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Communication on strengthening Europe's energy networks

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

Communication on strengthening Europe's energy networks

1. Introduction

The European Commission's "Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy" has created a new momentum to achieve energy security, sustainability and competitiveness.

On a global scale, Europe remains the frontrunner in terms of our ambitious contribution to the Paris agreement and when it comes to the implementation of the energy transition on the ground as described in the Third Report on the State of the Energy Union¹. **An interconnected European grid will help deliver the ultimate goals of the Energy Union to ensure affordable, secure and sustainable energy to all Europeans.**

An electricity system to which renewables will contribute around half of the generation in 2030 and that will be fully decarbonised by 2050 will be the cornerstone of this energy transition. This implies very significant challenges in terms of adapting our regulation, our infrastructure and triggering the necessary investment.

As highlighted in several European Councils and by Heads of States and Governments, most recently by President Macron during the COP23, **well interconnected and integrated trans-European grids are indispensable for making the energy transition a success.** The Commission has addressed this need in its Communication² on "Achieving the 10% electricity interconnection target".

The Clean Energy for All Europeans package, adopted at the end of last year, is the most advanced legal framework for clean energy transition and for enabling clean energy investments to create jobs and economic growth. **Europe's network infrastructure should develop in the same direction and with the same speed to fully support this energy transition.** This is all the more important since a rising share of renewable electricity will require more cross-border exchange to keep the grid stable. In this context, stronger regional cooperation between Member States can lead to a more optimised deployment of renewables and network infrastructure.

Interconnected electricity and gas grids are also vital for energy security of supply. Well integrated networks are not only the best guarantee to compensate for a possible failure of the largest infrastructure in any Member State, but they also bring more supply options and hence more competitive prices into the national markets. At the same time, **Europe has to put the consumer in the centre of the energy system** through i.a; reinforcing and smartening the distribution networks.

Moreover, EU networks must be modernised to enable the energy transformation and to support and benefit from the rapid digitalisation of the economy. Innovation and intelligence in the networks at all levels is essential in the take up of demand side management and other smart grid services. Such technologies empower consumers and help boost the competitiveness of EU industry.

¹ COM(2017) 688.

² COM(2015) 82.

It is estimated that **up to 2030 about 180 bn euro in investments are needed to upgrade and expand European energy networks**. These investments would lead to 40-70 bn euro³ annual savings in terms of avoided generation costs and more competitive gas wholesale prices, helping to keep the costs of the energy transition at check and thus strengthening the Union's competitiveness.

This Communication takes stock of the progress achieved in integrating and modernising the European energy networks at transmission level through our TEN-E policy and outlines the way forward in ensuring that infrastructure can play its full part in achieving our energy and climate policy objectives for 2030, and beyond. It also assesses progress towards achieving the 10% interconnection target and looks ahead towards the target for 2030 agreed by the European Council.

2. The trans-European energy networks (TEN-E) policy as a cornerstone of the Energy Union

The investment needs to reach a fully European energy grid where all Member States are interconnected and protected against sudden supply disruptions were, and still are, high⁴. To ensure the timely delivery of these investments and the construction of the necessary infrastructures, the European Union adopted the Regulation⁵ on guidelines for trans-European energy networks in 2013. This was accompanied by the Connecting Europe Facility⁶ (CEF) created to support financially the development of trans-European energy, transport and telecommunication networks.

2.1 A TEN-E policy focused on Europe's priorities and accelerating investment

The TEN-E policy framework has since 2013 allowed for a focussed approach to identify and to support the realisation of the projects that are essential for well-connected networks across Member States and the internal energy market. This is based on an objective and inclusive selection process prioritising the most needed infrastructure projects.

The success of this approach is becoming visible. Approximately 30 energy infrastructure projects of common interest (PCIs) have been completed or will be in operation by the end of 2018. Another 47 important projects are scheduled to be completed around 2020 out of a total of 173. However, many projects of common interest are still not on track: regarding both electricity and gas infrastructure, and around half of the projects are facing delays typically

³ Study on the benefits of an integrated European energy market, 2013, Booz & co, https://ec.europa.eu/energy/sites/ener/files/documents/20130902_energy_integration_benefits.pdf.

⁴ See footnote 3.

⁵ Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure (OJ L 115, 25.4.2013, p.39).

⁶ Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010 (OJ L 348, 20.12.2013, p.129).

during the permitting process or have been rescheduled⁷ often because of uncertainty related to commercial viability or future demand.

Table 1: Overview of PCIs by sector

PCI from the 1st and 2nd lists to be completed* between 2013-2018					
Electricity	Smart Grids	Gas	Oil	CCS	Total
22	0	8	0	N/A	30
PCIs included in the 3rd list					
Electricity	Smart Grids	Gas	Oil	CCS	Total
106	4	53	6	4	173
PCIs from the 3rd list expected to be completed* by 2020					
Electricity	Smart Grids	Gas	Oil	CCS	Total
31	0	14	2	0	47

**Projects to be completed include projects which are either about to obtain a permit or are already under construction and which can realistically be completed by the end of the indicated period.*

The Union's financial support under the CEF has been an important factor in implementing some critical electricity and gas PCIs that bring significant socio-economic benefits at regional level but the costs of which could not be borne by the market alone. The programme is an important enabler for the mobilisation of private investment. In total 93 actions corresponding to the implementation of 74 PCIs have been selected to receive grants for works and studies worth in total €1.6 billion (out of the total CEF energy budget of €5.35 billion).

The EU cohesion funds, in particular the European Regional Development Fund (ERDF) also provide support to smart energy storage and transmission systems. Currently six Member States⁸ have planned about EUR 2 billion for the 2014-2020 period, with one fourth directly for PCI projects.

The European Fund for Strategic Investments (EFSI), where the energy sector has currently the highest share, has mobilised additional investment to the energy infrastructure, renewable energy and energy efficiency projects, including PCIs co-financed by CEF. A total of EFSI financing of €420 million have been approved for the first three PCIs, mobilising overall investment of more than €2 billion. The case of the gas transmission corridor Bulgaria-Romania-Hungary-Austria (BRUA), which received CEF EUR 179 million grant support for works, and subsequently accessed EFSI financing of EUR 100 million, demonstrates the potential for CEF to leverage private investment for energy infrastructure. Additionally, 14 PCIs in energy have received EIB loans, showing that CEF grants can play the role of enabler and attract investors. Furthermore, CEF grants for studies remain an important catalyst to help projects overcome their initial, more risky phases.

⁷ Consolidated Report on progress of electricity and gas projects of Common Interest for the year 2016.

⁸ Bulgaria, Czech Republic, Greece, Lithuania, Poland and Romania.

Beyond financial support, the implementation of the PCIs has also been accelerated thanks to regulatory support and cutting red tape. As the evaluation⁹ shows, the TEN-E Regulation led to accelerated permit granting and approval of projects is now more streamlined and expedient. The regulatory measures have also started contributing to an accelerated implementation of important PCIs. So far, 18 gas and 6 electricity PCIs have benefited from cross-border cost allocation decisions (CBCAs) and three projects received investment decisions issued by the National Regulatory Authorities (NRAs). The potential of the TEN-E Regulation, however, has not been yet exploited to the maximum. **The application of the TEN-E rules at national level should be further reinforced to ensure the implementation of the PCIs in good time.**

The above toolkit deployed through the TEN-E Regulation has proven useful to overcome financial and regulatory barriers for a number of projects. Still, more attention needs to be devoted to some more complex infrastructural challenges. The Commission proposed in 2015¹⁰ a more structural form of regional cooperation, including on political level, to align all involved Member States' and stakeholders' focus on the implementation of key projects.

2.2 Deepening regional cooperation – the key role of the High Level Groups

The Commission therefore established four regional High Level Groups which in a short period of time have managed to accelerate infrastructure development in specific European regions, facing particular challenges. These High Level Groups have contributed in particular to the prioritisation of key projects of common interest in the region. The Commission's political and financial support has been a key enabler.

Building on the good results, the scope of certain High Level Groups was extended to cover wider aspects of energy policy, notably energy markets, renewables generation and energy efficiency. The High Level Groups could also play a role in regional cooperation in the framework of the preparation of the national energy and climate Plans (NECPs) foreseen in the proposal for a Regulation on the Governance of the Energy Union¹¹.

2.2.1 BEMIP – Baltic Energy Market Integration Plan

The long-standing regional cooperation under the Baltic Energy Market Interconnection Plan (BEMIP) has significantly contributed to the rapid completion of the key electricity links, including "Nordbalt" (Lithuania–Sweden; 700 MW) and "Litpol Link" (Lithuania–Poland; 500 MW). **These interconnections have effectively ended the energy isolation of the Baltic States and connected them with the rest of Europe.**

⁹ Annex to the Staff Working Document accompanying the Commission Delegated Regulation (C(2017) 7834).

¹⁰ COM(2015) 82 final, 25.2.2015; <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2015%3A82%3AFIN>.

¹¹ Proposal for a Regulation of the European Parliament and of the Council on the Governance of the Energy Union – COM (2016) 759 of 23.2.2017.

A key political priority remains the synchronisation of the three Baltic States' electricity grid with the continental European network. The European Commission remains committed to support the Baltic States to this effect. In this context, the study that is currently being carried out by the Transmission System Operators of Lithuania, Latvia, Estonia and Poland and with the involvement of the European Network of electricity Transmission System Operators (ENTSO-E) is an important milestone. In parallel, it is also a good moment for the region to tap into its off-shore energy potential.

The BEMIP High Level-Group has also given a new impetus to the development of gas interconnections necessary to end the gas isolation of the three Baltic States and Finland. Both the Poland–Lithuania interconnection (GIPL), and Estonia–Finland interconnection (Balticconnector) have received financial support through the Connecting Europe Facility, signed in the presence of the Heads of State and Government as well as the Commission President. **It is now of key importance to ensure that both projects be completed without delay.**

Overall, the EU has contributed some 740 million Euro from CEF and around 430 million from the ERDF to energy infrastructure in the BEMIP region.

Next steps and milestones

- Political agreement on synchronisation and the way forward in 2018;
- Completion of the key gas PCIs by 2021, notably the Poland-Lithuania interconnection (GIPL) and the Estonia-Finland interconnection (Balticconnector).

2.2.2 Implementation of the Madrid Declaration in South-Western Europe

Important progress has also been achieved in the High Level Group on Interconnections for South-West Europe in integrating the Iberian Peninsula with the European mainland internal energy market. With the support of the European Commission, in 2015 the "INELFE" project was commissioned, doubling the electricity interconnection capacity between Spain and France and which is functioning now at full capacity.

Still, more needs to be done to implement the Madrid Declaration and to fully integrate the Iberian Peninsula into the internal electricity market and allow harnessing its renewables potential.

The Biscay Bay line – a new electricity interconnection with a technologically challenging submarine section of around 280 km length and two converter stations – must receive the highest priority not only of the promoters but also of the regulatory and permit granting authorities to ensure its timely completion by 2025 at the latest. The project will again double the interconnection capacity between the two countries, increasing exchange capacity to up to 5000 MW. Attention shall be given to the progress on the two projects crossing the Pyreneans which would raise the capacity to 8000 MW and allow the Iberian Peninsula to fully benefit from the internal market. The finalisation of the ongoing PCI between Spain and Portugal should continue so that the projects can be commissioned by end 2018 as planned.

Some progress has also been made to implement the 2015 Madrid Declaration with regard to the development of an Eastern Gas Axis, from the Iberian Peninsula to France. In 2016 and 2017 preparatory work was carried out to prepare a decision on the phased development of the critical Midcat project¹², including its first phase known as the STEP project¹³.

Next steps and milestones

- High-level political summit in 2018 to follow-up on the Madrid Declaration;
- Final investment decision on Biscay Gulf project in early 2018 and start of works in 2019;
- Start of the permitting process for the two electricity interconnections crossing the Pyreneans in 2018;
- Decision on the next steps of STEP, as a first phase of MIDCAT in 2018;
- Completion of the Portugal-Spain interconnection in 2019.

2.2.3 CESEC – Central South Eastern energy connectivity

Work has progressed also in the Central and South Eastern Europe (CESEC) region which is historically vulnerable to supply disruptions and which still pays higher gas prices than Western Europe, despite its geographic proximity to its main gas supplier.

In 2016 and 2017, the High Level Group has made important progress on the CESEC priority gas projects, notably on the Bulgaria-Romania-Hungary-Austria interconnector (BRUA) and on the first phases of reinforcing the Bulgarian grid. The 2017 Memorandum of Understanding on reverse flows between Croatia and Hungary that will enable the free flow of gas in particular from the Krk LNG terminal is an example of constructive regional cooperation. However, for 2018 **it is of key importance to implement without further delay the remaining three priority projects which all benefit from European support** to ensure access to diversified sources of gas in the region. The priority for 2018 is therefore to ensure that the construction of the LNG terminal in Croatia (Krk LNG), the Greece-Bulgaria interconnector and the Bulgaria-Serbia interconnector starts as currently planned. This requires continued political support to prevent and remove any obstacle that could delay the timely completion of these projects.

Building on the successes in gas, in 2017 the Commission, the CESEC Members States and Energy Community Contracting Parties concluded the Memorandum of Understanding which extends CESEC to electricity market and infrastructure, energy efficiency and renewable development and provides for concrete actions to achieve an efficient, well interconnected electricity market in the region. Furthermore, the High Level Group also agreed to extend its geographical scope to cover the entire Western Balkans.

Next steps and milestones

- Agreement by early 2018 between the project promoters in Serbia and Bulgaria on the implementation steps for the Bulgaria-Serbia interconnector;

¹² Eastern gas axis between Spain and France.

¹³ South Transit East Pyrenees.

- Final Investment Decision on the Krk LNG terminal in spring 2018;
- Start of construction of the Romanian part of the Bulgaria-Romania-Hungary-Austria (BRUA) corridor in early 2018 and of the Interconnector Greece-Bulgaria in June 2018;
- Ministerial meeting in Sofia during the Bulgarian EU Presidency to give further impetus to the new CESEC areas.

2.2.4 North Seas energy cooperation

In 2016 the Northern Seas Memorandum of Understanding was signed promoting the integration of offshore wind and enhanced interconnection. In 2017 work has begun towards a regionally optimised offshore energy system at least cost, creating jobs and growth, and harnessing the EU's industrial leadership in this field.

In order to ensure concrete progress, it was agreed to focus on innovative projects that create synergies between different elements in the energy system, notably by combining renewable generation and transmission. Public and private stakeholders will work together to establish a legal and regulatory framework that is conducive to the development of such projects, and to facilitate cooperation and coordination between project developers. Four clusters have been identified, including Belgium-Netherlands-UK, German Bight, and Central North Sea. For each cluster a stakeholder group will be established to ensure the full involvement of all parties concerned.

Next steps and milestones

- Adoption of a North Sea infrastructure/offshore grid Action Plan in 2018;
- Ministerial meeting in May/June 2018 to reinforce political commitment in a context of rapidly decreasing cost of offshore wind.

2.3 Re-orienting our infrastructure policy for the longer term

The TEN-E toolkit and deeper regional cooperation have been successful in enhancing the security of gas supply and diversification in Europe's more vulnerable regions. Today, Europe is in a better position thanks to completed gas PCIs, such as the Klaipeda-Kiemenai pipeline necessary for the correct operation of the Klaipeda LNG terminal (Lithuania).

The gas grid has become more resilient and nearly all Member States¹⁴ comply with the N-1 criterion¹⁵ and already have access to two sources of gas. In this context, the situation of Bulgaria and Finland needs particular focus. If the PCIs are implemented on schedule, in principle all Member States, except Malta and Cyprus should by 2022 have access to three gas sources. **If the necessary commitment is ensured from Member States, promoters, regulators and stakeholders, the remaining bottlenecks can be largely addressed around**

¹⁴ Excluding the Member States, i.e. Cyprus, Luxemburg, Malta, Slovenia and Sweden that have an exemption.

¹⁵ The N-1 criterion means that the network must be able to withstand the (temporary) loss of the biggest asset on the network.

2020 or shortly after through the finalisation of the already on-going projects of common interest. Gas projects have constituted a significant part both in terms of numbers as well as awarded funding until now as the urgent priority has been to improve the energy security of more vulnerable Member States and regions. Therefore, by 2022/25, Europe should achieve a well interconnected and shock resilient gas grid. In the coming years, electricity projects will become increasingly important for the integration of renewable energy across borders, including the digitalisation and smartening of the grid.

Making Europe's electricity grid fit for the energy transition will require further continued action in parallel with the implementation of the revised rules for the electricity market, as proposed in the Clean Energy Package by the Commission. Thus, the work on the necessary interconnections needs to accelerate. Currently insufficient levels of interconnection of regions such as the Iberian Peninsula are representing an obstacle to the further penetration of renewable energy and further price convergence. The same is valid for the slow progress of internal grid reinforcement such as between the North and South of Germany. Political commitment to remove those bottlenecks must not waver. In general terms, a high renewables scenario will mean a more than doubling of investment needs in interconnectors.¹⁶

The role of electricity, where renewables will constitute half of the electricity generation by 2030, will increasingly be driving the decarbonisation of sectors so far dominated by fossil fuels, such as transport, industry and heating and cooling. Moreover, focus must be put on the reinforcement of the electricity transmission and distribution grids, digitalisation and smartening of the grids and deployment of new infrastructure solutions, particularly in the electricity storage area, and the impact of self-consumption.

These challenges must be fully reflected in the future orientation of the EU's infrastructure policy. More projects in these areas are expected to become mature towards 2019-2020 and the back-loaded CEF budget fully reflects this ambition. With the increasing maturity, more electricity projects are expected to receive financing also from the European Investment Bank, including under the European Fund for Strategic Investments (EFSI). The third PCI list, adopted together with this Communication, represents an important step in this reorientation.

Whilst the trans-European networks in transport, energy and telecommunications are strongly interdependent and synergies are naturally present among each of the sectors, these must be better harnessed. E.g. energy grids should take up more rapidly the challenge of digitalisation. Cyber security is an overarching priority across all TEN sectors (and beyond) and should form an inherent element in any investment carried out in the three sectors. Electromobility will require a dense network of charging points along motorways and in cities. Major ports could develop into hubs also to service off-shore renewable operations.

¹⁶ European Energy Industry Investments, Study for the ITRE Committee, 2017
[http://www.europarl.europa.eu/RegData/etudes/STUD/2017/595356/IPOL_STU\(2017\)595356_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2017/595356/IPOL_STU(2017)595356_EN.pdf).

3. The third PCI list better oriented towards EU longer term targets

The third Union list identifies 173 PCIs, including 106 electricity transmission and storage projects, 4 smart grids deployment projects, 53 gas projects, 6 oil projects, and – for the first time – 4 cross-border carbon dioxide network projects. This list is adopted based on the unanimous support of all Member States illustrating the common political will.

In line with the Union's decarbonisation agenda, the focus under the TEN-E policy is increasingly on electricity interconnections, electricity storages and smart grids projects.

3.1 Electricity and smart grids PCIs to interconnect and smarten the grid underpinning the energy transition

The selected PCIs will allow for the integration of renewable energy and its transportation over longer distances while maintaining a high level of security of supply. There are 15 electricity storage projects among the PCIs, mostly hydro pump storage, but also some using compressed air technology. Better interconnection, smarter grids and storage options will provide for more flexibility, grid stability and will allow to handle peak loads both locally and transregionally.

The electricity PCIs will also help the remaining Member States to meet or advance towards the 10% interconnection target by 2020, and will contribute to the attainment of the new 2030 interconnection target. Furthermore, the electricity PCIs will contribute to the objectives agreed by the High Level Groups, in particular:

- In the BEMIP region, the selected projects will allow for the synchronisation of the electricity grid with the EU electricity network.
- In Western Europe, the electricity PCIs will also allow for the better integration of the Iberian Peninsula with France and the rest of Europe and hence facilitate further renewable energy sources integration, and will provide for the first, direct interconnection of Ireland with Continental Europe (Celtic Link).
- In the CESEC region, the selected projects will reinforce the electricity grids to improve interconnections, allow for effective commercial transactions and allow the countries to tap in their important renewable potential.
- In the Northern Seas, the focus is put on enabling an off-shore grid to harness as much renewables potential as possible in a cost-effective way. The goal is to pool resources and finances by developing a common off-shore grid.

The new list contains 4 smart grids projects. The project between Croatia and Slovenia will result in better resilience of the networks, and will allow for the deployment of more renewable generation and demand response. The project between the Czech Republic and Slovakia will address the resilience of the networks from transmission to distribution level. The two remaining projects between Austria and Italy and France and Germany aim at addressing questions of network operation under scenarios of stronger sector coupling, covering e.g. electrification of transport as well as, in the case of the French-German project, interactions with the heating sector and stronger customer involvement.

3.2 More focused gas PCIs addressing the remaining security of supply needs

Europe needs to ensure the timely implementation of the key gas projects, to end the energy isolation of the Eastern Baltic Sea region, improve security of supply of the Central South-Eastern part of Europe, and integrate the Iberian Peninsula with the European energy market.

This should be accompanied by a more efficient use of existing infrastructure, optimised at regional level, and more effective enforcement of the legal and regulatory-based measures. Beyond the already identified priorities, a cautious approach to new investment is required to avoid over-investment and the risk of stranded assets that would put an additional burden on consumers. The third PCI list with a decreased number of gas projects from 77 to 53 reflects this approach.

3.3 First carbon transport PCIs identified

For the first time, the Union list of PCIs contains 4 projects in the area of carbon dioxide transport networks. The projects are located around the Northern Seas region and involve Belgium, Germany, the Netherlands, the United Kingdom, and Norway. They are especially important for energy intensive industry as a way to further reduce its carbon footprint.

4. Realising the electricity interconnection targets for 2020 and 2030

4.1 Interconnection target for 2020

The 10% electricity interconnection target has provided political momentum to advance key cross-border projects. Implementation of PCIs has led to increasing interconnection levels over the last years.

Table 2: Member States' interconnection levels in 2017 and 2020

Country	Interconnection levels in 2017	Expected interconnection levels in 2020 ¹⁷
AT	15%	32%
BE	19%	33%
BG	7%	18%
CY	0%	0%
CZ	19%	23%
DE	9%	13%
DK	51%	59%
EE	63%	76%
ES	6%	6%
FI	29%	19%
FR	9%	12%

¹⁷ As assessed by TYNDP 2016 and ENTSO-E Vision 2020.

UK	6%	8%
EL	11%	15%
HR	52%	102%
HU	58%	98%
IE ¹⁸	7%	18%
IT	8%	10%
LT	88%	79%
LU	109%	185%
LV	45%	75%
MT	24%	24%
NL	18%	28%
PL	4%	8%
PT	9%	21%
RO	7%	15%
SE	26%	28%
SI	84%	132%
SK	43%	59%

Today, 17 Member states have already reached the 10% target and enjoy the benefits of improving trade and lowering wholesale prices. Seven more Member States – Bulgaria, Germany, France, Ireland, Italy, Portugal and Romania – are on the path to reaching the 10% target by 2020 through the completion of PCIs currently under construction. However, **additional efforts are needed to integrate in particular the Iberian Peninsula (interconnectors Portugal-Spain and Spain-France) , South Eastern Europe as well as Poland and Ireland (the Celtic interconnection with France will be the first link between Ireland and the continent).**

4.2 Interconnection target for 2030

Recalling the conclusions of the 2014 March and June European Councils, which stressed the need to ensure the full participation of all Member States in the internal energy market, the European Council called upon the Commission in October 2014 to report "*regularly to the European Council with the objective of arriving at a 15% target by 2030, as proposed by the Commission*¹⁹. Both [2020 and 2030] targets will be attained via the implementation of PCIs".

¹⁸ With the United Kingdom leaving the European Union, Ireland will have 0% interconnection level until 2025 when the Celtic Interconnector between Ireland and France is expected to be completed.

¹⁹ See COM(2014) 330 where the Commission proposed to "extend the current 10% interconnection target to 15% by 2030 while taking into account the cost aspects and the potential of commercial exchanges in the relevant regions".

The Commission therefore established an Expert Group, composed of 15 leading experts from all over Europe, to advise on the achievement and operationalisation of the 15% interconnection target for 2030. The Expert Group concluded its report on this in September²⁰.

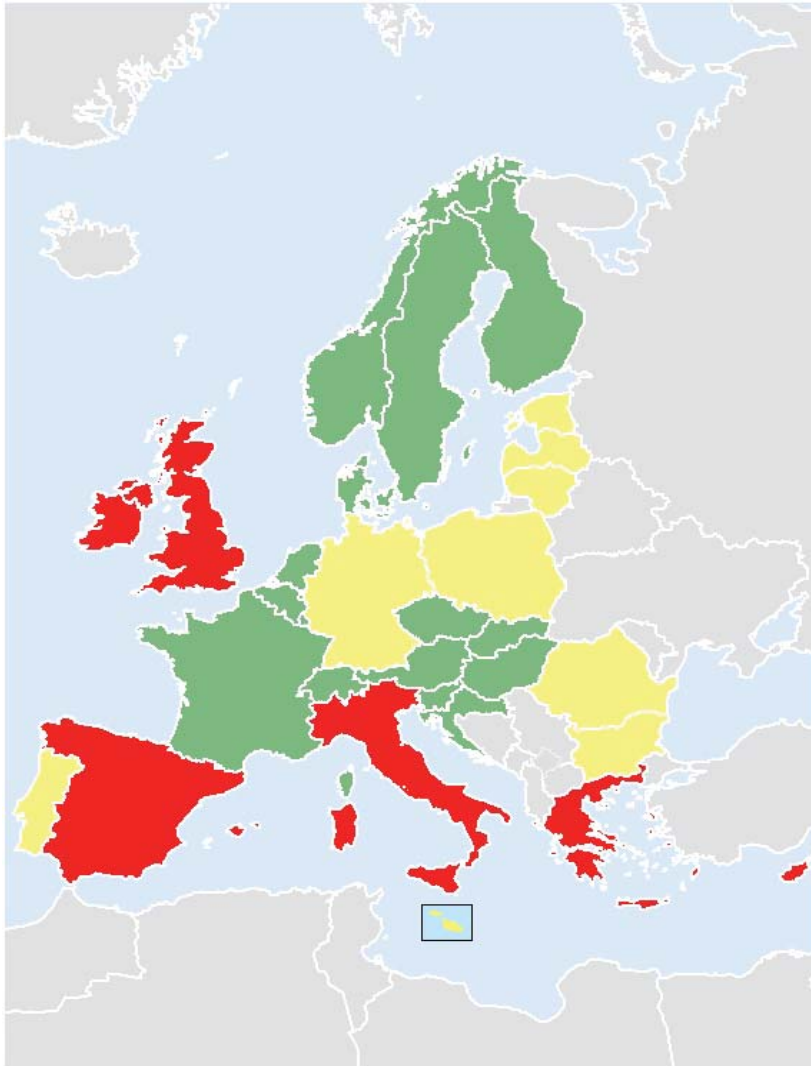
The report of the Expert Group acknowledges the challenges posed by a rapidly changing energy context. It recommends assessing the need for developing further interconnection capacity using different metrics and thresholds to reflect in a more nuanced way the different energy realities of the Member States and the different roles interconnectors play in supporting the completion of the internal energy market, enabling integration of renewables and ensuring security of supply.

In light of the Group's recommendations, the Commission proposes to operationalise the 15% interconnection target through a set of additional and more specific thresholds which serve as indicators of the urgency of the action needed and which reflect the three headline goals of European energy policy: increasing competitiveness through market integration, guaranteeing security of supply and achieving the climate targets through increased use of renewable sources. Action should be taken by Member States, TSOs/promoters, regulators and European institutions if any of the following three thresholds is triggered:

- A well-functioning internal market should lead to competitive electricity prices for all Europeans. Member States should therefore aim at **minimising differences in their wholesale market prices**. Additional interconnections should be prioritised if the price differential exceeds an **indicative threshold of 2€/MWh** between Member States, regions or bidding zones to ensure all consumers benefit from the internal market in a comparable manner. The higher the price differential, the greater the need for urgent action.
- Every Member State should ensure that peak demand can be met in all conditions through a combination of domestic capacity and imports. Therefore countries where the **nominal transmission capacity of interconnectors** is below **30% of their peak load** should urgently investigate options of further interconnectors.
- The further deployment of renewable energy should not be hampered by a lack of export capacity. Renewable production in any Member State should be optimally used across Europe. Therefore countries where **the nominal transmission capacity of interconnectors is below 30% of installed renewable generation capacity** should urgently investigate options of further interconnectors.

²⁰ The Expert Group's report is available on: <https://ec.europa.eu/energy/en/topics/projects-common-interest/electricity-interconnection-targets/expert-group-electricity-interconnection-targets>.

Map indicating how the Member States, Switzerland and Norway score on the three thresholds



Green: meet all three thresholds

Yellow: meet two of the thresholds

Red: meet one or none of the thresholds

Projects that are necessary for a Member State or a region to reach any of the three thresholds should be given appropriate priority, including under the procedures foreseen in the TEN-E Regulation. The realisation of these projects requires full commitment on both sides of the border and **the Commission therefore calls upon Member States to prioritise the development of interconnections with those neighbours that are below any of these thresholds in a spirit of solidarity and cooperation.**

These projects will be closely followed by the High Level Groups established in the framework of the TEN-E policy and will benefit from the resulting political backing. The Commission invites ENTSO-E to measure the electricity interconnection levels annually and to report to the Commission and ACER. This report which should take into account the new indicators explained above aiming to reach the 10% and 15% targets should be included in the

State of the Energy Union Report and discussed at the High Level Groups and the electricity coordination group as well as in the annual Copenhagen Energy Infrastructure Forum.

The Commission moreover recommends that Member States take into account the new approach and thresholds in view of reaching the 15% interconnection target when drafting their integrated national energy and climate plans under the proposed Regulation on the Governance of the Energy Union. This includes in particular describing the main existing and planned policies and measures to facilitate the achievement of urgent interconnections, but also consulting neighbouring Member States and other Member States expressing an interest on those elements in the context of regional cooperation. The new approach and thresholds will also be considered by the Commission when developing recommendations on the draft integrated national energy and climate plans.

Apart from the rapid finalisation of the missing infrastructure links, **the better use of existing interconnectors remains paramount.** In this context, the Commission recalls the importance for all Member States to fully implement the internal market rules. Moreover, in the market design proposals as part of the Clean Energy Package, the Commission has proposed more effective rules that would ensure that more capacity would be made available on existing interconnections, as well as increasing the incentive for network operators to reinvest congestion rents in new lines.

5. Conclusion

Together with a swift agreement on an enhanced regulatory framework as proposed in the Clean Energy for All European Package, rapid advances in building and modernising the necessary physical infrastructure remain key conditions for the energy transition to be successful as well as for energy security.

The European Union has a performant energy infrastructure policy in place that started delivering results. While progress is promising, the majority of the missing infrastructure links remain yet to be completed. Commitment at all levels, political, technical and financial, therefore needs to be kept up and accelerated.

The achievement of the 2020 and 2030 electricity interconnection targets of 10 and 15% as agreed by the European Council remains essential if Europe is to reap the full potential of its renewable energy sources while ensuring security of supply and competitiveness. The 2015 Communication addressed the indispensable need for well interconnected and integrated trans-European grids for making the energy transition a success. This Communication therefore proposes a new approach and a set of thresholds that would trigger action by Member States, regulators and project promoters to investigate and develop further interconnections to deepen market integration, strengthen security of supply and to ensure the necessary infrastructure will be in place to underpin the achievement of the renewable energy target for 2030.

This will also require a modernisation of our electricity grids embracing digitalisation and making them smarter, allowing for an intelligent coupling of sectors. It will be a key focus

area of the TEN-E program over the coming years and the third PCI list adopted today marks an important step in this direction.

With the Energy Union and the Clean Energy for All Europeans package, there is now a clear momentum for accelerating the building of key energy networks in view of reinforcing security of supply and facilitating the transition to clean energy.