part of the energy-saving requirement (Article 7) through a form of intervention in energy companies, this should be through an obligation on the sales business (Supplier Obligation) and not on distribution. If an Energy Efficiency Obligation on companies is considered, it should be compatible with the EU ETS, meaning that a certified efficiency measure should be expressed as a carbon-reduction figure. A resulting "white certificate" should be tradable European-wide, and should be convertible into EU ETS certificates. The target or reduction pathway for the EU ETS thus has to take those additional measures on the end-user side into account. ETS supply will need to be adapted to coincide with the resulting reduction in demand due to the overlapping policy.

- Privately organized bankable funds for financing energy efficiency can unlock untapped potential. Untapped potential include versatile possibilities to invest in economically viable measures to save energy and money, however, actual investment volumes in energy efficiency are (too) low – due to financial restrictions or higher

prioritized alternatives for investments. A reliable intermediary with a solid financing instrument is needed to bring potential investors and efficiency measures together. Efficiency has to be standardized to track attention of investors. To attract investors, a rating or certification mechanism is needed, which ensure calculated savings across all applicable efficiency measures (including the replacement of inefficient lighting or engines, CHP, DH/DC, excess energy recovery, etc.) And also a mechanism to reduce risks (e.g. price, regulatory, solvency) should be an important task of fund management. In practice, energy efficiency measures that comply with certain normed protocols or standards could be clustered and pooled into investment funds with different risk-return-ratios (Aggregation). In sum, more public funding is not necessary for energy efficiency measures, but a standardized, simple framework to allow third-party investors to participate.

- Make the market fit for flexibility: Common rules laid down in ordinary EU legislation, transpose necessary requirements of current state aid guidelines into the upcoming legislative package. Foster the right for self-generation, considering fair system cost sharing. Replace regulated prices by scarcity pricing and dynamic (grid) tariffs. Promote a smart sector coupling. Allow DSOs to purchase flexibility.

Microsoft

- By 2050 more than 6 billion people—about 70 percent of the population—will live in urban areas. The world is undergoing an urban renaissance as people are moving to cities in ever greater numbers to build better lives. With this march toward greater urbanization, new challenges emerge, especially related to buildings and transportation: strains on roads and public transportation networks, long commutes, pollution and wasted energy. Thus delivering intelligent solutions for civic leaders to solve these significant issues will be paramount and digital technology can be used to reduce congestion and energy use, get commuters home faster and, ultimately, build stronger economies. We need to think about encouraging and leveraging Internet of Things and cloud technologies to help smart, sustainable cities address their biggest building and transportation issues.

- Governments can extend the value of existing infrastructure and services, and add new solutions. By tapping into existing data sources, including business systems, sensors, video feeds, and social media, cities can gain new insights that help build thriving, twenty-first-century communities. Imagine bringing together cloud, Big Data, mobile and social technologies to help regions, cities, and municipalities cut costs and emissions, improve productivity, and engage people in innovative ways.

Work Stream Goals

The ambition to reduce greenhouse gasses emissions (GHG) is a key dimension of the European Energy Union. Realizing the European Energy Union, the EU emissions trading system (ETS) provides an important tool for reducing GHG emissions cost-effectively; however, not for sectors related to buildings, transport and agriculture. Not covered sectors related to buildings, transport and agriculture (non-ETS sectors) increasingly interlink with the overall energy system.

The overall energy system needs to be the offset for energy regulation - energy regulation that is traditionally too often developed for isolated silos of the energy sector.

The European Commission soon puts forth the legislative proposal on reducing GHG emissions in non-ETS sectors as part of the Energy Policy Package this summer. Overall the EU is on track in meeting its 2020-target for reducing greenhouse emissions; however, further measures are needed to meet the 2030-target. To meet the target, the European Commission has proposed a revised EU ETS and will shortly present a new proposal on the implementation of the non-ETS target as well as a legislative proposal on land use, land use change and forestry (LULUCF).

Interlinkages across sectors and legislation should be captured through a system-based approach. A system-based approach would help setting out measures to reduce emissions within sectors related to buildings and transport with an increasingly decarbonized electricity sector. Thus, the balance between measures to reduce emissions including energy savings, reducing costs for low carbon technologies and ensuring maximum benefits from energy infrastructure need to come together to optimize the energy system as a whole. Optimizing the energy system as a whole will help reducing GHG emissions in the most cost-efficient way while ensuring growth and job creation in Europe.

Energy Solutions is a cross-sectorial and cross-political energy network consisting of 3M, Danfoss, DONG Energy, EDF, Eon, GE, Grundfos, Microsoft, Panasonic, Rockwool, Schneider Electric, Siemens, Velux and Vestas and representatives from the five main groups in the European Parliament (EPP, S&D, ALDE, ECR and the Greens) including Mrs. Niebler, Mr. Poche, Mr. Petersen, Mr. Duncan, Mr. Turmes.

Work Stream Background

Guiding principles are to allow open and constructive cross-national, sectorial and party dialogue to: 1) strengthen policy development within the European Parliament by addressing topical energy issues on the agenda of Members of the European Parliament, 2) take an energy system approach with the view to optimize the energy system, 3) present holistic energy solutions to mirror dimensions of the European Energy Union, 4) respect the EU's overall goal of decarbonisation and delivering secure, affordable and sustainable energy while creating jobs and growth as well as investments in Europe, 5) develop energy regulation through horizontal objectives such as sustainable consumer benefits, access to finance, competition, market-based solutions, while taking into account the need to address market failures, and maximize benefits to consumers by improving the efficiency of the overall energy system (particularly by use of data and new technology).

Horizontal objectives reflect the ongoing changes in the energy sector with a view to maintain and improve the functioning and the overall efficiency of the energy system:

1. Finance: How do we ensure finance for investments in flexibility, infrastructure technology, energy savings measures and the overall ambition of decarbonizing the energy system?
2. Competition: How do we ensure competitive energy costs for consumers and a transformation of the energy sector, which contributes to growth and job creation in Europe? How can level playing fields between energy market participants stimulate competition within the European energy system?
3. Market: What is needed for market regulation to ensure investments in cost-efficient transition of the energy system? How much political intervention do we need towards market design and to stimulate technology development? How can market design improve the overall efficiency of Europe's energy system?
4. Consumer: What will the consumer demand from the energy system in the future, and how is this best incentivized? How can the energy system contribute to reduce energy poverty?
5. Data / Tech.: How can data use, data storage and innovation in technology support a cost-efficient, decarbonized and consumer-friendly energy sector?
6. Regional: What challenges and opportunities arise from regional integration of national energy markets within Europe?

Horizontal objectives require horizontal solutions. A) From the political side, what is needed from European energy legislation to underpin the delivery of solutions? B) From the industry-side, what solutions companies can deliver to optimize the energy system?

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).

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 EU 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, sectoral 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.