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ENERGY UNION PACKAGE

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN INVESTMENT BANK

A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy

1. WHY WE NEED AN ENERGY UNION

The goal of a resilient Energy Union with an ambitious climate policy at its core is to give EU consumers - households and businesses - secure, sustainable, competitive and affordable energy. Achieving this goal will require a fundamental transformation of Europe's energy system.

Our vision is of an Energy Union where Member States see that they depend on each other to deliver secure energy to their citizens, based on true solidarity and trust, and of an Energy Union that speaks with one voice in global affairs;

Our vision is of an integrated continent-wide energy system where energy flows freely across borders, based on competition and the best possible use of resources, and with effective regulation of energy markets at EU level where necessary;

Our vision is of the Energy Union as a sustainable, low-carbon and climate-friendly economy that is designed to last;

Our vision is of strong, innovative and competitive European companies that develop the industrial products and technology needed to deliver energy efficiency and low carbon technologies inside and outside Europe,

Our vision is of a European labour force with the skills to build and manage the energy system of tomorrow;

Our vision is of investor confidence through price signals that reflect long term needs and policy objectives;

Most importantly, our vision is of an Energy Union with citizens at its core, where citizens take ownership of the energy transition, benefit from new technologies to reduce their bills, participate actively in the market, and where vulnerable consumers are protected.

To reach our goal, we have to move away from an economy driven by fossil fuels, an economy where energy is based on a centralised, supply-side approach and which relies on old technologies and outdated business models. We have to empower consumers through providing them with information, choice and through creating flexibility to manage demand as well as supply. We have to move away from a fragmented system characterised by uncoordinated national policies, market barriers and energy-isolated areas.

European energy system in figures

In 2014, the EU imported 53% of its energy at a cost of around EUR 400 billion, which makes it the largest energy importer in the world. Six Member States depend on a single external supplier for their entire gas imports and therefore remain too vulnerable to supply shocks. 75% of our housing stock is energy inefficient. 94% percent of transport relies on oil products, of which 90% is imported. Collectively, the EU spent over EUR 120 billion per year – directly or indirectly – on energy subsidies, often not justified. Over EUR 1 trillion need to be invested into the energy sector in EU by 2020 alone.

Wholesale electricity prices for European countries are at low levels, though still 30% higher than in the US. At the same time, post-tax electricity prices for households increased on average by 4.4% from 2012 to 2013. Wholesale gas prices are still more than twice as high as in the US. The price difference with other economies has an impact on the competitiveness of our industry, in particular our energy-intensive industries.

European renewable energy businesses have a combined annual turnover of €129bn and employ over a million people. EU companies have a share of 40% of all patents for renewable technologies. However, Europe's share of global investment in renewable energy has slipped from almost half in 2010 to less than a quarter today.

Today, the European Union has energy rules set at the European level, but in practice it has 28 national regulatory frameworks. This cannot continue. An integrated energy market is needed to create more competition, lead to greater market efficiency through better use of energy generation facilities across the EU and to produce affordable prices for consumers.

The retail market is not functioning properly. Many household consumers have too little choice of energy suppliers and too little control over their energy costs. An unacceptably high percentage of European households cannot afford to pay their energy bills.

Energy infrastructure is ageing and not adjusted to the increased production from renewables. There is a need to attract investments, but the current market design and national policies do not set the right incentives and provide insufficient predictability for potential investors.

Energy islands continue to exist as many markets, for instance in South-East Europe, the Iberian Peninsula or the Baltic States, are not properly connected to their neighbours. This adds to the costs faced by customers and creates vulnerability in terms of energy security.

We are still leaders in innovation and renewable energy, but other parts of the world are fast catching up and we have already lost ground when it comes to some clean, low carbon technologies.

Building up investment in high-tech, globally competing companies through stable policies will bring jobs and growth to Europe. New business sectors, new business models and new job profiles will emerge. Such transformational change profoundly affects the roles of all actors in the energy system, including the consumers.

Europe needs to make the right choices now. If it continues on the present path, the unavoidable challenge of shifting to a low-carbon economy will be made harder by the economic, social and environmental costs of having fragmented national energy markets. The current low oil and gas prices, while they last, should be seized as an historic opportunity – when combined with the falling cost of cleaner forms of energy, a strong EU climate policy and the emergence of new technologies – to reset the EU's energy policy in the right direction: that of an Energy Union.

2. THE WAY FORWARD

The Energy Union strategy has five mutually-reinforcing and closely interrelated *dimensions* designed to bring greater energy security, sustainability and competitiveness:

- Energy security, solidarity and trust;

- A fully integrated European energy market;

- Energy efficiency contributing to moderation of demand;

- Decarbonising the economy, and

- Research, Innovation and Competitiveness

2.1. Energy security, solidarity and trust

In May 2014 the Commission set out in its Energy Security Strategy[1] how the EU remains vulnerable to external energy shocks and called on policy makers at national and EU level to make clear to citizens the choices involved in reducing our dependency on particular fuels, energy suppliers and routes. The Energy Union builds on this strategy.

Energy security requires more efficient energy consumption and the completion of the internal energy market. It depends on more transparency as well as on more solidarity and trust between the Member States. Joint approaches in the field of energy can make all parts of the European Union stronger, for instance in case of supply shortages or disruptions. The spirit of solidarity in energy matters is explicitly mentioned in the Treaty and is at the heart of the Energy Union.

Diversification of supply (energy sources, suppliers and routes)

The political challenges over the last months have shown that diversification of energy sources, suppliers and routes is important for ensuring secure and resilient energy supplies to European citizens and companies, who expect access to affordable and competitively priced energy at any given moment. To ensure the diversification in gas supplies, work on the Southern Gas Corridor must be intensified to enable Central Asian countries to export their gas to Europe. In Northern Europe, the establishment of liquid gas hubs with multiple suppliers is greatly enhancing supply security. This example should be followed in Central and Eastern Europe, and in the Mediterranean area, where a Mediterranean gas hub is in the making.

[1] COM (2014)330.

Constructing the infrastructure to deliver new sources of gas to the EU involves many partners, and is both complex and expensive. Resolving these issues requires resolute action at EU level. The Commission will reinforce its support for this process through the use of all available Community funding instruments in particular the future European Fund for Strategic Investment (EFSI), and fully involving European financial institutions. However, the necessary infrastructure must also be in place inside the EU, including the possibility of reverse flows, to bring the gas to where it is needed.

We will explore the full potential of liquefied natural gas (LNG), including as a back-up in crisis situations when insufficient gas is coming into Europe through the existing pipeline system. Increases in LNG trade will help to bring world natural gas prices closer together. Currently, LNG prices are higher compared to pipeline gas due in particular to high liquefaction, regasification and transportation costs and demand in Asia. In order to address these issues, the Commission will prepare a comprehensive LNG strategy, which will also look into the necessary transport infrastructure linking LNG access points with the internal market. The potential of gas storage in Europe and the regulatory framework needed to ensure sufficient gas in storage for winter will also be addressed in this context. The Commission will also work to remove obstacles to LNG imports from the US and other LNG producers.

Given the high volatility of oil prices, the EU's import dependence and global climate change challenges, we need to take additional measures to reduce its oil consumption, especially in the transport sector. Oil prices are currently low because of excess production, combined with lower consumption and increased energy efficiency.[2]

The EU is highly dependent on the import of uranium and related services to Member States where nuclear energy is part of the energy mix. Diversification of supply is important to ensure security of supply. The Commission will update and enhance the requirements on the information to be provided, in accordance with Article 41 of the Euratom Treaty, on nuclear installation projects.

Domestically produced energy also contributes to decreasing Europe's energy import dependence. This includes notably renewables, conventional and - for those Member States that choose it - non-conventional fossil resources.

Working together on security of supply

Member States, transmission system operators, the energy industry and all other stakeholders have to work closely together to ensure a high-level of energy security for European citizens and companies.

Regarding oil, important steps have been taken already with the adoption of the 2009 Oil Stocks Directive[3], which foresees obligations for Member States to build up and maintain minimum stocks of crude oil and petroleum products.

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[2] EU leadership will continue to drive standards and efficiency improvements globally, reducing future oil consumption and thus EU dependency.

[3] Directive 2009/119/EC of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products.

Member States should be assured that in situations of tight supply, they can rely on their neighbours. The Commission's 2014 Report on short-term resilience in the gas sector[4] stressed the need for stronger cooperation in responding to a potential supply disruption. To introduce common crisis management, the Commission will propose preventive and emergency plans at regional and EU level. Solidarity among Member States, in particular in times of supply crisis, has to be strengthened. These issues and the experience gained in the implementation of the Regulation will be taken into account when proposing a revision of the Security of Gas Supply Regulation.

The Commission will assess options for voluntary demand aggregation mechanisms for collective purchasing of gas during a crisis and where Member States are dependent on a single supplier. This would need to be fully compliant with WTO rules and EU competition rules.

Many Member States currently have no formal security of electricity supply standards in place and they use outdated and inconsistent approaches to assessing security of electricity supply. Working together with Member States, the Commission will establish a range of acceptable risk levels for supply interruptions, and an objective, EU-wide, fact-based security of supply assessment addressing the situation in Member States. This will take into account cross-border flows, variable renewable production, demand response and storage possibilities. Capacity mechanisms should only be developed to address security of supply if a regional system adequacy assessment points to such a need.

Stronger European role in global energy markets

The Energy Union is not an inward-looking project. A stronger and more united EU can engage more constructively with its partners, to their mutual benefit.

Energy policy is often used as a foreign policy tool, in particular in major energy producing and transit countries. This reality has to be taken into account when discussing Europe's external energy policy.

Therefore, the European Union has to improve its ability to project its weight on global energy markets. Together with its major partners, the European Union will work towards an improved global governance system for energy, leading to more competitive and transparent global energy markets.

EU trade policy contributes to greater energy security and diversification through the inclusion of energy-related provisions in trade agreements with its partners. Where the EU negotiates agreements with countries that are important from a security of supply perspective, the Commission will seek as a priority to negotiate provisions contributing to the energy security and sustainable energy goals of the Energy Union, including access to foreign markets for European energy technology and services[5] by pursuing an active trade agenda in the energy field.

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4 COM(2014) 654 final.

5 Initiatives such as "trade in green goods" will help promote products that help reduce CO2 emissions, benefit the environment and create EU jobs and growth.

As part of a revitalised European energy and climate diplomacy, the EU will use all its foreign policy instruments to establish strategic energy partnerships with producing and transit countries such as Algeria and Turkey; Azerbaijan and Turkmenistan; the Middle East; Africa and other potential suppliers.

The EU will further develop its partnership with Norway, the EU's second largest supplier of crude oil and natural gas. The EU will continue to integrate Norway fully into our internal energy policies. The EU will also develop its partnerships with countries such as the United States and Canada.

When the conditions are right, the EU will consider reframing the energy relationship with Russia based on a level playing field in terms of market opening, fair competition, environmental protection and safety, for the mutual benefit of both sides.

Particular attention will be paid to upgrading the Strategic Partnership on energy with Ukraine. This will address issues related to Ukraine's importance as a transit country as well as those related to Ukraine's energy market reforms, such as the upgrade of its gas network, the setting up of an appropriate regulatory framework for the electricity market and increasing energy efficiency in Ukraine as a means of reducing its dependence on imported energy.

In our immediate neighbourhood, the Commission will propose to strengthen the Energy Community, ensuring effective implementation of the EU's energy and competition acquis, energy market reforms and incentivising investments in the energy sector. The goal is closer integration of the EU and Energy Community energy markets.

More transparency on gas supply

An important element in ensuring energy (and in particular gas) security is full compliance of agreements related to the buying of energy from third countries with EU law. Such compliance checks for Intergovernmental Agreements (IGAs) and related commercial agreements based on the relevant Decision[6] are currently carried out after a Member State and a third country have concluded an agreement. In practice, we have seen that renegotiating such agreements is very difficult. The positions of the signatories have already been fixed, which creates political pressure not to change any aspect of the agreement. In future, the Commission should be informed about the negotiation of intergovernmental agreements from an early stage, so that a better ex ante assessment of IGA's compatibility with internal market rules and security of supply criteria is ensured. Commission participation in such negotiations with third countries and a move towards standard contract clauses could also more effectively avoid undue pressure and ensure respect of European rules. Therefore, the Commission will review the Intergovernmental Agreements Decision and will propose options to ensure that the EU speaks with one voice in negotiations with third countries.

The same principles should apply, subject to appropriate safeguards, to commercial gas supply contracts that may have an impact on EU energy security. Key features of the contracts should be aggregated and regularly published, in order to establish a transparent

[6] Decision No 994/2012/EU establishing an information exchange mechanism with regard to intergovernmental agreements between Member States and third countries in the field of energy.

benchmark which could be referred to in future negotiations, ensuring at the same time the confidentiality of sensitive information.

2.2. A fully-integrated internal energy market

Despite progress made in recent years, Europe's energy system is still underperforming. The current market design does not lead to sufficient investments, market concentration and weak competition remain an issue and the European energy landscape is still too fragmented. We have to give a new political boost to completing the internal energy market.

The internal market's hardware: connecting markets through interconnections

At this moment, the European electricity and gas transmission systems, notably cross-border connections, are not sufficient to make the internal energy market work properly and to link the remaining energy islands to the main electricity network.

Work on infrastructure projects has accelerated in recent years, even more so in light of recent events at the European Union's Eastern border. In 2013, the European Union identified 248 energy infrastructure Projects of Common Interest (PCIs). The list will be reviewed and up-dated later this year and then again every other year. In 2014, the European Energy Security Strategy identified 33 infrastructure projects which are essential to improve security of supply and better connect energy markets.

A specific minimum interconnection target has been set for electricity at 10% of installed electricity production capacity of the Member States, which should be achieved by 2020. The necessary measures to achieve this 10% target are set out in the Commission Communication presented with this Energy Union Strategic Framework. In 2016, the Commission will report on the necessary measures to reach a 15% target by 2030.

The transition towards a more secure and sustainable energy system will require major investments in generation, networks and energy efficiency, estimated at some € 200 billion annually in the next decade.[7] While the private sector will bear the costs of much of these investments, access to financing will be key. Today, the European Investment Bank, the Connecting Europe Facility and smart financing under the European Structural Investment Funds already provide the means. For projects not covered by these funds, the proposed European Fund for Strategic Investments will further facilitate access to finance for projects of European significance such as in energy networks, renewable energy and energy efficiency. The Commission will explore proposals for energy investment regimes that pool resources to finance economically viable investments, avoiding market distortion and fragmentation.

Investors can draw on the Investment Portal being set up as part of the European Fund for Strategic Investment that is designed to boost the transparency of the EU investment project pipeline to make information accessible to potential investors. The Commission will also bring together information on infrastructure projects funded by the Connecting Europe Facility and EU Regional Funds, to bring more coherence in the wide array of existing funding schemes and maximise their impact.

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7 EU Investment Plan, COM(2014)903

The Commission will regularly take stock of the implementation of major infrastructure projects which contribute to the Energy Union, in particular in the framework of the PCI follow-up. As part of this stock-taking exercise, it will make an annual report on the progress to reach the 10% electricity interconnection target with a specific focus on the implementation of the regional action plans. Finally, the Commission will also convene a dedicated Infrastructure Forum where progress should be discussed with the Member States, relevant regional cooperation groups as well as with EU institutions. It will meet for the first time in late 2015.

Implementing and upgrading the internal energy market's software

Full implementation and strict enforcement of existing energy and related legislation is the first priority to establish the Energy Union. There is no point in developing new policies and approaches on weak foundations.

The Commission will use all available policy instruments in this regard and will insist that Member States fully implement the 3rd Internal Energy Market Package, in particular as regards unbundling and the independence of regulators. Certain ex-ante conditions must be met before EU structural funds can be used for co-financing energy investments. This will help to ensure compliance with EU energy legislation.

Strict enforcement of the Treaty's competition rules will help to prevent companies from distorting the internal energy market. Antitrust enforcement will ensure that energy can flow freely by addressing territorial restrictions in supply contracts as well as upstream/ downstream and network foreclosure issues. The Commission will assess the evolution of energy prices in developing its approach to competition law enforcement.

A well-functioning internal energy market needs an effective regulatory framework. The 3rd Internal Energy Market Package set up bodies to ensure cooperation among transmission system operators and regulators. In the context of the market design discussion, the functioning of these bodies will be strengthened. Currently decisions in these bodies still reflect national views.

Transmission system operation will need to become much more integrated to meet the challenges of the transformed energy system. The European Networks of Transmission System Operators for Electricity and Gas (ENTSO-E/G), which were also set-up by the 3rd Internal Energy Market Package, need to be upgraded to fulfil such a role. Regional operational centres will have to be created, so that they can effectively plan and manage cross-border electricity and gas flows.

The Agency for Cooperation of Energy Regulators (ACER) was established by the 3rd Internal Energy Market Package to assist national regulators, in particular on cross-border issues. However, ACER currently acts primarily through recommendations and opinions. It has very limited decision-making rights, i.e. it can only take decisions at the request of the national regulators. EU-wide regulation of the single market should be strengthened, through a significant reinforcement of the powers and independence of ACER to enable it to effectively oversee, as European regulator, the development of the

internal energy market and the related market rules as well as to deal with all cross-border issues necessary to create a seamless internal market.[8]

The 3rd Internal Energy Market Package also provided for the adoption of network codes in order to help harmonise the flow of electricity and gas across different transmission systems. This work has to be completed to ensure a better functioning of cross-border energy markets.

Market integration of renewable electricity generation requires flexible markets, both on the supply and demand side, within and beyond a Member State's borders. Electricity grids must therefore evolve significantly. There is a need to expand the possibilities for distributed generation and demand-side management, including intraday markets, to develop new high-voltage long distance connections (supergrids) and new storage technologies.

The Commission will prepare an ambitious legislative proposal to redesign the electricity market. This will ensure that the electricity market will be better adapted to the energy transition which will bring in a multitude of new producers, in particular of renewable energy sources, as well as enable full participation of consumers in the market notably through demand response. Closer integration, including on a regional level, more cross-border trade and the development of both short and long term markets will deliver the right investment signals as well as the necessary flexibility to allow market integration of new generation sources.

Moreover, a serious overhaul is needed in relation to state interventions in the market. The Commission has already set out guidance[9] and rules[10] to limit the detrimental effects of badly-designed, fragmented and uncoordinated state interventions. However, effective application of this guidance can only be a first step to ensure that divergent national market arrangements, such as capacity mechanisms and uncoordinated renewables support schemes become more compatible with the internal market.[11] Even though in some cases required and justified to address market failures, some forms of state intervention have had a serious negative impact on the effective functioning of the internal energy market. The Commission will work together with Member States to ensure that capacity mechanisms and support for renewable electricity are fully in line with existing rules and do not distort the internal energy market. Environmentally harmful subsidies need to be phased out altogether. A reformed Emission Trading System will also play an important role in setting the right investment signals.

Finally, the Commission will ensure greater transparency in the composition of energy costs and prices, paying particular attention to state interventions such as regulated tariffs, energy taxation policies and the level of public support, as well as their impact on pricing mechanisms, including electricity tariff deficits.

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8 Examples for this could be decisions relating to new infrastructure affecting more than two Member States, on exemptions from physical reverse flows in line with the Security of Gas Supply Regulation, cross-border cost allocations under the TEN-E Regulation or similar.

9 See the Communication "Making the most of public interventions", C(2013)7243.

10 Energy and Environmental Aid Guidelines, OJ C 200, 28.6.2014, p. 1-55.

11 The application of EEAG to the support schemes approved to date has partly mitigated the effects of fragmentation, however, further action is needed.

Enhanced regional cooperation within a common EU framework

In an Energy Union, Member States must coordinate and cooperate with their neighbours when developing their energy policies.

Technical implementation of the different elements of our Energy Union strategy will be very complex. Some elements, such as new market arrangements for short term markets in gas and electricity or integrating the operations of transmission system operators should be developed and implemented at regional level as a step towards full EU-wide market integration. Existing arrangements such as the Pentalateral Energy Forum, the North Seas Countries Offshore Grid Initiative, the Baltic Energy Market Interconnection Plan (BEMIP) or the Mediterranean Energy Forum are initiatives on which to build further. Successes in these regions should act as a catalyst for other regions. The Commission will ensure that all regional initiatives evolve in a coherent way and lead towards a fully integrated Single Energy Market.

Given its particular vulnerability, there is a need to improve cooperation, solidarity and trust in the Central and South-Eastern part of Europe. Dedicated cooperation arrangements would help to accelerate the better integration of these markets into the wider European energy market which would improve the liquidity and resilience of the energy system and would allow full use of the region's energy efficiency and renewable energy potential. The Commission will take concrete initiatives in this regard as an urgent priority.

A new deal for consumers

In an Energy Union, consumers in one Member State should be able to buy their energy freely and simply from a company in another. This requires the further adaptation of the current national regulatory frameworks since the vast majority of European households remain passive consumers. In some Member States consumers have a limited choice of suppliers and switching between suppliers is relatively cumbersome.

In order to empower consumers, Member States and their authorities need to fully implement existing European rules. Necessary support measures should be undertaken also by regional and local authorities, so that consumers have understandable, readily-accessible information, user-friendly tools, and financial incentives for saving energy.

Smart technologies will help consumers and energy service companies working for them to reap the opportunities available on the energy market by taking control of their energy consumption (and possible self-production). This will deliver more flexibility in the market and potentially reduce consumer bills.

The Commission will continue to push for standardisation and to support the national roll-out of smart meters[12] and to promote the further development of smart appliances and smart grids, so that flexible energy use is rewarded. It will develop synergies between the Energy Union and the Digital Single Market agenda and take measures to ensure privacy protection and cyber-security.

[12] See Report "Benchmarking smart metering deployment in the EU-27 with a focus on electricity", COM(2014)356.

However, this will only work if market prices send the right signals. In a number of Member States, regulated tariffs still limit the development of effective competition, which discourages investments and the emergence of new market players. Regulated end-user prices are often used to protect households or even non-household customers from increases in energy costs. The impact of such measures falls on non-regulated customers, on electricity companies and/or public finances, where electricity tariff deficits are incurred. However, in the long run, these measures harm the interests of the consumers they are meant to help. The Commission will seek the phasing-out of below cost regulated prices by 2016 through the competition and economic governance frameworks. It will also encourage Member States to establish a road map for the phasing-out of all regulated prices.

Protecting vulnerable customers

Energy poverty negatively affects living conditions and health. It has many causes, mostly resulting from a combination of low income and general poverty conditions, inefficient homes and a housing tenure system that fails to encourage energy efficiency. Energy poverty can only be tackled by a combination of measures, mainly in the social field and within the competence of authorities on the national, regional or local levels. When phasing out regulated prices, Member States need to propose a mechanism to protect vulnerable consumers, which could preferably be provided through the general welfare system. If provided through the energy market, it could be implemented through a solidarity tariff or as a discount on energy bills. The cost of such schemes needs to be covered by non-eligible customers collectively. Hence, it is important that such a system is well targeted to keep overall costs low and to limit the distortions deriving from regulated prices (e.g. not increase further tariff deficits in Member States).

2.3. Energy efficiency as a contribution to the moderation of energy demand

It is necessary to fundamentally rethink energy efficiency and treat it as an energy source in its own right, representing the value of energy saved. Most of the work has to be done at national, regional and local level, but the Commission can play a strong role creating the appropriate framework for progress. The Commission will, therefore, encourage Member States to give energy efficiency primary consideration in their policies.

The EU has already put in place the world's leading set of measures to become more efficient in our energy consumption. Through energy labelling and ecodesign legislation, consumers can make informed energy consumption choices. While all economic sectors must take steps to increase the efficiency of their energy consumption, the Commission will pay special attention to those sectors with a huge energy efficiency potential, in particular the transport and buildings sector. The Commission will further establish synergies between energy efficiency policies, resource efficiency policies and the circular economy. This will include exploiting the potential of "waste to energy".

Increasing energy efficiency in the buildings sector

Space heating is the largest single source of energy demand in Europe and the majority of Europe’s gas imports go to heating and cooling of buildings. Huge efficiency gains remain to be captured with regard to district heating and cooling, which will be addressed in a Commission strategy.

Actions by Member States, particularly at the local and regional levels, are needed to exploit the energy efficiency potential of buildings. Attracting investments at the scale needed remains a challenge, especially at the local level, mainly due to lack of awareness and expertise in small-scale financing. The Commission will support ways to simplify access to existing financing and offer 'off-the-shelf' financing templates to interested stakeholders, promote new financing schemes based on profit-splitting and develop new financing techniques. Financial support needs to be combined with technical support to help aggregate small-scale projects into larger programmes which can drive down transaction costs and attract the private sector at scale.

The work of the Smart Cities and Communities-initiatives as well as to the Covenant of Mayors, which are primarily carried forward by mayors, civil society organisations, investors, financial institutions and service providers, is important for achieving progress on energy efficiency. This work has the Commission's firm support. The Commission will also develop a "global excellence for energy efficiency policy-making" initiative as a contribution to the G20 Energy Efficiency Action Plan. It will strongly promote the adoption of ambitious energy efficiency goals and targets in fora such as the UN "Sustainable Energy for All" initiative and the International Energy Agency. As a global leader in energy efficiency technology, this should be a driver for exports, and growth and jobs in the EU.

EU funds and EIB financing can make a huge difference. The European Fund for Strategic Investment provides an opportunity to leverage major investments in renovating buildings. Investments in this area can provide great returns in terms of growth and jobs.

Towards an energy-efficient, decarbonised transport sector

Transport represents more than 30% of final energy consumption in Europe. Realising its energy efficiency potential requires a continued focus on tightening CO_2 emission standards for passenger cars and vans post-2020, and on measures to increase fuel efficiency and reduce CO_2 emissions for heavy duty vehicles and buses.

This should be accompanied by measures to better exploit the potential of the single market and to internalise external costs. The Commission will promote the use of road charging schemes based on the polluter-pays and user-pays principles and increase efforts to create a single European transport area, based on a more optimal use of the fleet. Considerable fuel savings could also be realized by removing barriers to less green-house gas intensive modes of transport, such as rail, maritime transport and inland waterways, and by making these modes more attractive and cost efficient. The Commission will further promote the 'Shift2Rail'[13] initiative, including by identifying missing links in the European rail network.

The Commission will also take further actions to decarbonise the transport sector, which is still essentially running on oil products. This will require a gradual transformation of the entire transport system as well as an increased deployment of alternative fuels[14]. The Commission will take further action to promote the swift deployment of the necessary

[13] Regulation 642/2014 establishing the Shift2Rail Joint Undertaking.

[14] Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure.

infrastructure, i.e. refuelling and recharging stations. Market up-take of such vehicles depends on infrastructure, vehicles and fuels being rolled out together.

Electrification of transport is important to break oil dependency and to decarbonise transport, especially for road (short and medium distance) and rail transport. Europe needs to speed up electrification of its car fleet and become a leader in electro-mobility. This requires a full integration of electric vehicles in urban mobility policies and in the electricity grid, both as energy consumers and potential storage facilities.

2.4. Decarbonisation of the economy

An ambitious climate policy is an integral part of our Energy Union. The EU's climate policy is based on an EU-wide carbon market (the EU Emissions Trading System), ambitious but fair national green-house gas reduction targets for the sectors outside the Emissions Trading System and an energy policy to make the European Union the number one in renewable energy.

An ambitious EU Climate policy

The agreement on the 2030 Climate and Energy framework has defined the EU ambition to reduce domestic emissions by at least 40% compared to 1990. This makes an ambitious contribution to the international climate negotiations with a view to achieving a binding climate agreement in 2015. This contribution is spelled out in the communication on the Road to Paris, presented at the same time as this Energy Union Strategic Framework. The Commission, together with the Member States, will engage with other major economies to convince them to join Europe's ambition. It will do this through an active European climate diplomacy that makes full use of trade and development instruments.

The cornerstone of Europe’s climate policy is a well-functioning reformed EU Emissions Trading System that puts a meaningful price on carbon emissions and stimulates cost-efficient green-house gas emission reductions. The European Commission wants the EU Emissions Trading System to fully play its role as a technology neutral, cost-effective and EU-wide driver for low-carbon investments. Through its price formation at EU level it reinforces the functioning of the internal energy market and stimulates the uptake of renewables and other low-carbon and energy-efficient technologies. Policies to prevent carbon leakage should reflect the degree of efforts undertaken in other major economies.

For the sectors not included into the EU Emissions Trading System, national targets still need to be set and the land and forestry sector will be incorporated into the EU 2030 framework, ensuring that also these sectors have the right incentives to mitigate GHG emissions and contribute to the fight against climate change.

Becoming the number one in renewables

The European Union is committed to becoming the world leader in renewable energy, the global hub for developing the next generation of technically advanced and competitive renewable energies.

To integrate renewable production progressively and efficiently into a market that promotes competitive renewables and drives innovation, energy markets and grids have

to be fit for renewables.[15] Existing legislation and new market rules need to be fully implemented, enabling the roll-out of new technologies smart grids and demand response for an efficient energy transition.

Renewable production needs to be supported through market-based schemes that address market failures, ensure cost-effectiveness and avoid overcompensation or distortion. Low-cost financing for capital intensive renewables depends on having a stable investment framework that reduces regulatory risk. This is necessary to ensure investor confidence and to attract investments from international funds, large scale project promoters and cooperatives and households in a market-based framework that keeps capital costs down. The Commission will facilitate cooperation[16] and convergence of national support schemes leading to more cross border opening through in-depth discussions with Member States in implementing the respective Commission Guidance[17] and the Energy and Environmental Aid Guidelines.

Investment decisions in renewable electricity have to take into account the physical realities of resource availability and the grid; public acceptance; consumption location and administrative barriers. Also, the development of new infrastructure, especially interconnections, needs to lower the cost of integrating renewable electricity into the internal energy market.

The EU needs to invest in advanced, sustainable biofuel production processes and in the bio-economy more generally in order to retain technological and industrial leadership and to meet climate change objectives. This also needs to take into account the impact of biofuels on the environment, land-use and food production. The EU Investment Plan, as well as other EU financing sources, could help to ensure the necessary financing.

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15 Making markets fit for renewables means short term markets need to develop into deep, liquid and real time functioning. Existing power grids designed and often managed for conventional power production in a national scope are suboptimal for a future where supply from renewable sources will become ever more important and where balancing is needed to compensate for their inherent variability.

16 Several Member States are looking into using cooperation mechanisms from the Renewable Energy Directive to meet their national targets cost-efficiently. The Commission has been supporting this process by helping Member States to find solutions for technical and financial issues related to these cross-border mechanisms.

17 European Commission guidance for the design of renewables support schemes, SWD(2013)439; Guidance on the use of renewable energy cooperation mechanism, SWD(2013)440.

2.5. An Energy Union for Research, Innovation and Competitiveness

Research and Innovation (R&I) plays an essential role in creating the Energy Union. It underpins the delivery of the other four dimensions. Since Europe's energy, transport, and industrial systems are still largely fossil fuel-based, the Energy Union will inevitably require an element of disruption of old technologies, old business models and established interests and behaviour. The Commission will set up a multi-disciplinary scientific initiative on how our society can best prepare for deep decarbonisation pathways and the necessary transition scenarios for Europe in the timeframe 2030-2050.

Some crucial technologies on the supply side are clearly identified. The Energy Union's research and innovation agenda will consistently favour activities which boost the EU's competitiveness in the field of renewables and energy efficiency, and focus investments on high-added value innovation with competitive advantage potential. It will help to maintain and further develop Europe's lead in strategic renewable technology areas such as wind, solar and ocean energy generation as well as renewable-based district heating and cooling. It will contribute to Europe becoming a world leader in smart grid technologies and deployment, smart equipment, storage and user-friendly appliances, technologies that are expected to play a fundamental role in increasing the flexibility of energy consumption, and to the further development of a new policy on sustainable and environment-friendly production and use of biomass and biofuels.

In order to reach the 2050 climate objectives in a cost-effective way, we need a forward-looking approach to carbon capture and storage (CCS) and carbon capture and use (CCU) for the power and industrial sectors. This will require an enabling policy framework, notably through the reform of the Emissions Trading System, to increase business and investor clarity, which is needed to further develop this technology.

Nuclear energy presently produces nearly 30% of the EU's electricity. The EU must ensure that Member States use the highest standards of safety, waste management and non-proliferation. The EU should also ensure that it maintains technological leadership in the nuclear domain, including through ITER[18], so as not to increase energy and technology dependence.

Although many key enabling technologies are identified, there are other important ones yet to emerge, and therefore there is a need to provide a scoping analysis of the entire technological landscape. This is the objective of the Strategic Energy Technology Plan, which will now also focus on achieving better coordination and actual synergies of R&I actions among Member States

An innovation-driven transition to a low carbon economy offers great opportunities for growth and jobs. New business sectors, new business models and new job profiles will emerge. Technological leadership must be followed by the development of industrial production capabilities or technology supply chains across Europe. This requires bringing together research, industry, the financing sector and public authorities. An efficient industrial strategy along these lines will enable the EU industry to benefit from the first-mover advantage, both domestically and within international technology markets, with the positive effects on competitiveness and job creation. The Commission will explore how public procurement can exploit its potential to act as a catalyst for

[18] http://www.iter.org/.

industrial and business innovation, and green growth both within the EU and beyond its borders. It will make full use of EU trade policy to improve access to foreign markets for Energy Union related technologies and services as well as to protect the EU market from unfair trade practices, and support other countries in their efforts to establish modern and sustainable energy systems.

Change also means that some sectors, business models or job profiles will have to adjust. Vocational and other training paths for new or adapted job profiles have to be established, corresponding to the new business needs and providing people with solid professional skills. An energy transition that is just and fair will therefore require re-training or up-skilling of employees in certain sectors and, where needed, social measures at the appropriate level. The first-hand knowledge and experience of the social partners is crucial in this regard. The Commission will make sure that the energy transition is reflected in the social dialogue at European level.

3. Energy Union Governance

The Energy Union also needs an integrated governance and monitoring process, to make sure that energy-related actions at European, regional, national and local level all contribute to the Energy Union's objectives. The governance process should serve the following purposes:

- bring together energy and climate actions as well as actions in other relevant policy areas, leading to more and longer-term policy coherence. This also provides long term certainty and guidance for investors;
- secure implementation of the internal energy market and the delivery of the 2030 energy and climate framework, notably the implementation of the agreed 2030 targets on renewables, energy efficiency, non-Emissions Trading System and interconnections;
- streamline current planning and reporting requirements, avoiding unnecessary administrative burden;
- involve an energy dialogue with stakeholders to inform policy-making and support active engagement in managing the energy transition;
- deepen the cooperation between Member States, including at the regional level, and with the Commission;
- improve the data, analysis and intelligence needed to underpin the Energy Union, and
- annual reporting to the European Parliament and the Council on the state of the Energy Union in order to address the key issues and steer the policy debate.

The Commission will launch a dynamic governance process for the European Energy Union. While there will be clear links between this governance process and the European Semester, the two processes will be managed separately.

4. Delivering the Energy Union

Achieving the Energy Union means delivering on the actions set out in this Strategy, which are summarised in the fifteen points set out below. The attached roadmap shows all the initiatives to be developed as part of the Strategy, with a clear timetable for adoption and implementation as well as respective responsibilities. The Commission

regards these as inter-linked, indispensable and consistent with the scale of ambition the EU needs to transform Europe's energy system.

Successful implementation depends on the political commitment of all actors concerned, including EU institutions, Member States, the European Investment Bank and other stakeholders, including at regional and local level, in line with the principles of subsidiarity and proportionality.

The EU must be able to react to unexpected events, seize new opportunities and anticipate and adapt to future trends. Whenever necessary, the Commission will use its right of initiative to set out an appropriate response to events.

The Commission invites the European Parliament and Council to endorse this strategy to deliver Energy Union and to actively engage in its implementation, in close cooperation with all relevant stakeholders.

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The Energy Union in fifteen action points

1. Full implementation and strict enforcement of existing energy and related legislation is the first priority to establish the Energy Union.

- ➢ The Commission will use all available policy instruments to ensure that Member States fully implement the 3rd Internal Energy Market Package and it will strictly enforce the Treaty's competition rules.

2. The EU needs to reinforce the security of supply for electricity and better manage this security at the European level.

- ➢ The Commission will propose legislation on security of supply for electricity in 2016.

3. The EU needs to diversify its supply of gas and make it more resilient to supply disruptions.

- ➢ The Commission will propose a resilience and diversification package for gas in 2015-2016 by revising the existing security of gas supply Regulation.

- ➢ The Commission will prepare a comprehensive strategy for liquid natural gas (LNG) and its storage, and

- ➢ The Commission will work with Member States to develop access to alternative suppliers, including from the Southern Gas Corridor route, the Mediterranean and Algeria, in order to decrease existing dependencies on individual suppliers.

4. Intergovernmental agreements should comply fully with EU legislation and be more transparent.

- ➢ The Commission will propose a revision of the Decision on Intergovernmental Agreements in 2016 to ensure compatibility with EU legislation before agreements are negotiated, involve the Commission in such negotiations, develop standard contract clauses covering EU rules and make commercial gas supply contracts more transparent.

5. The right infrastructure is a precondition for completing the energy market, integrating renewables and security of supply.

- ➢ The Commission will support the implementation of major infrastructure projects, particularly the Projects of Common Interest, through the available financial means, e.g. the Connecting Europe Facility, the European Structural and Investment Funds and the future European Fund for Strategic Investments.

- ➢ The Commission will bring together information on EU-funded infrastructure projects to bring more coherence and to maximise their impact.

- ➢ In 2015, the Commission will create a dedicated Infrastructure Forum to discuss progress on major infrastructure projects with Member States, regional cooperation groups and EU institutions. It will meet for the first time in late 2015.

6. The integration of renewables in the market and the currently uncoordinated development of capacity mechanisms in Member States call for a review of the current market design.

- ➢ The Commission will propose a new European electricity market design in 2015, which will be followed by legislative proposals in 2016.

7. The regulatory framework set-up by the 3rd Internal Energy Market Package has to be further developed to deliver a seamless internal energy market to citizens and companies.

- ➢ The Commission will review the regulatory framework, in particular the functioning of ACER and the ENTSOs, in 2015/16 and will propose appropriate actions to reinforce the European regulatory framework.

8. Regional approaches to market integration are an important part of the move towards a fully integrated EU-wide energy market.

- ➢ The Commission will develop guidance on regional cooperation and engage actively in regional cooperation bodies with Member States and stakeholders.

9. Greater transparency on energy costs and prices as well as on the level of public support will enhance market integration and identify actions that distort the internal market.

- ➢ The Commission will produce biennial reports on energy prices, analyse in depth the role of taxes and subsidies and seek the phasing out of regulated prices below cost.

- ➢ At the national and local levels, action should be taken to protect vulnerable customers through social policies.

10. The EU has set itself the target of reaching at least 27% energy savings by 2030.

- ➢ In 2015 and 2016, the Commission will review all relevant energy efficiency legislation and will propose revisions, where needed, to underpin the 2030 target.

- ➢ Member States and regions should make more use of European funds for renovation of housing.

11. Buildings have huge potential for energy efficiency gains. Retrofitting existing buildings to make them energy efficient and making full use of sustainable space heating and cooling will reduce the EU's energy import bills, reinforce energy security and cut energy costs for households and businesses.

- ➢ The Commission will develop a 'Smart Financing for Smart Buildings'-initiative to make existing buildings more energy-efficient, facilitating access to existing funding instruments.

- ➢ The Commission will propose a strategy to facilitate investment in heating and cooling.

12. The EU needs to speed up energy efficiency and decarbonisation in the transport sector, its progressive switch to alternative fuels and the integration of the energy and transport systems.

- ➢ The Commission will propose a comprehensive road transport package promoting more efficient pricing of infrastructure, enhancing energy efficiency and creating the right market conditions for an increased deployment of alternative fuels. This will be delivered through a mix of national, regional and local measures, supported by the EU.

13. The EU agreed a climate and energy framework for 2030 at the October European Council. This now needs to be implemented. The EU will provide an ambitious contribution to the international climate negotiations.

- ➢ The Commission will propose legislation to achieve the greenhouse gas reduction target agreed at the October 2014 European Council both in the Emissions Trading System and in the sectors outside the Emissions Trading System.

14. The EU has agreed the target of at least 27% at EU level for renewable energy by 2030.

- ➢ The Commission will propose a new Renewable Energy Package in 2016-2017. This will include a new policy for sustainable biomass and biofuels as well as legislation to ensure that the 2030 EU target is met cost-effectively.

15. The EU needs to develop a forward-looking, energy and climate-related R&I strategy to maintain European technological leadership and expand export opportunities.

- ➢ The Commission will propose an upgraded Strategic Energy Technology Plan, with a limited number of essential priorities and clear objectives, in 2016.

- ➢ The Commission will develop an initiative on global technology and innovation leadership on energy and climate to boost jobs and growth.