



Brussels, 18.11.2015
SWD(2015) 404 final

State of the Energy Union 2015

COMMISSION STAFF WORKING DOCUMENT

on the European Energy Security Strategy

1. Introduction

Energy security underpins the European Union's security and future economic prosperity. It is a collective responsibility of the Union, its Member States, energy producers, consumers, transit countries and the international community, all of whom are involved in today's globalised energy markets.

On 28 May 2014, the Commission adopted the Communication on a "European Energy Security Strategy"¹ (EESS) and the related Staff Working Document which provided an in-depth study of the EU's energy security situation². The European Energy Security Strategy introduced a comprehensive and holistic approach to enhance EU energy security, on the basis of the following eight pillars:

1. Immediate actions aimed at increasing the EU's capacity to overcome a major disruption during the winter 2014/2015;
2. Strengthening emergency/solidarity mechanisms including coordination of risk assessments and contingency plans; and protecting strategic infrastructure;
3. Moderating energy demand;
4. Building a well-functioning and fully integrated internal market;
5. Increasing energy production in the European Union;
6. Further developing energy technologies;
7. Diversifying external supplies and related infrastructure;
8. Improving coordination of national energy policies and speaking with one voice in external energy policy.

For each pillar, a number of short-term and medium- to long-term actions at various levels were proposed. The Strategy received strong support at the European Council meetings of 26/27 June and 23/24 October 2014. At the latter meeting, it was agreed that "the European Council will revert to the issue of energy security in 2015 to assess progress"³.

The European Energy Security Strategy now forms part of the "Energy Union Framework Strategy"⁴, adopted on 25 February 2015, since energy security is one of the five mutually dependent and interlinked dimensions of the Energy Union. As made clear by the European Energy Security Strategy and reiterated by the Energy Union Strategic Framework, energy security is inseparable from a well-functioning and fully integrated internal market, moderation of energy demand, increasing energy production in the European Union, inter alia through renewable energy sources, as well as boosting research and innovation in the Energy Union. However, since these aspects are addressed in the state of the Energy Union and in

¹ COM (2014) 330 final

² SWD (2014) 330 final

³ European Council Conclusions, EUCO 169/14

⁴ COM (2015) 80 final

other accompanying documents, this report focuses on the remaining four pillars of the European Energy Security Strategy, i.e:

- Immediate actions aimed at increasing the EU's capacity to overcome a major disruption during the winter 2014/2015;
- Strengthening emergency/solidarity mechanisms including coordination of risk assessments and contingency plans; and protecting strategic infrastructure;
- Diversifying external supplies and related infrastructure;
- Improving coordination of national energy policies and speaking with one voice in external energy policy.

2. Implementation of the European Energy Security Strategy (EESS)

2.1 Immediate actions aimed at increasing the EU's capacity to overcome a major disruption during the winter 2014/2015

The "Stress Test" exercise⁵ was the first concrete action related to short term gas security, following the adoption of the European Energy Security Strategy. It gauged the resilience of the European gas sector against different scenarios assuming differing levels of disruption of Russian gas supplies during the 2014/2015 winter. In addition to EU Member States, Energy Community Contracting Parties and candidates, Switzerland, Norway, Turkey, G7 countries, the IEA and EU network operators either fully participated or were involved in the exercise. This process led to increased transparency on security of supply matters and greater cooperation between neighbouring countries.

The Commission's stress test report was issued on 16 October 2014 and was presented to the European Council of 23/24 October 2014. The stress test showed significant differences in the levels of exposure of countries, with the Baltic countries and Finland, South-East European Member States and Energy Community Contracting Parties being the most affected. A comprehensive set of recommendations at European, regional and national level were also put forward, stressing in particular the need to follow a market-based approach and to increase cross-border coordination and cooperation. As a follow-up, regional cooperation between Member States in the least interconnected European regions was stepped up during 2015. Most importantly, the Commission established High-Level Groups for gas and electricity interconnectivity of the Iberian Peninsula and for Central East South Europe Gas Connectivity (CESEC). Also, the High-Level Group for the Baltic Sea region (BEMIP) was reformed. The Groups are expected to propose concrete solutions to infrastructure problems and obstacles in order to ensure the timely implementation of the relevant projects.

In parallel to this exercise, the Commission worked to avert any possible gas supply disruption from the east, notably by conducting bilateral and trilateral negotiations with Ukraine and Russia. After seven months of negotiations, the so-called "winter package" for gas supplies from Russia to Ukraine for the winter 2014/2015 was signed on 30 October 2014

⁵ COM (2014) 654 final

by the European Commission, the Russian Federation and Ukraine. Following the successful implementation of the winter package, the Commission sought agreement with the two parties for a follow-up agreement, also in view of facilitating the adequate injections of gas into Ukraine's gas storage facilities during the summer period. On 25 September 2015 the three parties agreed on the terms of Russian gas deliveries to Ukraine for the upcoming winter period, until the end of March 2016. The protocol is already being implemented by all the parties. European suppliers were instrumental in maintaining sufficient gas deliveries to Ukraine: between July 2014 and June 2015, Ukraine imported 10.6 billion cubic meters (bcm) of gas from the EU which accounted for more than 70% of total Ukrainian gas imports during that period. This is due in particular to the establishment in September 2014 of reverse flows on the Slovakia-Ukraine gas interconnector following mediation by the European Commission, and its progressive increase in capacity.

Furthermore, within the context of the Gas Coordination Group, there has been constant cooperation between the Commission and Member States on gas flows and storage in 2014 (4 meetings) and 2015 (3 meetings). Work has also been ongoing with regard to the update of national Preventive Action Plans and Emergency Plans, to be prepared by Member States in accordance with Regulation 994/2010. By October 2015, the Commission had received Plans from 24 Member States (including joint Plans between UK and Ireland) and adopted 18 opinions, while 6 additional opinions are under preparation.

2.2 Strengthening emergency/solidarity mechanisms including coordination of risk assessments and contingency plans; and protecting strategic infrastructure

Following the adoption of the European Energy Security Strategy, the Commission launched a comprehensive review of the existing measures to safeguard security of supply.

With regard to **natural gas**, the level of preparedness for gas supply disruptions and resilience of the gas system has significantly improved since 2010 thanks to Regulation 994/2010 on Security of Gas Supply. A report on the implementation of the Regulation⁶, assessing its impacts and suggesting improvements on its main elements, accompanied the Stress Test Communication of 16 October 2014. This Report highlighted several areas where improvement of the Regulation could lead to a more effective prevention and management of supply crises, in particular by strengthening regional cooperation and by increasing harmonisation in areas such as protected customers and supply standards. A public consultation took place between 15 January 2015 and 8 April 2015. As a result, the Commission is preparing a proposal to revise the Regulation, which is expected to be adopted by the Commission in early 2016. This should reinforce both the prevention and the mitigation dimensions.

An integrated **electricity** market requires a more integrated approach to security of supply, in particular as the EU's electricity system is being transformed by increasing cross border flows

⁶ SWD (2014) 325 final

and variable renewable energy sources. On 15 July 2015, the Commission adopted a consultative Communication on electricity market design, which sets out questions on how to ensure that market and regulatory arrangements can continue to deliver secure electricity supplies as well as meeting other policy goals. Alongside this, a public consultation specifically on electricity security of supply was published. In parallel, the Commission will conduct a fact-finding exercise to get a deeper understanding of the current national frameworks on security of supply and their functioning in practice.

The results of these consultation processes and fact-finding will feed into the preparations of legislative proposals in 2016⁷. These proposals should support security of supply by ensuring proper market based signals for needed investment in generation, including flexible and renewable energy sources as well as encouraging demand side participation in the market. The proposals should also improve risk preparedness in the area of security of electricity supply particularly in relation to new risks such as cyber-attacks.

With regard to **oil**, all Member States have transposed Directive 2009/119/EC, which requires Member States to hold emergency stocks of crude oil and/or petroleum products equivalent to 90 days of net imports or 61 days of consumption, whichever is higher, and to have emergency procedures and contingency plans to be implemented in case of a major supply disruption. Currently, all but four Member States meet or exceed the required levels of emergency stocks. At the aggregate EU level, current emergency stocks correspond to 107 days of net imports⁸.

In the context of the ongoing revisions of security of supply legislation, the Commission is also analysing whether to enhance the **protection of strategic energy assets**, building on existing legal instruments.

2.3 Diversifying external supplies and related infrastructure

For natural gas in particular, addressing the strong dependency of several Member States on one single supplier is the most pressing challenge for improving the EU's security of supply. In 2014, the Russian share of total EU natural gas imports⁹ reached 42%; diversification of external supplies is therefore of crucial importance.

With regard to the realisation of the **Southern Gas Corridor** linking Caspian gas resources to EU markets, significant progress has been achieved over the last year in the implementation of related infrastructure projects. In February 2015, the Southern Gas Corridor Advisory Council was set up in order to politically streamline the development of the corridor. In addition, the signature of the Declaration on energy cooperation between Turkmenistan, Turkey, Azerbaijan and the European Commission on 1 May 2015 and the subsequent

⁷ COM (2015) 340 final

⁸ Weighted average of the 24 Member States with an obligation based on net imports

⁹ Source: ENTSO-G transparency platform

establishment of the related Working Group has been an important step towards the extension of the Southern Gas Corridor to Central Asia.

The Commission has taken note of the shareholders agreement to build two further stretches of the Nord Stream pipeline. The Commission considers Nord Stream 2 a commercial project and it will be for commercial parties to decide which infrastructure is viable for them. However, as with any other pipeline in the EU, this pipeline will have to fully respect EU law, in particular the Third Energy Package, as well as environmental, competition and public procurement rules. The Commission will assess it rigorously and based on its own merits against the European regulatory framework. Currently only around 50% of the transport capacity from Russia is used and available capacity already well exceeds the EU's needs for likely future supplies. If constructed, Nord Stream 2 would – according to the Commission's estimates - increase excess transmission capacity from Russia even further.

EU gas cooperation with its **Southern and Eastern Mediterranean** Partners gained a new impetus with the establishment of the Union for the Mediterranean Gas Platform, aimed at reinforcing the security of gas supply and regional gas exchanges. The Platform, which was launched in June 2015 in Brussels, is now in the process of drafting work programmes and activities for the next two years. The significant gas resources discovered off the Egyptian coast this year, combined with the unexplored gas deposits of the East Mediterranean basin, increase the potential of the Mediterranean Sea as a future gas hub, to the benefit of Europe's energy security. Two other regional platforms, one on the regional electricity market and the other on renewables and energy efficiency, are also being set up (see next section). The Platform on Regional Electricity Markets (REM) was launched in Rabat on 12 October 2015 and focuses on how to ensure a secure energy supply, reliable, affordable and sustainable through the gradual integration of networks and electrical markets in the Euro-Mediterranean region. The platform on Renewables and Energy Efficiency will be launched in Cairo in early 2016.

Liquefied Natural Gas (LNG) can also play a crucial role in diversification of gas supply¹⁰. In this respect, the Commission is working on a comprehensive strategy that will explore the full potential of LNG and gas storage in the mid- to long-term and will identify how LNG and gas storage can enhance security and competitiveness of supply in the EU, in particular through diversification of sources, in normal and crisis situations alike. The Strategy will be published in early 2016; in parallel, the Commission will continue to stress the importance of energy in general and LNG in particular in the ongoing negotiations on a Transatlantic Trade and Investment Partnership (TTIP).

As regards **EU-Norway** cooperation on the development of energy infrastructures, the focus has been on further developing electricity interconnectors, with two projects that will link Norway with Germany and the UK by 2020.

¹⁰ In 2014, the share of LNG from total EU gas imports was only 10%

Nuclear energy represents around one third of the electricity and 14% of the energy consumed in the EU. It is an important component in the energy mix of many Member States. The EU has access to most products and services needed to fuel European nuclear power plants, although nearly all freshly mined uranium that enters the fuel cycle is sourced from outside the EU. Fuel fabrication for Russian-design reactors does remain a bottleneck in the supply chain.

According to the European Energy Security Strategy, the possibility of **nuclear fuel supply diversification** needs to be taken into account for any investment in new nuclear power plants in the EU. The Commission is therefore working on a proposal for a revision of the procedural and information requirements under Article 41 of the Euratom Treaty. The aim is to ensure that the issue of diversification of nuclear fuel supplies is adequately taken into account right from an early development stage of an investment project, and given due consideration by the Commission in its assessment under Article 43 of the Treaty. Moreover, a Recommendation will be adopted by the Commission on the application of Article 103 of the Euratom Treaty in the light of the European Energy Security Strategy. The aim of this initiative will be to ensure more coordinated action on the part of Member States in the conduct of their external relations, in order to avoid a situation where EU-level policy objectives, such as security of supply, are undermined through the unilateral action of Member States. These two initiatives, in combination with the application of the common supply policy by the Euratom Supply Agency, should help to avoid user overdependence on a single external supplier. The Euratom Research and Training Programme 2014-18, part of Horizon 2020, also contributes to the diversification of nuclear fuel supply. A specific action was launched in 2014 for safety research in support of licensing of Western nuclear fuel for the VVER type of reactors (Russian pressurized water reactors) operating in the EU.

On 8 July 2014, the 2009 **Nuclear Safety Directive** was amended to reinforce existing obligations and to introduce new ones, to be transposed by August 2017¹¹. The amended Directive requires EU countries to give highest priority to nuclear safety at all stages of the lifecycle of a nuclear power plant. This includes carrying out safety assessments before the construction of new nuclear power plants and ensuring significant safety enhancements for old reactors. A report on Member States implementation of the Nuclear Safety Directive is published alongside this report.

On 14 July 2015, the E3+3 (United Kingdom, France, Germany, USA, Russia, China), together with the European Union and the Islamic Republic of Iran, agreed on a Joint Comprehensive Plan of Action (“JCPOA”). The JCPOA, intended to build confidence in the exclusively peaceful nature of the Iranian nuclear programme, does not provide for the immediate lifting of sanctions. Nonetheless, it will pave the way for Iranian oil and gas to return to international markets and will open the door for co-operation on the development of Iran's energy sector.

¹¹ Council Directive 2014/87/EURATOM

2.4 Improving coordination of national energy policies and speaking with one voice in external energy policy

The Union's energy security does not stop at the EU borders. It is closely linked to its Neighbourhood's energy security. The development of common initiatives on security of supply, energy infrastructure and strengthening of the institutional framework are therefore among the main objectives of the ongoing reform process of the **Energy Community**. In particular, the Commission has proposed that the EU Regulation on guidelines for trans-European energy infrastructure¹² is implemented in the Energy Community. This Regulation is linking the process of establishing Projects of Common Interest with the Project of Energy Community Interest and thereby laying a cornerstone for a truly pan-European system of infrastructure development. The Commission has also advanced discussions on the common security of gas supply framework with the Energy Community Contracting Parties, and it has proposed the development of a general policy guideline entitled "Future Joint Act on Security of Gas Supply". The guideline will help to anticipate the Energy Community dimension in the process of revisions of the Gas Security of Supply Regulation in the EU, and in this way prepare for the adoption of the Joint Act. The Commission also proposed to implement the Energy Efficiency Directive 2012/27/EU in the Energy Community, setting an Energy Efficiency target for the Energy Community of 20% to be achieved in 2020. All these proposals, along with a number of other legislative acts and initiatives strengthening the Energy Community, have been adopted by the Ministerial Council in Tirana on 16 October 2015.

In addition, the signature in May 2015 of a Cooperation Arrangement with the Republic of Belarus on an Early Warning Mechanism in the energy sector aims at ensuring unhindered and uninterrupted energy supply, by helping to prevent and overcome potential emergencies.

Cooperation with the EU's **Southern Neighbourhood** has also gained a new impetus, building on the successful High-Level Euro Mediterranean Conferences in Malta (July 2014) and in Rome (November 2014), under the Italian Presidency of the EU. On top of the above-mentioned regional gas cooperation, ongoing and future activities will also encompass (i) regional electricity market and (ii) renewables / energy efficiency, supported by the establishment of two other Union for the Mediterranean Platforms.

More generally, as highlighted in the European Energy Security Strategy, speaking with one voice on energy security matters requires improved coordination between the EU and the Member States. Energy diplomacy is one aspect of this. The EEAS and Commission therefore developed an **Energy Diplomacy Action Plan** which was approved by the Foreign Affairs Council on 20 July 2015¹³. Given the unstable global geo-political developments (including in much of the EU's Eastern and Southern Neighbourhood), the Commission and the EEAS will make further efforts to strengthen bilateral energy dialogues, in line with the Energy Diplomacy Action Plan.

¹² Regulation 347/2013

¹³ Council Conclusions 10995/15

Moreover, the EU continued its engagement and participation in **multilateral fora** such as the G7 work on energy security (including the Hamburg G7 Initiative for Sustainable Energy Security of 12 May 2015), the G20 work on energy market transparency, renewable energy, energy efficiency and inefficient fossil fuel subsidies as well as in the International Energy Agency's Ministerial meeting in November 2015 and the 6th meeting of the Clean Energy Ministerial which took place in Mérida, Mexico in May 2015.

The Commission, in close cooperation with the European External Action Service, has also accelerated and strengthened efforts to ensure solid partnerships and close dialogues with key third countries, including Norway, Turkey, Algeria, the US and Canada. The co-operation with the US in the context of the EU-US Energy Council was increased and included engagement together with Canada in assisting Ukraine to develop an energy action plan for the 2015/2016 winter and a mid-term resilience plan for the energy sector. With Canada, the Commission re-launched the High Level Dialogue on energy in April 2015, looking to increase co-operation on oil and gas markets, research and innovation, renewables, co-operation in international fora and on assisting Ukraine in its energy sector reforms. An EU-Algeria political dialogue was also launched in Algiers in May 2015.

Finally, an important element in ensuring energy (and in particular gas) security is full compliance with EU law of Inter-Governmental Agreements related to energy supply from third countries. The European Council in its conclusions of 19 March 2015 called for "full compliance with EU law of all agreements related to the buying of gas from external suppliers, notably by reinforcing transparency of such agreements and compatibility with EU energy security provisions". To reach these objectives, preparatory work for a review of the Inter-Governmental Agreement (IGA) Decision¹⁴ started in 2015. A public consultation took place between 30 July 2015 and 22 October 2015, and the Commission is developing an impact assessment looking at different options. A legal proposal should be adopted by the Commission in early 2016.

The emerging governance of the Energy Union will also be crucial for enhancing the coordination of national energy policy decisions, both within the EU as well as for the EU's external energy policy with regard to energy security.

3. Conclusions

In May 2014, the European Energy Security Strategy concluded that "much progress has been done in the last few years to enhance Europe's energy security. Despite these achievements, Europe remains vulnerable to energy shocks". Progress in enhancing the Union's energy security has continued and accelerated since the adoption of the European Energy Security Strategy, but major challenges remain. Given the rapidly-changing landscape of the global energy sector, energy security is a continuous and dynamic endeavour that must be rigorously pursued in the overall context of implementing the Energy Union Strategy.

¹⁴ Decision 994/2012/EU

One of the main achievements of the European Energy Security Strategy is that the EU's energy security is not only considered in a time of supply crises. It has become an integral part of the EU's energy policy and is firmly enshrined in the Energy Union Framework Strategy. Energy security is therefore a permanent priority, to be developed, implemented and monitored in the overall framework of the Energy Union Strategy.