

Research Briefing **EU Energy Union**

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National Assembly for Wales
Research Service

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Research Briefing

EU Energy Union

As the largest energy importer in the world, the EU imports 53 per cent of its energy, costing around €400bn per year. Of the 28 Member States, six import their gas from one supplier, Russia, rendering them vulnerable to disruptions in supply. Wholesale gas prices are more than twice as high as in the USA, and wholesale electricity more than 30 per cent higher.

The European Commission believes that lower prices and greater energy security could be achieved with an internal Energy Union, as was proposed in February 2015.

This briefing provides an outline of the Energy Union as proposed by the European Commission.



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1. Background

The European Union has a **history of common energy policies**, starting with the European Coal and Steel Community in 1952, and the European Atomic Energy Community (Euratom) in 1957.

A number of **liberalisation packages in 1990, 2003 and 2009** have established the EU internal energy market, which is what the Energy Union aims to build upon.

In 2012, the **Energy Efficiency Directive** established measures to be introduced in Member States by 2014, which aim to help the EU meet the target of 20 per cent reduction in primary energy consumption by 2020.

More recently in April 2014, the then Prime Minister of Poland, Donald Tusk, **called for a move towards an energy union within the EU**, primarily focussed around securing the gas supply following the crisis in Ukraine.

In May 2014 the European Commission released the **European Energy Security Strategy**, which included countries carrying out energy security stress tests simulating disruption or halts to imports of gas from Russia, as well as building more foundations for the Energy Union.

In July 2014, the incoming president of the European Commission Jean-Claude Juncker laid out his **political guidelines** for the next Commission, and included a call for a 'Resilient Energy Union with forward-looking climate change policy'. The Energy Union package was published in February 2015.

2. Aims of the Energy Union

The Energy Union aims to create a single energy market within the European Union, with the goal of supplying consumers with secure, sustainable, affordable and reliable energy. This section summarises the main points from the **Energy Union Framework**.

Why the European Commission believes the Energy Union is needed

The Commission believes that the current system of every country maintaining its own national regulatory framework for energy is not sustainable. It believes that if a single integrated energy market across the European Union was introduced, it would result in better competition, increased market efficiency and more affordable prices for consumers.

The Energy Union Framework also states that the ageing energy infrastructure in the EU has failed to adapt sufficiently to the influx of energy from renewable sources in recent years, and that current market design and national policies are not sufficiently incentivising potential investors in the network.

Areas of energy isolation exist within Europe, with regions not adequately integrated with the rest of the market, which reduces energy security in these areas and can increase costs for consumers.

Finally, the Commission notes that although Europe still leads in innovation and renewable energy, it is vital to attract investment in these areas from high-tech global companies in order for Europe to maintain its position as a world leader. This investment also has the potential to bring new jobs and growth to Europe.

3. Five dimensions for the EU Energy Union

Five “dimensions” have been proposed by the European Commission in their Energy Union Framework:

- 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.

Energy security, solidarity and trust

In order to ensure secure energy supplies for European consumers, the Commission believes that it is imperative to diversify the sources, suppliers and routes of supply of energy coming into the EU. The completion of work on the Southern Gas Corridor will allow countries in Central Asia to export gas to Europe, widening the range of sources that the EU can draw upon. The successful establishment of liquid gas hubs in Northern Europe could be replicated in Central and Eastern Europe, and in the Mediterranean area. The Commission also notes that the EU is largely dependent on imports for its supply of oil and nuclear fuel, and encourages reduction in consumption and diversification of supply, respectively. The Commission views solidarity of Member States, particularly in times of energy shortage, as a key part of the Energy Union. A **report** by the Commission in 2014 indicated a need for better cooperation in response to disruptions in supply. Outward-looking solidarity is important to the Energy Union too, with the option for collective gas purchasing from a single supplier during a crisis, to strengthen the buying power of the EU.

A fully integrated European energy market

The current energy infrastructure in Europe is not sufficient to support the type of internal energy market the Commission is calling for. To this end, in 2013, **248 energy infrastructure Projects of Common Interest (PCIs) were identified by the EU**, as well as 33 projects in 2014, considered vital to improve the security of supply and meet the 10 per cent target for interconnectedness of electricity markets by 2020. An example is the ‘Greenlink’ connection between Ireland and Pembroke. The estimated €200 billion per year for the next decade required for these investments will come mainly from the private sector, with assistance in access to financing from the European Investment Bank, the Connecting Europe Facility and the European Structural and Investment Funds. Options for new energy investment regimes will be explored by the Commission. It will also collate information on the progress of infrastructure projects, and report annually on the progress towards the 10 per cent electricity interconnection target.

A new energy market design

The Commission’s **Public Consultation on a New Energy Market Design** made a number of potential recommendations for an overhaul of the energy market. The consultation addressed the Commission’s vision for a new energy market design in Europe, and how that could be achieved.

The Commission’s vision for a new energy market is one where energy is able to move across borders to where it is most wanted, needed and valued, allowing providers and consumers to reap the most benefit from cross-border competition between energy companies. This should also provide the right

signals to investors to encourage the private sector to fund the infrastructure that will be required. The Commission also emphasises the need to have well-functioning short-term markets as well as long-term ones, which cater for electricity from the day ahead of delivery to the moment of consumption and allow for moderations in flow at very short notice. The widespread introduction of 'enabling technology' such as smart meters, self-generation and storage equipment will encourage consumers to take ownership of their energy consumption and reduce their bills.

The delivery of a new electricity market for the EU has a number of elements. The Commission firstly reiterates the value of short-term markets to improve flexibility, but also highlights the importance of storage capacity in enhancing market flexibility and smoothing the variability in production that could result from an increase in the market share of renewables. In the long term, markets must allow prices to fluctuate and reflect scarcity during demand peaks and vice versa, although energy suppliers should be able to manage price swings themselves without necessarily exposing consumers to volatile prices. The need to integrate renewables into the grid is of very high importance if the EU is to meet its emissions and energy efficiency goals. For this, consumers must be sufficiently incentivised to manage their demand to times when the supply is more plentiful. Investments and subsidies also need to take a regional approach so that the renewable technology best suited to a geographical area is actively promoted in that region.

Energy efficiency contributing to moderation of demand

In October 2014, the European Council set a target for the EU to improve energy efficiency by 27 per cent by 2030, to be reviewed in 2020 with an aim to raise the target to 30 per cent. Sectors identified with particular potential for energy savings are the transport and building sectors.

The majority of gas imports to Europe are used to generate energy for heating and cooling of buildings, at 50 per cent of total energy consumption. Transport accounts for 30 per cent of energy consumption, which could be reduced by continuing to tighten controls on carbon emissions by passenger cars and vans; and in the future, heavy-duty vehicles and buses. The Commission proposes that barriers to greener modes of transport should be removed (such as rail, maritime and inland waterway transport) by making these methods more cost efficient and attractive to industry and the public. The transport sector still runs almost exclusively on oil products so a shift away from this will need to be gradual, but requiring the rapid installation of necessary infrastructure, for example recharging stations for electrified transport.

Decarbonising the economy

The EU has committed to a 40 per cent domestic reduction in greenhouse gas emissions compared to 1990 levels by 2030. The Commission views the EU Emissions Trading System (EU ETS) as an important part of this, by placing a price on carbon emissions and encouraging cost-efficient reductions in greenhouse gas emissions. This is designed to encourage the uptake of renewable, low-carbon and energy-efficient technologies. Some sectors are not included in the EU ETS, for example the land and forestry sector. The Commission suggests these should be incorporated into the EU framework for 2030 in order for them to mitigate greenhouse gas emissions.

The EU has a target for 27 per cent of its energy consumed to be from renewable sources by 2030, and is already on track to meet the interim target of 20 per cent by 2020. However, increase in the production of renewable energy relies on sufficient cost-effective infrastructure, and further challenges must be addressed before the 2030 target can be reached. Costs for some types of renewable energy such as wind and photo-voltaic power have already fallen as the technology has become more widespread. However, existing grids are designed for conventional power generation and are not suited to the variability in supply of renewable energy. Legislation already exists under

Section 88 of the **Energy Act (2008)** to enable the obligatory roll-out of smart grids which could aid an efficient energy transition, but this are yet to be fully implemented. This power currently lies with the UK Government and there has been no transfer of Ministerial power to Welsh Ministers. The Commission states it is important to avoid market distortion or over-compensation when trying to adapt the existing market to renewables, and the availability of low-cost financing would encourage investor confidence and attract investments internationally. The Commission notes that biofuels may be a good alternative fuel, but that the impact of bioenergy on the environment, land-use and food production should not be overlooked.

Research, innovation and competitiveness

The Commission considers that for the Energy Union to be a success the EU must have the most effective renewable technologies and storage solutions available to it. It suggests research could be more effective by coordinating Member State programmes around common goals, towards four core priorities:

- Being the world leader in developing the next generation of renewable energy technologies, including environment-friendly production and use of biomass and biofuels, together with energy storage;
- Facilitating the participation of consumers in the energy transition through the use of smart grids, smart home appliances, smart cities, and home automation systems;
- Efficient energy systems, and harnessing technology to make the building stock energy neutral; and
- More sustainable and energy-efficient transport systems that develop and deploy large-scale innovative technologies and services.

The Commission also proposes a greater level of cooperation in research between Member States who choose to use carbon capture and storage (CCS) and carbon capture and use (CCU), and nuclear energy.

4. European Council response

In its **response** to the Commission, the Council supported the five dimensions of the Energy Union, and called upon the Commission to implement the actions described within them as quickly as possible. It also suggested that the Commission should report on progress towards the Energy Union to the Council by December 2015, including a plan for the governance system and guidelines on regional cooperation. **The State of the Energy Union 2015** was published at the end of November 2015, and provides a summary of progress on each “dimension”, as well as detailing the next steps and outlining policy goals.

The Council also warned the Commission to avoid unnecessary bureaucracy when monitoring energy costs and prices, and urged it to explore fully the scope of all the existing EU financing instruments, as the Energy Union project is highly dependent on significant private investment facilitated by EU financing bodies.

5. European Parliament response

The Parliament **welcomed** the Energy Union proposals by the Commission. It called on the Commission to report annually on progress towards the Energy Union and meeting the targets of

2020 and 2030. It also suggests the development of a set of indicators to monitor progress. The Parliament agrees with the Council in its calls for Member States to develop longer-term energy strategies to 2050, to meet the goal of reducing emissions by 80 to 95 per cent compared to 1990 levels.

The Parliament's main concern is that the 2030 targets for emissions, share of renewables and energy efficiency do not go far enough. The Parliament says they have repeatedly suggested at least a 40 per cent reduction in emissions, a 30 per cent target for renewable market share, and a 40 per cent target for energy efficiency.

6. What this means for Wales

The devolution of energy policy to Wales is complex.

Currently, planning of schemes for onshore power generating infrastructure of less than 10MW are dealt with by local planning authorities, 10-50MW are decided by Welsh Ministers following the **Planning (Wales) Act (2015)**, and above 50MW is the responsibility of the UK Government (apart from onshore wind). However, the new Wales Bill could change that by allowing Welsh Ministers to decide on schemes of up to 350MW, taking in most renewable energy projects.

Offshore power generation below 1MW is under the control of Welsh Ministers, with projects between 1MW and 100MW being the responsibility of the Marine Management Organisation, a non-departmental public body sponsored by the UK Government. The new Wales Bill proposes the devolution of projects up to 350MW in Welsh territorial waters to Welsh Ministers, though offshore (up to 12 nautical miles from the shore) schemes greater than 100MW. Schemes in territorial waters (beyond 12 nautical miles from the shore but within UK controlled waters) above 350MW will remain under the control of the UK Government.

Apart from the encouragement of energy efficiency other than by means of prohibition or regulation, **energy conservation is an exception from the Assembly's legislative competence**. This means that the Assembly can only legislate on energy efficiency by means of encouragement, rather than prohibition or regulation. Since 2011, Ministers have been able to make regulations under the **Building Act (1984)** as a result of the **Welsh Ministers Transfer of Functions (No 2) Order (2009)**, subject to some exceptions. This means that Welsh Ministers could, for example, pass regulations requiring all new build housing to meet a certain energy efficiency standard. The Welsh Government also has to **powers to give grants or other financial assistance** to incentivise or enable energy efficiency projects.

Electricity transmission, distribution and supply are exceptions in Schedule 7 of the **Government of Wales Act (2006)**, so the National Assembly for Wales is not able to legislate in this area and the Welsh Ministers have few executive powers. Because of the way energy storage is currently categorised, it is likely to fall within these exceptions and therefore is also not an area on which the Assembly can legislate. Wales will however still be directly affected by European decisions in these areas.

Welsh Government energy policy already addresses a number of the ideas proposed by the European Commission in the Energy Union framework. The Government's **Energy Wales: A Low Carbon Transition** document lists a number of policies, including:

- Engaging the private sector in the modernisation of the grid,

- Sourcing funding from various European sources such as the European Regional Development Fund,
- Reinvesting benefits from energy projects into further improvements in infrastructure,
- Developing the future workforce to have the skills required to meet the industry needs in science, technology and engineering,
- Streamlining the planning and consenting regime for new renewable energy developments,
- Investing heavily in pre-existing energy efficiency schemes such as Arbed and fuel poverty schemes such as Nest,
- Piloting a major smart-living project in Wales.

The **Green Growth Wales: Local Energy** initiative sets out the Welsh Government’s vision for local energy in Wales. The Government aims to encourage smarter energy use, simplify planning regimes for local renewable energy installations, reduce the need for major grid infrastructure due to local generation and consumption of energy, and reduce fuel poverty. It hopes this will bring investment and jobs to the Welsh economy, as well as increasing Wales’ resilience to fluctuations in energy prices and meeting climate targets.

The Welsh Government also runs the **Local Energy Service** which aims to support communities in the development of their own local renewable energy generation projects. The service has three key elements:

- A renewable energy toolkit providing guidance on project development through to construction and operation,
- Support and advice provided by locally based technical experts and development officers,
- The provision of loans and grants to support project development.

The Assembly’s Environment and Sustainability Committee published its report into **A Smarter Energy Future for Wales** in March 2016. If smart energy becomes a priority for the EU, Wales could benefit from increased funding and support. For example, the inquiry held by the Committee found that many stakeholders feel that the limiting factor for a smarter, more sustainable future for Wales was grid capacity. This is something that could be addressed in the Energy Union framework.

7. UK Government position

The Energy Union announcement was broadly welcomed by the UK Government. In an **Explanatory Memorandum** on the Communication from the Commission, the UK Government stated:

... We particularly welcome [the] fact that they encompass a forward looking climate policy, the centrality of completing the internal energy market, and initiatives to strengthen the EU’s bargaining power and reduce dependency on Russian gas to enhance the EU’s energy security...

The UK Government welcomed the focus in the research and innovation section on nuclear power and carbon capture and storage technologies. This is despite the Commission emphasising renewable energy in its decarbonisation, rather than recognising the roles that nuclear power and CCS could play in this.

8. Timeline

2016

- The Commission will propose a revision of the Decision on Intergovernmental Agreements.
- The Commission will propose legislation on security of supply for electricity.
- The Commission will propose legislation on a new European electricity market design.
- The Commission will propose a European energy research and innovation approach, including a strategic agenda and an upgraded Strategic Energy Technology Plan.

2017

- The Commission will propose a new Renewable Energy Package, including new policy regarding the use of biomass and biofuels.

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