

Energy supply and security

SUMMARY

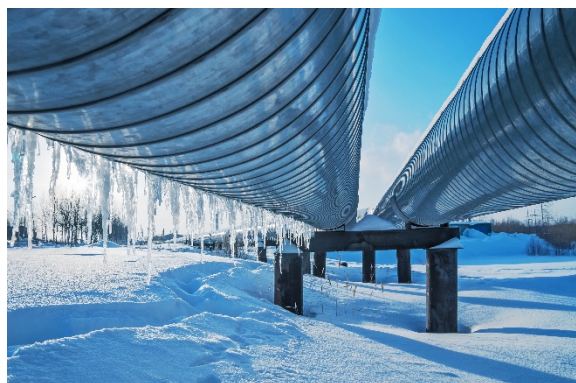
Energy policy is a competence shared between the EU and its Member States. Whereas the EU has responsibility under the Treaties to ensure security of supply, Member States are responsible for determining the structure of their energy supply and their choice of energy sources. EU legislation on security of supply focuses on natural gas and electricity markets, and is closely related to other EU objectives: consolidating a single energy market, improving energy efficiency, and promoting renewable energy sources to decarbonise the economy and meet the Paris Agreement goals.

The 2014-2019 legislature saw numerous initiatives in connection with security of supply. The EU institutions reached agreement on a revised regulation on security of gas supply, a revised regulation on security of electricity supply, a revised decision on intergovernmental agreements in the energy field, a targeted revision of the gas directive to apply its key provisions to pipelines with third countries, and also new targets for energy efficiency and renewables by 2030. Parliament also adopted several own-initiative resolutions in the energy field, including one on the new EU strategy on liquefied natural gas and gas storage, which is key to gas supply security. Meanwhile, EU projects of common interest (PCIs) finance energy infrastructure that improves interconnection and supports security of supply.

There is growing expectation among EU citizens that the EU will step up its involvement in energy supply and security. Whereas this view was shared by just over half of EU citizens in 2016 (52 %), it is now expressed by roughly two thirds (65 %).

The EU will retain a key role in monitoring security of supply throughout the energy transition from the old system of centralised generation dominated by fossil fuels in national markets, towards a new system characterised by a high share of renewables, more localised production and cross-border markets. However, the EU would need to use a special legislative procedure if it wanted to intervene directly in determining the energy supply of its Member States. This procedure requires decision-making by unanimity in Council and only a consultative role for the Parliament.

This is an update of an earlier briefing issued in advance of the 2019 European elections.



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State of play

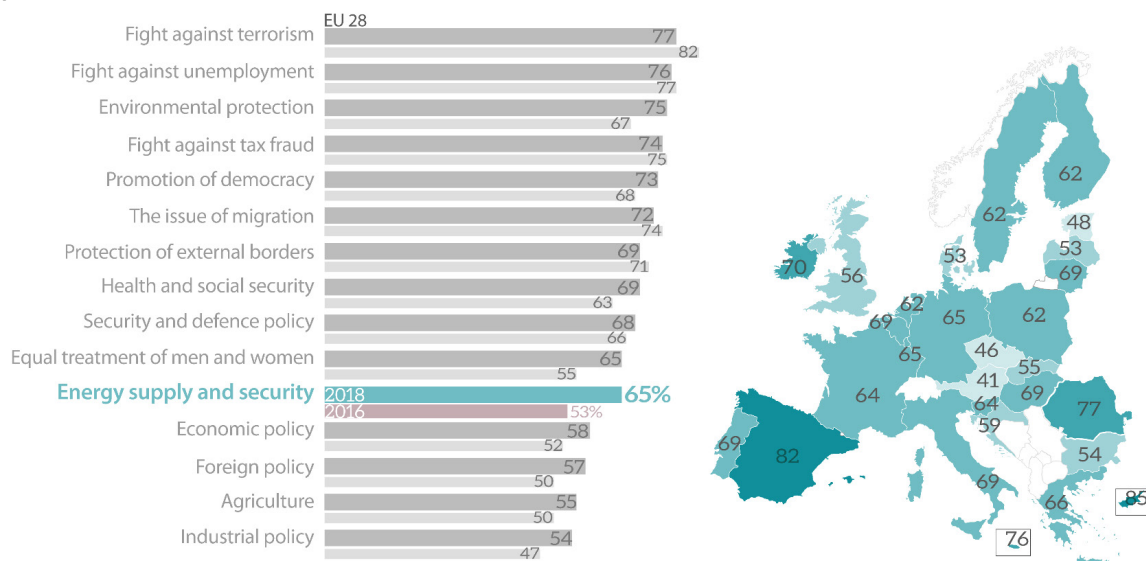
Secure energy supplies are indispensable for citizens' wellbeing and are necessary for businesses and social services to function properly. Each Member State in the EU is largely free to decide on the structure of its energy supply, and can choose its own 'energy mix' – the combination of energy sources it will use to deliver that supply. Security of supply is guaranteed in the first instance by national authorities. Yet the interconnected nature of energy markets and their supply routes mean that close coordination between neighbouring countries is necessary to ensure security of supply. This is particularly important within the EU because of the development of a single market in energy since the 1990s. National energy markets in the EU are more interconnected than in the past, and operate within a shared legal framework. This brings many benefits for EU citizens in terms of being able to choose their energy supplier freely, assert their consumer rights, and benefit from lower prices in more transparent and competitive markets. At the same time, greater cross-border interconnection between Member States requires enhanced coordination at EU level to ensure no disruption to supplies. This is why the Treaties allow the EU to act on the security of energy supply, and why it has chosen to do so in particular for natural gas, electricity markets and oil reserves.

Security of energy supply is a global challenge that nevertheless displays strong regional characteristics. The EU faces a distinct set of challenges. The first is heavy reliance on all kinds of **imported fossil fuels** (coal, natural gas, oil). Domestic production of fossil fuels is in decline across the EU, whether because of limited reserves, environmental concerns, or commercial considerations. The net effect is that the EU imports more than half of the energy that it consumes, at a cost of more than €1 billion per day. The EU currently imports 90 % of its crude oil, 69 % of its natural gas, and 42 % of its coal and other solid fuels. The EU also remains reliant on third countries for 40 % of its uranium and other nuclear fuels, with nuclear fuel supplies addressed within the framework of the Euratom Treaty. A more positive development for security of supply is that the EU is actively working towards curbing its **energy consumption** and increasing its energy savings, as well as promoting and incentivising the use of **renewable energy sources**, which have a positive impact on security of supply by reducing dependence on imported fossil fuels. Many renewable energy sources are locally generated (e.g. wind, solar, hydro), or can be supplied on a local or regional basis if such production is incentivised or commercially viable (e.g. biofuels).

EU legislation on security of supply **focuses on natural gas and electricity markets**, reflecting the particular cross-border challenges associated with security of supply in these sectors. Coal and oil are internationally traded commodities, supplied by a wide range of third countries (as well as some EU producers). Coal and oil can be stored and transported quite easily, without the need for major public investment in new infrastructure. Therefore, the EU has not had much need to intervene in coal and oil markets, although the 2009 Oil Stocks Directive does ensure that EU Member States meet their [emergency oil reserve obligations](#), in line with the requirements set by the International Energy Agency. By contrast, the supply of natural gas to Europe remains heavily reliant on historic pipelines from a small number of producer countries (mainly Russia, Norway and Algeria). This poses particular challenges in terms of supply diversification, market access and competition, and infrastructure reliability. When it comes to the electricity sector, the biggest challenge is the need for **grid modernisation** to accommodate a growing share of renewable energy sources and local power generation into national electricity markets with growing cross-border capacity. Furthermore, some key renewable energy sources have a variable and not fully predictable supply (i.e. wind and solar), so it is vital for national authorities across the EU to properly coordinate their electricity policies in order to avoid sudden surges or losses of power. The EU needs to be continually vigilant in monitoring electricity and gas markets, ensuring that as these energy markets change, security of supply to households, businesses and social services is maintained at all times.

Public expectations for EU involvement

Figure 1 – Percentage of respondents who would like the EU to intervene more than at present

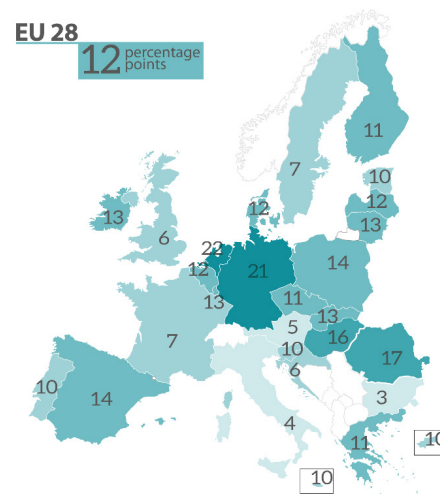


Data source: Eurobarometer [85.1 - 2016](#); [89.2 - 2018](#).

According to a series of Eurobarometer surveys carried out for the European Parliament on 'perceptions and expectations', EU citizens' support for greater EU involvement in the energy supply and security policy area grew from 53 % in 2016 to 65 % in 2018. This is a 12 percentage point increase in citizens' expectations – the highest of all the policy areas addressed. There is still significant variation in support for increased EU involvement across the Member States. The strongest and weakest support for increased EU action was recorded in the same Member States in 2016 and in 2018, despite the increased support across all Member States. The expectations for greater EU involvement were strongest in Cyprus (85 % in 2018; 75 % in 2016) and Spain (82 % in 2018; 68 % in 2016), and weakest in the Czech Republic (46 % in 2018; 35 % in 2016) and Austria (41 % in 2018; 36 % in 2016).

The overall increase in support for increased EU involvement in the energy supply and security policy area was 12 percentage points. This is the only policy area in which the trend towards increased expectations was unanimous across all Member States. The most prominent increases were registered in the Netherlands (an increase of 22 percentage points) and Germany (an increase of 21 percentage points). The least significant changes were recorded in Bulgaria (increase of 3 percentage points) and Italy (increase of 4 percentage points).

Figure 2 – Expectation of more EU action than at present: percentage point difference between 2016 and 2018



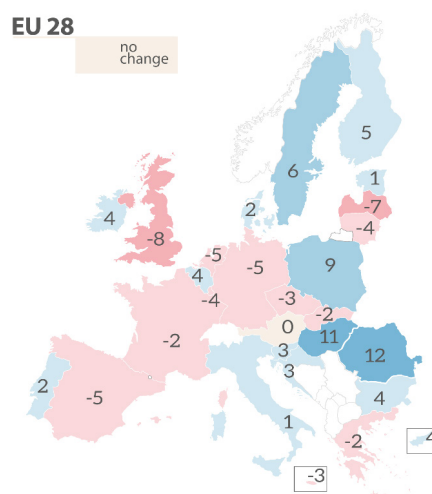
Data source: Eurobarometer [85.1 - 2016](#); [89.2 -](#)

Back in 2016, energy supply and security was one of only two policy areas (together with equal treatment of men and women) in which more citizens rated current EU action as adequate (45 %) than as insufficient (37 %). There has been no change in the share of Europeans evaluating the current EU involvement as adequate or as insufficient.

Despite this lack of change at European level, there have been some significant changes in certain Member States. The most prominent is the decrease in the share of citizens evaluating EU involvement in energy supply and security as adequate in the UK (a drop of 8 percentage points) and Latvia (a drop of 7 percentage points). The increase in the evaluation of EU action as adequate is most significant in Romania (a 12 percentage point increase) and Hungary (an 11 percentage point increase).

Compared with other policy areas included in this survey, the gap between citizens' expectations of EU involvement and their evaluation of current EU action on energy supply and security at EU level was rather small in 2016. The increased pressure of citizens' expectations for intensified EU involvement with energy policy means that the gap has grown significantly.

Figure 3 – Perception of EU action as adequate at present: percentage point difference between 2016 and 2018



Data source: Eurobarometer [85.1 - 2016](#); [89.2 - 2018](#).

EU framework

Legal basis

To a certain extent, a common energy policy has existed from the beginning of the European integration process (European Coal and Steel Community, 1952, and European Atomic Energy Community, 1958). Concrete developments towards a single EU energy market, however, began in the 1990s. Energy policy only gained an explicit legal basis – Article 194 of the Treaty on the Functioning of the European Union (TFEU) – when the **Lisbon Treaty** entered into force on 1 December 2009. Previously, EU energy policy was adopted using other legal bases, including the internal market (Articles 26-27 TFEU), environment and climate change (Articles 191-193 TFEU), and trans-European networks (Articles 170-172 TFEU). The prime objectives of EU energy policy are a functioning energy market, interconnected energy networks, security of energy supply, promotion of energy efficiency and savings, and the development of new and renewable forms of energy. EU energy policy is directly linked to EU environmental policy, and contributes towards the common objective of combating climate change.

Energy policy is a **shared competence** between the EU and Member States. At EU level, the European Parliament and Council generally have an equal legislative role under the ordinary legislative procedure. However, Member States retain the 'right' to determine their choice of energy sources (the 'national energy mix'), the structure of energy supply in their country, and the conditions for extraction and production of energy sources (Article 194(2) TFEU). Moreover, if the EU seeks to legislate in a way that significantly affects these Member State rights, then a special legislative procedure must be followed that requires an initial decision to be made by unanimity in Council after consultation of the Parliament (Article 192(2) TFEU). The same applies to any EU energy policies that are 'primarily of a fiscal nature' (Article 194(3) TFEU), i.e. energy taxation.

Policy framework

The [internal energy market](#) in the EU was established by three market liberalisation packages (adopted in the 1990s, 2003 and 2009), which provide for the 'unbundling' of energy production and supply from energy-transmission networks, as well as third-party access to gas storage facilities, reinforced consumer protection, and strengthened regulatory surveillance. The European Commission is currently monitoring and enforcing the application of the 'third energy package' across the Member States, which should have transposed all its provisions into national law by 2011.

The [EU climate and energy framework for 2020](#) has contributed towards both security of supply and climate change goals, by increasing the production of energy from (mostly indigenous) renewable sources, reducing energy use through energy efficiency measures, and reducing greenhouse gas (GHG) emissions. Even though Europe aims to reduce its dependency on energy imports, ensuring a reliable supply of fossil fuels remains an important priority in the light of declining domestic production. The [European energy security strategy](#) (May 2014) outlined some short-term goals and long-term measures to mitigate some of these risks, with energy security placed at the heart of the EU's internal and external energy policies.

In October 2014, the European Council endorsed the [EU climate and energy framework for 2030](#), which set out targets on GHG emission reductions, increased use of renewable energy, and improved energy efficiency by 2030. Its implementation is now part of the EU contribution to the [Paris Agreement](#) on climate change, which aims at a transition towards a low-carbon energy system.

The EU policy focus on energy was renewed under the Juncker Commission, with the adoption of the [energy union strategy](#) (2015). The energy union aimed at improving the functioning of the single energy market, strengthening security of supply in electricity and natural gas, and delivering legislation to help attain the goals of the 2030 EU climate and energy framework. The energy union strategy had five inter-related dimensions: energy security, solidarity and trust; a fully integrated European energy market; energy efficiency contributing to moderation of demand; decarbonisation of the economy; research, innovation and competitiveness. It was accompanied by a [roadmap](#) listing the actions to be undertaken by the Commission during its term of office.

Funded actions

Several ongoing EU programmes under the 2014-2020 multiannual financial framework (MFF) include energy among their funding priorities.

Funding for energy-related projects that comply with key EU objectives (e.g. improving energy efficiency or promoting renewables) was available to Member States via the [European structural and investment funds](#). For instance, around €2 billion from the [European Regional Development Fund](#) (ERDF) has been allocated to large-scale electricity and gas infrastructure, 'the low carbon economy' being one of four ERDF priority areas of the 2014-2020 MFF. [Cohesion funding](#) is available to the 15 Member States with GNIs below 90 % of the EU average, and can be used to finance energy projects that benefit the environment. Over €350 billion of regional and cohesion funding is allocated in the 2014-2020 MFF, with a significant proportion spent on energy and related projects.

The EU encourages research in the energy field, particularly projects that aim to develop new technologies for energy supply and increased energy security. The [International Thermonuclear Experimental Reactor](#) (ITER) is the single biggest project, with a budget of almost €3 billion under the 2014-2020 MFF. Meanwhile, the [Euratom nuclear research programme](#) received funding of over €1.6 billion over the 2014-2018 period, with a similar level of annual funding agreed for 2019 and 2020. [Horizon 2020](#) is the main EU research and innovation programme under the 2014-2020 MFF. Horizon 2020 lists 'secure, clean and efficient energy' as one of the main societal challenges to be prioritised for funding. Indeed, the 'Secure, clean and efficient energy' heading was given its own [work programme](#) for the 2018-2020 period, with a total of over €2.3 billion of EU funding available.

The [Connecting Europe Facility](#) (CEF) was created under the 2014-2020 MFF to part-finance key cross-border transport and energy and telecommunications infrastructure. EU projects of common interest (PCIs) are identified biennially by the Commission as priorities for CEF funding if they improve interconnection, build a stronger internal energy market, or enhance security of supply. The CEF includes around €5.4 billion of funds for energy infrastructure, aiming to leverage much greater public or private investment. In a similar vein, energy is among the priorities of the [European Fund for Strategic Investment](#) (EFSI), a joint initiative of the European Commission and the European Investment Bank (EIB) to invest in sectors of key importance for the EU economy, including strategic energy infrastructure and renewable energy and resource efficiency. The aim of EFSI is to identify and finance viable projects that can leverage much greater investment from other sources. The EIB also invests its own resources in financing energy projects in renewable generation, infrastructure, and new technologies, by providing companies with loans and other financial instruments. In 2017 the EIB financed €16.7 billion in climate action loans (28 % of total funding), including €4.4 billion on renewable energy and €4.8 billion on energy efficiency.

The [European Development Fund](#), which operates outside the EU budget and supports developing countries, includes a heading on energy, one of its key target areas for EU aid.

Deliveries of the 2014-2019 parliamentary term

Energy supply and security was a prominent issue during the 2014-2019 parliamentary term. EU energy policies are adopted under the ordinary legislative procedure, and security of supply is an explicit EU competence in the energy field (Article 194 TFEU), so Parliament has played a crucial role in determining the content of EU energy policies. Own-initiative resolutions by Parliament early in the legislature, including a broad-ranging resolution on [energy union](#) (December 2015), helped MEPs to develop common positions on issues that would later emerge in legislative proposals from the Commission. Intensive efforts in trilogue negotiations led to interinstitutional agreements on several legislative proposals directly affecting energy supply and security.

Natural gas is a priority area for EU action on security of supply. About one quarter of all energy used in the EU is natural gas. Many EU countries import nearly all their supplies and some are heavily reliant on a single source or transport route. Disruptions along this route, whether caused by infrastructure failure or political disputes, can therefore endanger supplies. In 2009, a gas dispute between Russia and Ukraine resulted in gas supplies to some EU businesses and households being physically cut off in the middle of winter. The interdependent nature of gas supply in Europe means that uncoordinated policies taken by one Member State to protect its businesses, social services or citizens, could have a damaging supply impact on neighbouring countries. This requires solidarity and better EU-wide coordination. In February 2016, the Commission proposed three related measures on security of gas supply:

- i) a legislative proposal to revise the 2010 **security of supply regulation**, in order to introduce a solidarity principle for gas sharing in an emergency situation, enhance regional cooperation on security of supply, and allow more effective EU monitoring and coordination. Trilogue negotiations resulted in a [new regulation](#) (2017/1938 of 25 October 2017) that met these objectives.
- ii) a legislative proposal to revise the 2012 Council Decision on **intergovernmental agreements in the energy sector**. Trilogue negotiations resulted in a [revised EU decision](#) (2017/684 of 5 April 2017), giving greater powers of preventive scrutiny to the Commission, ensuring that intergovernmental agreements with third countries do not pose internal market or supply risks.
- iii) a communication on an [EU strategy](#) for **liquefied natural gas** (LNG) and gas storage. LNG has significant [potential](#) for supply diversification, because it can reduce Member States' dependence on a single pipeline supplier and encourage stronger market competition, potentially lowering prices and ensuring import needs are met at all times. Yet to benefit from LNG as a source of supply diversification, it is necessary for Member States to have import terminals with significant capacity.

Parliament offered its support for this strategy, together with its own views and priorities, through an own-initiative [resolution](#) on the LNG and gas storage strategy (October 2016).

Many [projects of common interest](#) (PCIs) in energy infrastructure were supported by the EU during the 2014-2019 term. PCIs in the gas sector focused on improving the **interconnection** between Member States, access to storage facilities, and the construction or expansion of LNG terminals. PCIs in the electricity sector focused on numerous ways to improve the interconnection between national electricity markets in the EU. This was necessary to comply with the EU goal (set by the European Council in October 2014) of [achieving a 10 % electricity interconnection capacity](#) in all Member States by 2020. Parliament offered support for this policy, as well as its own views and priorities, through own-initiative resolutions on the [10 % electricity interconnection target](#) (December 2015) and a [new energy market design](#) (September 2016).

Security of supply is also a concern in the **electricity sector**. Growing use of renewable energy sources such as solar and wind, whose supply is variable and cannot be fully predicted, makes closer cooperation between EU and national authorities and market actors indispensable. In November 2016 the Commission proposed a [new regulation on security of electricity supply](#) that would establish an EU-wide system to address a major electricity supply crisis. More generally, the new regulation seeks to improve regional cooperation and assistance between Member States. A series of trilogue negotiations concluded with a provisional agreement reached in December 2018. The agreed text was endorsed in plenary by Parliament on 26 March 2019 and by Council on 22 May 2019. It is therefore expected to enter into force as part of EU law later this year.

The EU also has a key role to perform in improving **energy efficiency and savings**, and promoting the use of **renewable energy sources** (Article 194 TFEU). This can also have a positive impact on security of supply since renewables are more likely to be domestically produced than fossil fuels, the latter being mostly imported from third countries such as Russia. Measures to curb energy consumption can further reduce energy imports and improve security of supply.

A key achievement of the 2014-2019 legislature was to set binding EU goals in [energy efficiency](#) and [promotion of renewables](#) over the 2021-2030 period. This involved revisions to the 2012 Energy Efficiency Directive and the 2009 Renewables Directive, on the basis of Commission proposals adopted in November 2016. Both files concluded with provisional agreements reached in June 2018, following a series of trilogue negotiations between Commission, Council and Parliament. These agreements set the twin goals of a 32 % EU share of final energy consumption from renewable sources and a 32.5 % improvement in EU energy efficiency by 2030, substantial increases on the 20 % targets by 2020 outlined in the existing directives. The agreed texts were later formally [adopted](#) by Parliament and Council, and entered into force at the end of 2018.

Finally, the EU institutions reached an agreement in February 2019 on a [targeted revision](#) of the 2009 Gas Directive, which would make its key provisions applicable to all **pipelines with third countries**. Whereas Parliament adopted its negotiating position in plenary in April 2018, the Council's general approach was delayed until February 2019. Nevertheless, the subsequent trilogue negotiations were swift and successful, allowing the agreed text to be adopted by Parliament and Council in April 2019. The revised gas directive entered into force on 22 May 2019.

Potential for the future

The energy union strategy has placed great emphasis on security of supply and linked this to the proper functioning of the single market, as well as the promotion of renewables and energy efficiency schemes that enhance energy security by reducing reliance on imported fossil fuels. Ensuring security of supply requires continuous effort by the EU and its Member States, involving careful vigilance over the reliability of third-country suppliers, assessing how new supply routes (or the closure of old ones) can affect energy security, ascertaining whether energy agreements with third countries are consistent with EU objectives, and ensuring that national energy choices do not negatively impact security of supply at a regional level. Security of supply in the EU has to be

maintained throughout the delicate **energy transition** away from fossil fuels and towards low-carbon and renewable energy sources. This is particularly vital if the EU is to meet the aspirational goal of the Paris Agreement to keep global temperature increases to below 1.5°C by 2050. Another significant uncertainty is the **impact of Brexit on EU energy markets** in the future. An [external study](#) produced for the ITRE committee in 2017 suggested that the energy-system-related impact of Brexit on EU citizens and companies would be limited, but argued that special attention was warranted regarding its impact on the Irish energy system.

In April 2019 the Commission delivered a [communication](#) that proposed expanding the use of qualified majority voting (QMV) and the ordinary legislative procedure to **energy taxation**. EU decisions in this field have been restricted by a special decision-making procedure that requires unanimity among Member States and limits the Parliament to a consultative role (Article 194(3) TFEU). The existing Energy Taxation Directive (ETD) was adopted in 2003 and is now at odds with EU energy and climate goals, because it does not tax energy sources according to their environmental damage but rather on the basis of their volume. Polluting fossil fuels (e.g. coal) are more lightly taxed than certain renewable energy sources (e.g. biofuels) under the ETD; as a result there is no EU-wide tax incentive for energy transition. The unanimity requirement has made it extremely difficult to change the ETD, as demonstrated by a failed attempt at reform during the 2011-2015 period. Yet developing a system of energy taxation that incentivises the use of clean renewable energies (usually locally generated) and discourages the use of more polluting fossil fuels (which are increasingly imported into the EU) could in the long-term contribute significantly towards improved security of energy supply.

In the light of the pressing challenges in the energy and climate field, energy-related projects should expect to receive **significant funding** under the 2021-2027 MFF, at least according to the Commission proposals issued in May 2018. Under these proposals, the [Connecting Europe Facility](#) would be expanded, with €7.675 billion allocated to energy infrastructure, an increase on the 2014-2020 MFF (of around €5.35 billion). The EU contribution to the ITER project would more than double, to over €6 billion, reflecting the high costs involved in the (much delayed) construction phase of the project. Energy would remain a priority for EU research and innovation, with a proposed budget of around €100 billion, most of which would be allocated to [Horizon Europe](#) (€94.1 billion), the new EU framework programme for research and innovation. One of the five clusters in its 'global challenges and industrial competitiveness' pillar (€52.7 billion) would be 'climate, energy and mobility'. EU funding for the Euratom Nuclear Research Programme would remain [broadly stable](#) compared to current levels of funding. EFSI would be transformed into the Invest EU project and continue to support cross-border energy infrastructure, while separate EIB funding would support commercially viable projects that promote renewables or energy efficiency.

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