1. The governance of the Energy Union: a new relationship between European citizens and decision makers

by Thomas Pellerin-Carlin and Jean-Arnold Vinois

Energy Union Governance: the comeback of energy as a driver of Europe's progress

Despite the 1951 Coal and Steel Treaty and the 1957 Euratom Treaty, it took half a century for Europe to agree on a comprehensive Energy Policy articulating all levels of governance to deliver sustainable, affordable and secure energy for all. The new momentum around the EU Energy Union concept proposed in 2015, one of the European Commission's top 10 priorities[4], allows academics and policy-makers[5] to think and reshape the governance of energy policies in Europe.

Our common long term objective of decarbonising our economies has been reaffirmed by the Paris Climate Agreement, in line with the energy-climate targets the EU and Member States set themselves for 2020, 2030 and 2050 (see table 1).

At the international level, all EU Member States have signed the Paris Agreement, which entered into force on 4 November 2016. Its article 4 sets the end-goal: global carbon neutrality in this century[6]. Few countries have already developed a national plan to make their country carbon-neutral, with the exception of Sweden[7] and Finland[8] which committed to become carbon-neutral as soon as 2045.

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4. European Commission, *Energy Union Package Communication*, 25 February 2015
5. See for instance, European Commission, *Second State of the Energy Union*, 1 February 2017
6. i.e. reaching a situation where human greenhouse gas emissions do not exceed human sinks of greenhouse gas emissions (e.g. by planting trees)
7. "Sweden takes major step towards setting 2045 carbon neutral goal", *Business Green*, 3 February 2017
8. "Environment Minister: Finland carbon neutral by 2045", Yle Uutiset, 21 February 2017

TABLE 1 ► **2020, 2030 and 2050 targets for the EU, France and Germany**

2020 TARGETS	EU	FRANCE	GERMANY
Greenhouse gas *	20%	20%	40%
Renewables *	20%	23%	18%
Energy efficiency *	20%	20%	20%

2030 TARGETS	EU	FRANCE	GERMANY
Greenhouse gas	40%	40%	55%
Renewables	27%	32%	30%
Energy efficiency	27%-30%	20%	/

2050 TARGETS	EU	FRANCE	GERMANY
Greenhouse gas	80%-95%**	75%	85%
Renewables	/	/	60%
Energy efficiency***	/	50%	50%

* 2020, 2030 and 2050 targets for "greenhouse gas emissions" aim at reducing greenhouse gas emissions by the given percentage, compared to 1990 emissions levels. 2020 and 2030 targets for "renewables" aim to increase the share of renewable energy sources in the final energy mix, up to the given percentage. 2020 and 2030 targets for "energy efficiency" aim at reducing (both primary and final) energy consumption by the given percentage, compared to a Business as Usual scenario
** This target has been endorsed by the European Commission, but not by the European Union as a whole.
*** Germany's target tackles primary energy consumption, while France's tackles final energy consumption.
Source: data from official EU, French, and German sources

Our common energy-climate objectives are not only promoted by political, technocratic and scientific elites, they are also overwhelmingly supported by citizens[9] (see figure 1). More than 90% of EU citizens consider climate change to be a serious problem. 80% believe that fighting climate change can boost the economy and jobs in Europe. There is moreover a consensus on the key ways to undertake the energy transition, with more than 90% of Europeans favouring public measures to boost energy efficiency and renewable energy production. 72% consider that there is a need for a common energy policy among EU Member States. 79% favour European energy solidarity, considering desirable for their country to assist another EU country facing significant energy supply problems[10].

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9. Eurobarometer, November 2015
10. Such solidarity does not exclude a financial compensation system as just agreed by the European legislator in the case of gas supply crisis. See "The Europeans and Energy", Parlemeter, January 2011

FIGURE 1 ➤ European citizens overwhelmingly support the means and objectives of the Energy Union

How important do you think it is that your government provides support for improving energy efficiency
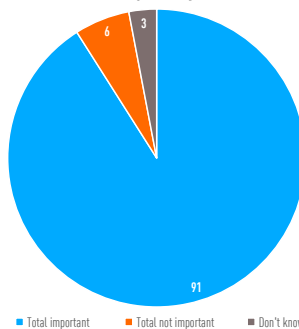(for example, by encouraging people to insulate their home or purchase low energy light bulbs) by 2030)**?**
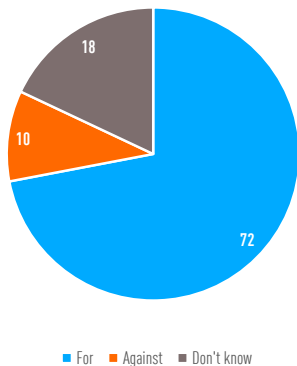**(% - EU28)**
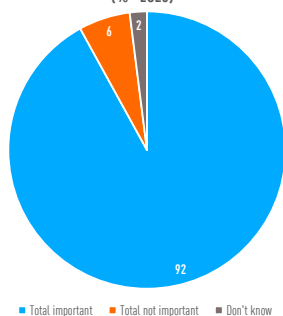
How important do you think it is that your government sets targets to increase the amount of renewable energy used such as wind or solar power, by 2030? (% - EU28)

What is your opinion on the following statement :
a common energy policy among EU member states (% - EU28)

Please tell me whether you totally agree, tend to agree, tend to disagree or totally disagree with the following statement:
It is desirable that your country provides assistance to another EU member state facing significant energy supply problems in the name of European solidarity between member states.
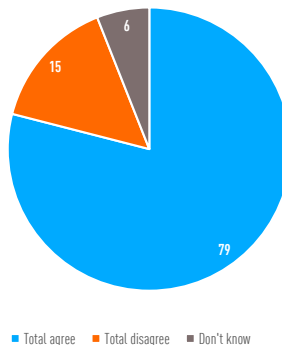
Source: Eurobarometer

There is a vast consensus among Europeans for a common energy policy, based on renewables, energy efficiency and solidarity, aimed at fighting climate change and able to stimulate the economy.

There is political will from the grassroots level to the top levels of the European structure. It should be used to drive the energy transition throughout all levels of decision making, be they European, national, regional or local, coordinated to deliver the concrete decisions and actions needed to achieve our common objectives.

BOX 1 ➤ All levels of government have a role to play in the energy transition: each level has different competences which have to work in a complementary way to be effective

The European level has now become critical with the EU objectives to reduce EU greenhouse gas emissions (by 20% by 2020, and by 40% by 2030), increase the share of energy coming from renewable sources (to 20% by 2020 and to 27% by 2030) and improve energy efficiency (by 20% by 2020, by 27% or 30% by 2030). Moreover, the EU has strong powers related to critical elements of the energy transition such as energy performance of buildings and appliances, emissions standards for vehicles, electricity market design.

A macro-regional level has emerged as an intermediate step between the national and the European levels to go further in terms of cooperation in various areas such as market coupling, security of supply, or infrastructure development[11].

The national level remains critical. Member States can freely decide on energy mix and exploitation of natural resources. Energy taxation decisions can only be approved by a unanimous vote. Member States moreover keep a great freedom to translate into practice the details of the EU policy objectives, transposing directives and implementing EU law. Over the past decade, **the implementation of EU energy policy by Member States, has been diverse and sometimes very disappointing, leading to incoherence** between various national policies and between national and EU energy policies.

The local level also rises in importance and can make energy policy more efficient and more democratic. Regions and cities in Europe often have power over critical energy areas, such as transport, energy efficiency of buildings or renewables development. They are closely linked with the European level through the Covenant of Mayors[12] signed by more than 7,300 entities, cities and regions of all sizes committing to implement the 2020 objectives in their jurisdictions.

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11. The need and the potential of regional cooperation between Member States have been examined namely by J. de Jong and Ch. Egenhofer in a CEPS report of April 2014 and in the report published by the Jacques Delors Institute, prefaced by Jacques Delors and written by S. Andoura and J.A. Vinois, January 2015, pages 109-112. See also Thomas Pellerin-Carlin, Jacques de Jong et Jean-Arnold Vinois, "Governing the differences in the European Energy Union", Policy Paper No. 144, Jacques Delors Institute, October 2015
12. See chapter 3., box 8. See also the website of the Covenant of Mayors: www.covenantofmayors.eu

While there is agreement on the objectives for the future, there is a huge diversity in national energy systems, as illustrated by figures 2 and 3, highlighting respectively the diversity of the energy efficiency of national economies and of national energy mixes.

FIGURE 2 ► **Energy intensity* of the economy of a selection of EU Member States**
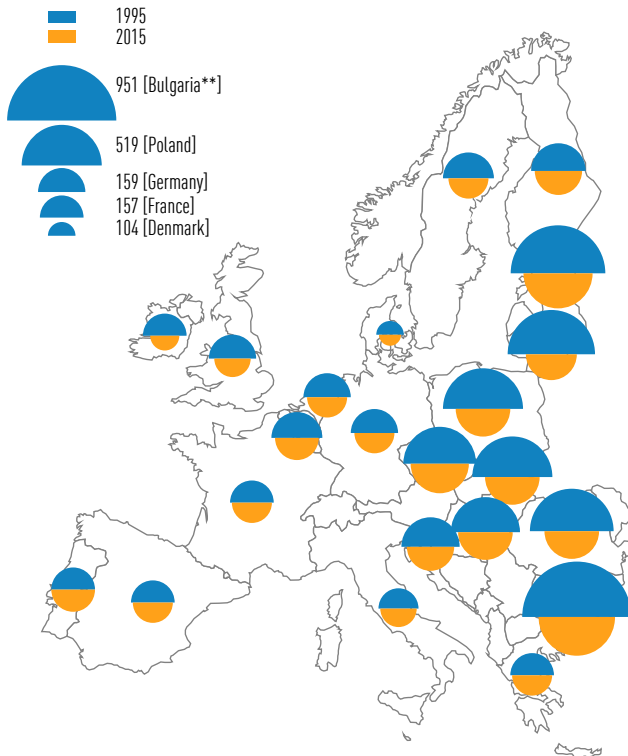
*Energy intensity is a ratio. It is obtained by dividing the gross comsuption of energy of a given country (measured in kilogram of oil equivalent) by this country's grossdomestic product (measured in thousands of euros). The smaller the figure, the more energy efficient the economy is (as it needs less energy to produce 1 euro of GDP). Central-Eastern countries are the most energyintense, as they inherited Soviet-shaped energy systems. They also are the ones that improved their energy intensity at the fastest pace between 1995 and 2015.
** 1995 data for Bulgaria were not available. 1996 were used instead.

Source: Eurostat

FIGURE 3 ➤ Energy mix of EU Member States (in % of energy source in national primary energy consumption), ranked by their level of dependence on fossil fuels
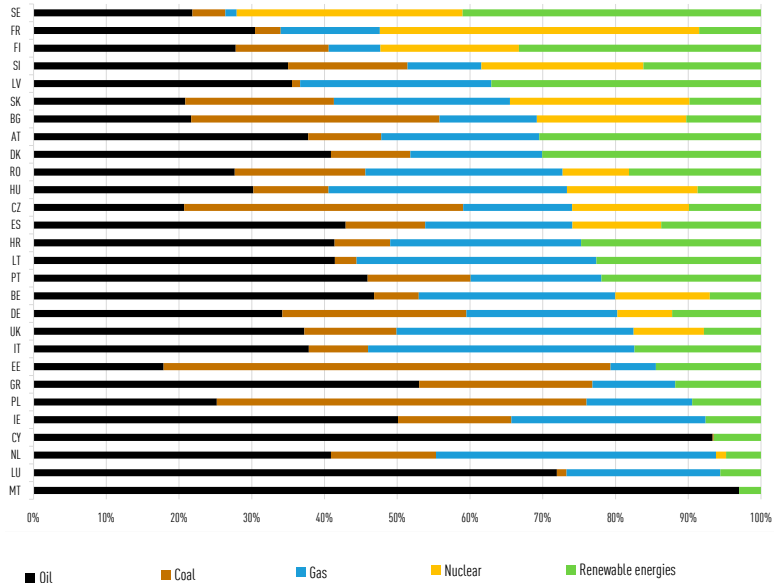
Source: Jacques Delors Institute from Eurostat data for the year 2015

National differences, such as the diversity of energy resources, can be both a threat and an opportunity for a coherent European energy policy. They are a real asset for Europe if their strengths can be combined in a coordinated and constructive manner. The example of the electricity market, where resources may be used to reinforce the level of security for all, is telling. However, they may be a liability if each country relies on itself or take measures which are undermining other countries policies, especially in our interconnected world[13].

Pre-2015 EU energy policy focused on mid-term targets for 2020 and 2030. In 2014, national governments, under the pressure of some lobbies including their

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13. One could give the example of the German nuclear phase out that was decided without coordinating with neighbours, or the national capacity remuneration mechanisms established by several countries.

own national champions (see box 3), decided that the 2030 renewable target should not be legally binding at the national level in contrast with the binding 2020 target. They also confirmed their refusal to make the energy efficiency target legally binding. Member States governments thus took the paradoxical risk of slowing down the energy transition when the global energy transition era was starting. Clear signals for investment in low carbon technologies were suddenly removed (see chapter 3., box 10).

Europe cannot afford to miss the opportunity of the energy transition. To maximise its benefits, it needs an ambitious industrial innovation policy to help European workers and businesses to lead the global clean energy race (see chapter 2.), a framework to boost coherent and cost-effective clean energy investments (see chapter 3.) and a social dimension to maximise its social gains by eradicating energy poverty, slashing air pollution and maximising quality job creation while also addressing its negative impacts for some (see chapter 4.). To deliver on all fronts, Europe needs a strong Energy Union governance. This is the subject of this chapter.

So far, the only significant proposal put forward by the European Commission has been the proposal for an "Energy Union Governance" regulation of 30 November 2016[14], inspired by the 26 November 2015 Council conclusions on the governance system of the Energy Union[15] and the European Council conclusions of October 2014[16]. Those are attempts to deal with national governments' refusal of legally binding national targets for renewables and energy efficiency, forcefully required by the European Parliament. The European Commission proposal is extremely disappointing[17] as it focuses on administrative monitoring, reporting and verification. It misses the point of governance: organising the best system to take tangible decisions based on the inputs of local, national and EU civil society[18].

This chapter analyses the state of energy governance in the EU and suggests changes to ensure that sound Energy Union Governance can be a tangible driver of a democratic, holistic and fair energy transition.

14. Proposal for a regulation of the European Parliament and of the Council on the Governance of the Energy Union, COM(2016) 759 final, 30 November 2016
15. Council conclusions on the governance system of the Energy Union, 26 November 2015
16. Conclusions of the European Council of the 23 and 24 October 2014
17. The European Commission itself recognises the shortcoming of its proposal as the explanatory memorandum attached to its regulation proposal states that it only "set[s] out the necessary legislative foundation for this process in view of delivering the Energy Union, which will have to be complemented by non-legislative measures and action for the Governance to succeed."
18. This definition draws from the European Commission Translation Office definition published in a note by Manuel de Oliveira Barata. See Olivier Paye, « La Gouvernance : d'une notion polysémique à un concept politologique », *Études internationales*, Québec, 2005. .

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MAKING THE ENERGY TRANSITION A EUROPEAN SUCCESS

1.1. Four guiding principles to articulate and cross-fertilise the several levels of energy governance

1.1.1. Democracy and sovereignty: the citizen at the centre of the energy transition

In recent years, millions of Europeans made clear that they wanted to (re)gain control over their individual and collective lives. When designing a genuine Energy Union governance, the notion of democracy must thus be at its core[19]. The Energy Union which is putting the citizen at the centre of its preoccupations needs to demonstrate that it is governed in the most democratic way.

The European Commission vision is indeed "most importantly [one] of an Energy Union with citizens at its core, where citizens take ownership of the energy transition"[20]. It tries to put citizens closer to the centre by proposing tools to empower people[21]. Yet, there is a need to go much further, to make citizens not only closer to the centre, but fully at the centre of the energy system and energy policy-making.

One of the EU's biggest democratic shortcoming comes from national governments blaming the EU for "imposing" something they themselves supported in Brussels[22]. With some exceptions like Denmark, most governments effectively ignore their parliaments and citizens when making decisions in Brussels[23], which creates a problem for democracy but also for the perception of sovereignty.

Sovereignty is the ability to adopt decisions that are enforced in a given territory[24]. But who does exercise sovereignty? Who does decide and how? National technocrats, governmental politicians, national MPs, and/or citizens? Currently, in EU

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19. Democracy is usually understood as a system where decisions are taken for the people, by the people. The first historical occurrence of this definition can be traced back to the funeral oration allegedly given by Périclès in 431BC. See Thucydides, *The Peloponnesian War*, Book II.
20. European Commission, *Energy Union Framework Strategy*, 25 February 2015, p.2
21. For instance with better information on their bills, the recognition of local energy communities, the right to directly contract with aggregators without their supplier's permission so consumers can economically benefit from their contribution to the stability of the electricity grid.
22. « Commerce "Les États de l'UE critiquent les négociations qu'ils ont eux-mêmes lancées" », interview of Cecilia Malmström, *Libération*, 3 January 2017
23. Andreas Follesdal et Simon Hix, "Why There is a Democratic Deficit in the EU: A Response to Majone and Moravcsik" JCMS 2006 Volume 44,. Number 3,. pp. 533–62
24. National sovereignty can thus be exercised at the national level with, for instance, a national parliament adopting rules that are enforced on the national soil. National sovereignty can thus also be exercised at the EU level, with national and EU actors adopting decisions that are enforced on national soil.

energy policy making, the argument of "preserving national sovereignty" is too often used to mean "preserving the capacity of a handful of unelected national technocrats to rule with no democratic oversight". We argue for a democratic understanding of sovereignty: genuine sovereignty as the capacity of citizens to individually and collectively impact the world they live in. This requires to ensure democratic control over decisions, whether taken at the local, regional, national or EU level. In other words, what matters is for citizens to drive the energy transition, be it at the local level, national level (where it is relevant) or at the EU level (when sovereignty truly lies at the EU level). The latter option may raise the question of subsidiarity: in a given policy area, is the national interest best preserved if it is exercised at national or at EU level? (see 1.1.2.)

1.1.2. Subsidiarity: deciding at the relevant level of governance

Subsidiarity entails that decisions should be taken at a level of decision as close as possible to citizens. More central levels of governance (regions, states, macro-regions, European Union) should act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by less central levels of governance. This is therefore a two-way street: the EU should not act where states, regions or cities can deliver, but the EU should step in where national actions are not sufficient and the EU could do better.

For instance, subsidiarity means that the EU should not impose a plan for child education to energy conservation behaviours when Member States, regions and/or cities deliver. It however also means to act where European action can best promote citizens' interests. For instance, European interest in world affairs is more likely to be effectively promoted by a united Europe conveying a single message than by the unarticulated aggregate of national external energy policies. In this area, the Paris Climate Agreement may be seen as an immense success for the EU, while we are still witnessing utter failures, such as the cacophony around Nordstream2 (see box 2).[25]

One obstacle to EU action is the impression of "Brussels overreach". This perception undermines the European energy transition, for instance by making

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25. For a broader—and humoristic—perspective on the need for a well-coordinated EU foreign policy see Sven Biscop, *Europe and the world – or Snow White and the Seven Fallacies*, Egmont Paper, 2013.

politically difficult for the European Commission to propose more ambitious energy efficiency regulations[26]. To overcome such situations, proposals should come from more grassroots organisations. In this respect, the Energy Union Governance could look at two ways forward:

- A European Citizen Initiative (ECI) could be launched by civil society organisations to impact EU policy making. Consumer associations could ask the EU to extend its energy-labelling standards to other products as to give consumers basic and user-friendly information about the operating costs of the appliances they buy (e.g. hair dryers, toasters, kettles etc.). Another example would be for healthcare/patient associations to mobilise against air pollution as it is a key factor of respiratory and heart diseases (see chapter 4., 4.2.1.1.). Their ECI could ask the European Commission to propose tougher air pollution standards for cars[27].

- Giving a "green card" to national parliaments. EU treaties give national parliaments the right to voice their concerns about the EU overreaching by giving a "yellow card" or an "orange card" to the European Commission. This procedure is useful to ensure that the EU acts only where necessary. It should be completed with a positive procedure, a "green card" where national parliaments would also be allowed to step up to ask the EU to act[28].

As the EU is undergoing a severe political and confidence crisis, the European Commission published on 1 March 2017, a White Paper on the future of Europe[29]. It identifies five scenarios for Europe, where the third scenario proposing "those who want more do more" may be of particular relevance to allow a group of forward-looking countries to cooperate in specific policy areas where national sovereignty is best served when it is exercised at a supra-national level. This would

26. The EU already sets energy efficiency standards and energy labelling for everyday appliances to level the playing field for appliance producers, and thus boosts economies of scale that benefit producers and consumers. The question there is the extent of the EU action, often being accused of over-regulating peoples' lives. A recent example is the 2016 discussion that gained the journalistic name "Toaster-gate", i.e. whether EU legislation on eco-labelling that already applies to many domestic appliances (such as white goods), should be extended to other smaller appliances such as toasters or coffee machines etc. In the end, the European Commission decided not to propose such extension, fearing of being accused of overreaching, even if this proposal would have helped reducing European energy consumption, people's electricity bills, while creating jobs and economic activity in Europe as European appliances tend to be more energy efficient than, say, Chinese designed appliances.
27. In 2016, the European Commission proposed new air pollution standards. In the end looser standards were adopted by national governments, with little democratic accountability as many national governments, most notably the French one, ended up voting in favour of an amendment that they officially –and vocally- opposed; as this was revealed by the European Parliament's investigation. See Quentin Ariès, "Brussels wants ministers to shoulder policy responsibility", *Politico*, 14 February 2017.
28. For instance, witnessing the impact of air pollution on their constituents and public health spending, national MPs may act together to ask the European Commission to propose tougher air pollution standards.
29. White Paper available at : https://ec.europa.eu/commission/sites/beta-political/files/white_paper_on_the_future_of_europe_en.pdf

be useful to ensure cooperation on energy-related domains where more common actions would yield better results, such as research. The latter is now a fully Europeanised area and it is now recognised that it makes sense to ensure that each euro invested in research goes to the best researcher in his/her field regardless of nationality or geographical location—provided that it remains on EU soil[30].

1.1.3. A more holistic approach to the energy transition

Past European energy policy choices tended to be taken in silos, leading to incoherent policy making (for an illustration, see box 2). Significant progress has been made[31] in recent years thanks to the new European Commission structure with the creation of the position of European Commission Vice-President for the Energy Union (see 1.2.4.2.). It rightly ensured the linking of all its energy proposals as to counter the usual silo mentality, thus opening the door to what Europe needs: a holistic Clean Energy Union Deal (see 1.2.3.).

BOX 2 ► A holistic approach to the Energy Union entails to re-shape the Nordstream 2 project[32]

NordStream 2 is the project to build two new pipelines to ship 55 billions cubic meters (bcm) of gas (i.e. more than 10% of the present EU consumption) from Russia to Germany via the Baltic Sea. While it has an economic interest for Russian gas supplier Gazprom to create such a physical link, it is incoherent from a holistic approach to EU interests.

First, the EU energy policy of decarbonising the economy and boosting energy efficiency reduces European energy consumption (including gas). This has been successful, with EU gas demand declining by 100 bcm since 2010. Nordstream2 can only be an economic success if the EU fails on its decarbonisation and energy efficiency agendas.

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30. This entails to change the legal status of research policy from a de facto parallel competence to a genuine EU exclusive competence. With the rise of the debate on adopting a budget for the Eurozone that could be used to finance strategic long-term investments, it may be sensible to kick-start an enhanced cooperation in the area of research –including energy-related research- to ensure that it is managed at a more adequate level of governance (e.g. at the Eurozone level for a start), with the aim of extending this cooperation to all other EU countries.

31. One illustration of the increased coherence of European Commission proposal can be found in its proposal for a new electricity market design. Several Member States have adopted capacity mechanisms that can be used to subsidise unprofitable power plants if they are necessary to ensure security of electricity supply. The European Commission agrees that such schemes can be necessary, and suggests measures to ensure coherence with EU and national climate policies, for instance by proposing to ban coal power plants from benefitting from such public support schemes. The detailed proposal is thus to ensure that such public support schemes will not benefit any power plant emitting more than 550gCO2/kWh, having regard to what is already common practice within the European Investment Bank.

32. This box builds on Jean-Arnold Vinois and Thomas Pellerin-Carlin, "Nord Stream-2 : A decisive test for EU energy diplomacy", Natural Gas Europe, 16 December 2015.

Second, Nordstream 2 would deprive the Ukrainian government of an important annual income (between 1 and 2 billions euros of gas transit fees) as Nordstream 2 is meant to replace the Ukranian transit pipelines to transport Russian gas to the EU. This would weaken Ukraine at a moment when the EU actively supports the reforms of this country and particularly in the field of energy. In the end, less revenues for Ukraine will likely increase the amounts of Ukrainian debt towards EU states—a debt that may never be fully repaid.

Third, the east-west divide between European States has been exacerbated over the past years, notably during the "refugee crisis". It is incoherent for a western member like Germany to ask an eastern member like Poland to show solidarity on the refugee crisis, while Germany is refusing to show solidarity on energy by supporting Nordstream 2—and vice-versa.

In the end, Nordstream 2 whose President is the former German Chancellor, Gerhard Schroeder, is currently going forward under the intense lobby exerted by Gazprom and its western partners on EU leaders, most notably the German Foreign Minister Sigmar Gabriel, but also on other countries such as Austria (through its champion OMV), Netherlands (Shell) and France (Engie) but also Italy (SAIPEM/ENI).[33] Nordstream 2 is therefore much more than a pure commercial project. [34]

A step in the right direction has recently been taken by the European Commission in March 2017 as it proposes that EU Member States give the European Commission a mandate to negotiate an EU-Russia agreement on Nordstream 2[35].

There is a need to overcome the silo mentality and adopt a longer-term perspective. It is a matter of efficiency to ensure both horizontal coherence (e.g. coherence between electricity, industry, trade, development, cohesion, social, transportation, taxation policies etc.) as well as vertical coherence (e.g. coherence between EU, national and local levels). One illustration of the holistic approach to the energy transition is to ensure that current decisions are climate-consistent by avoiding lock-ins (see chapter 3.), such as the German public bank support to a Greek coal power plant[36] meant to run from 2020 to around 2070—i.e. at a time where Europe's electricity mix is supposed to be fully decarbonised. Another illustration would be for Europe to debate and agree on a Social Pact for the Energy Transition, that could be based on the proposals detailed in chapter 4.

Adopting a holistic approach to the energy transition is moreover paramount to allow a more democratic decision making. A silo-system enhances the power of

33. For further information on Nordstream 2, including from an economic and legal perspective, see: "Energy Post debate: Nord Stream 2 and the future of the European gas market", video of the conference of 8 March 2017 organised by Energy Post.
34. As an illustration of how politically charged this issue can be, current Nordstream CEO Matthias Warnig was working for the Stasi at the time when Vladimir Putin was a KGB agent in East-Germany.
35. "EU offers to negotiate Nord Stream 2 on behalf of members", *Euractiv*, 30 March 2017
36. "Poland, Greece reject Eurelectric's no new coal plant after 2020 plan", *Platts*, 5 avril 2017

lobbies (see box 3) to block specific elements of legislation they dislike. A specific lobby tends to be effective in its own silo, but less so when policy issues are approached through a cross-cutting perspective.

BOX 3 ► European Energy Lobbies

Companies and civil society organisations try to influence policy makers in order to induce them to adopt decisions that fit their interests. This lobbying affects many policy areas, including energy. Energy lobbies have no problem defending their interests, even when such interests are narrow, selfish and clash with citizen interests or commonly agreed goals (e.g. fighting climate change, as agreed in the Paris Agreement).

A schematic classification could identify three kinds of energy lobbies: those of the old world, those transitioning from the old to the new world, and those of the new world.

Lobbies of the old word mostly gather public and private companies. This category includes oil and gas suppliers (IOGP, Eurogas), coal suppliers (Euracoal) as well as the power generating facilities usually called utilities (Eurelectric). It may include non-EU companies, such as the global number one oil and gas giant ExxonMobil (whose CEO became Donald Trump's Secretary of State), or Russian gas company Gazprom owned by the Russian State. Electricity suppliers, gathered in Eurelectric or in the more confidential Magritte Group and the nuclear lobby (Foratom) have been instrumental in watering down the 2030 objectives, for instance by ensuring that Europe's 2030 targets for energy efficiency and renewables would not be legally binding at the national level. In several instances, national governments (who also often are their shareholders)[37] act as megaphones of company interests, thus defining their "national interest" as the interest of national companies rather than national citizens. Most car manufacturing companies could also be included in this category as they consistently lobby against air pollution and emissions standards in order to delay their eventual shift towards electric vehicles. But the dieselgate and the digital companies seem to have changed the position of some major manufacturers like VW and Toyota.

Fortunately, several lobbies are transitioning from a dirty past towards a clean future. Among them, there are unbundled electricity networks operators, gathered as independent infrastructure managers within ENTSO-E, moving towards a more decentralised and demand-driven electricity market, accommodating more and more renewables sources of energy. Some utilities are now faced with the so called Kodak dilemma that is defending the past paradigm of electricity centrally produced, transported and distributed to a passive abonnee (like the argentic photo era) and the new world resulting from a more decentralised power generation with renewables and an active consumer managing cleverly its consumption (the digital camera). Another significant group is made of companies stuck between their clean commitments and their dirty assets, like EON/UNIPER, RWE/INNOGY, ENEL, ENGIE and others. Total is in a similar situation as it remains a leading oil and gas producer while having acquired solar and batteries assets. The

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37. For instance, the support the French and Austrian governments give Nordstream 2 is best understood by successful lobbying from Engie and OMV on their respective governments.

European chemical industry lobby CEFIC also has split interests: rising energy prices may endanger its cost-competitiveness but the energy transition creates new markets for its products. The electro-intensive industry (IFIEC) has not yet adopted a constructive approach towards the new future. In terms of lobbying, all those companies face a challenge of time consistency. For instance, when lobbying for the post-2020 electricity market design, some lobbyists may lobby in favour of their company's old business model, rather than focusing on what would be positive for the post-2020 business model. When speaking about the most effective way to reduce emissions through the ban of coal in power generation, most of these lobbies are in a schizophrenic position and are usually prevented to express a meaningful position.

Finally, there is a rising number of lobbies of the new world, still in their infancy and still much less powerful than their counterparts. These lobbies are representing energy regulators (CEER), consumers (BEUC), promoting renewable energy (WindEurope, Solar Power Europe), energy efficiency (EuroAce, European Coalition for Energy Savings), demand-side management (Smart Energy Demand Coalition), or they are pro-environment civil society organisations (European Climate Foundation, E3G, WWF).

1.1.4. From decision by a few to action by all

With the rise of nationalists like Wilders in the Netherlands, Petry in Germany or Le Pen in France, it is critical for the EU to demonstrate that the European Project, including its Energy Union, is not meant to be an elitist project where key decisions are taken by a few. It has to have a grassroots component, and ensure that the Energy Union is effectively made by and for the people. In other words, to move from a situation of "decision by a few" to a situation of "action by all".

This is critical to uphold the principle of democracy (see 1.1.1.). It is also a matter of efficiency as the more democratic and grassroots our energy decisions are made, the more people will not oppose them and become actors of the change.

Moving away from a situation where few people take decisions, to a situation of actions by all entails empowering people as citizens, consumers, savers and workers. Several of the European Commission proposals go in the right direction[38]. Yet, there is a need to go much further. Strong democratic consensus will create the certainty that favours more optimal investment choices, thus

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[38]. e.g. greater emphasis on the role of cities in the energy transition, smart meter roll-out, clearer electricity bill, capacity to sign a contract with an aggregator without needing supplier's consent etc.

economically benefitting investors, workers and taxpayers who may otherwise end up bearing the burden of unfortunate private or public investment choices.

Based on those four principles, the following sections further analyse the state of Energy Union Governance and suggest policy recommendations to transform those guiding principles into tangible actions impacting the Energy Union Governance regulatory framework (1.2.) and delivering concrete projects (1.3.) that can show right now that the EU is suiting its actions to its words, thus building the political consensus to drive the energy transition.

1.2. Building trust and consensus on a best way to achieve the energy transition

In November 2016, the European Commission published its regulation proposal for an Energy Union Governance[39]. Its core element is for Member States to send by 1 January 2018 a draft "integrated national energy and climate plan" that should reflect the national energy strategy for the decade 2020-2030. The European Commission would make country-specific recommendations on this draft, the Member States "shall take utmost account of any recommendations from the Commission when finalising their plan," to be submitted by January 1st 2019. A similar process is planned for national plans looking at a 2070 horizon.

This proposal has no chance to deliver tangible governance. It is a toothless administrative reporting, not the enabling political process required to deliver what 72% of EU citizens want: a common energy policy for all EU Member States. It moreover fails to capture the novelty of the Paris Agreement that sets for the first time a clear long-term end-goal: carbon neutrality[40].

This section thus seeks to analyse and recommend steps to ensure effective governance for (1) mid-term plans (horizon 2030), (2) long-term plans (horizon carbon-neutrality), in order to lead to (3) concrete political decision on a Clean Energy Union Deal that can be (4) effectively implemented as to impact real life.

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39. Proposal for a regulation of the European Parliament and of the Council on the Governance of the Energy Union, COM(2016) 759 final, 30 November 2016
40. Paris Agreement, Article 4

1.2.1. Planning for the medium term - horizon 2030

1.2.1.1. Ensuring that mid-term plans can be democratically adopted

The current European Commission proposal is hindering democratic account-ability of energy decisions. Symbolically, in its 89-pages proposal, the words "citi-zen" and "civil society" never appear while "democracy" appears only once and only to refer to the European Parliament's 15 December 2015 resolution. More substantially, three key critics are to be mentioned:

1. European and national parliaments have virtually no role in the envisaged governance framework. A behind closed door dialogue between the European Commission and national governments is unlikely to be democratic.

2. Unless it has already worked on a plan before like some Member States, the proposed timing *de facto* prevents any Member State to propose something more than a document drafted by a few national technocrats. Even if the European Commission were to achieve its unrealistic objective of reaching an agreement on this proposal by the end of 2017, this would leave a ludi-crous few days/weeks for Member States to submit their draft plans on 1 January 2018.

3. The European Commission proposal has no teeth to pressure a national government to adapt a flawed plan, and no teeth to ensure that plans are actually implemented. The European Commission may issue recommenda-tions but has little legal and political tools to ensure that those recommen-dations impact and alter national plans. Here it is useful to draw lessons from the European Semester[41] where similar recommendations are given on economic and social policies. Among the country-specific recommendations issued by the European Commission under the European Semester, only 2% are fully addressed by Member States[42].

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41. The European Semester is a sort of governance process for the Economic and Monetary Union, which notably aims at ensuring more coordination of Eurozone members' national budgetary policies.
42. Jacques Delors Institute – Berlin, EU Economy Brief n°12/2017, 24 March 2017

Against this background, the EU should provide a toolbox to those local and national decision makers who believe that energy policy is a too sensitive policy area to be left to governmental technocrats alone. It is thus suggested to (A) elaborate a list of best practices for national energy plans, (B) include a list of tools Member States are invited to use, and (C) build a review mechanism ensuring that national energy plans are soundly and democratically debated at EU level.

1.2.1.2. Identify all the best practices to elaborate national plans that are sound, trustworthy, and endorsed by a vast majority of local and national stakeholders

Ahead of its Energy Union Governance regulatory proposal, the European Commission created the valuable "Technical Working Group on National Energy and Climate Plans" which gathers European Commission and national governments officials. This allows the European Commission to proactively engage national governments ahead of the drafting of national energy-climate plans.

Research institutions such as Ecologic[43] and IDDRI[44] have already started to identify several best practices in national decision making processes to elaborate a national energy-climate policy. Further research need to be made and feed into the work of the "Technical Working Group on National Energy and Climate Plans". Member States should be encouraged to experiment new processes that, if useful, could be adopted by other Member States. Among already existing best practices, two could be mentioned:

1. As part of a "National debate" process, it is useful to form a group of independent experts working with stakeholders to identify and propose several long-term decarbonisation scenarios from which to choose the midterm objective. Such a group exists in the UK with the UK Climate Change Committee (CCC), or in France as part of the 2015 energy transition law. The UK CCC moreover provides annual progress report to the Parliament, enhancing the democratic accountability of the British energy transition.

43. Katharina Umpfenbach, Streamlining planning and reporting requirements in the EU Energy Union Framework, Ecologic Institute, September 2015
44. Oliver Sartor, Michel Colombier, Thomas Spencer, "Designing planning and reporting for good governance of the EU's post-2020 climate and energy goals", IDDRI, October 2015. Oliver Sartor et al., "Developing 2050 decarbonization strategies in the EU: insights on good practice from national experiences", IDDRI, January 2017.

2. Ensuring an open discussion that allows to overcome taboos (e.g. nuclear in France, coal phase-out in Germany). In Germany, this led to the creation of a Commission for industrial transition that will notably deal with transition options for the country's coal regions.

Best practices alone are no silver bullet. It is however useful to show that countries like the UK, France, Germany, the Netherlands, Sweden, Finland or Czech Republic have already found ways to efficiently tackle the issue of energy plans. This is likely to alleviate the fears some national governments may have.

1.2.1.3. Include in the regulation a list of tools that Member States are invited to use

Europeanisation does not always require legal constraints. Member States are not monoliths. Within Member States, many would welcome a more holistic and forward-looking decision making for national energy policy. To that end, the Energy Union Governance regulation should empower those national actors who can support the national decisions needed in the framework of the Energy Union.

In concrete terms, the regulation could include a list of suggestions. For instance, an article saying "Where relevant, Member States are invited to consult their national and regional consumer associations, cities, local governments, business and SMEs associations, relevant NGOs and other relevant civil society organisations", would signal national Civil Society Organisations (CSOs) that they can voice their opinion in their national arena when the government drafts the plan. Forward looking CSO officials may even decide to kick-off the drafting of national energy plans themselves by organising conferences and working groups where the national decisions makers of those plans would be invited and may therefore be influenced by some ideas presented by trade-unionists, clean energy business leaders and NGOs. A similar provision could be made to include the work already done by many European cities (e.g. through the Covenant of Mayors) and regions.

1.2.1.4. Build a review mechanism involving a large range of stakeholders

Contrary to what is currently proposed, governance should not be limited to bilateral reporting between the European Commission and each national government. This is by far not the optimal solution, not least because it limits the capacity to enable or pressure a Government to adopt changes in its energy plan.

To answer those concerns, at least four steps need to be taken:

1. 2017 sees European Commission Vice-President Šefčovič's making its second "Energy Union Tour" where he visits each EU country to discuss energy with key national decision makers and stakeholders. During this Tour, he presents the European Commission SWOT assessment[45] of the national energy situation. A version of it should be widely and timely published online in the national language in order to allow for assessment by all stakeholders and to enhance the robustness of the proposals to be made by the national decision makers to the Vice-President.

2. The regulation should ensure that national draft energy plans benefit from a peer review between Member States. Lessons could be learnt from other EU policy domains (e.g. the Economic and Monetary Union's "European Semester"[46]) and the country energy policy review process conducted by the International Energy Agency. This would help to create mutual trust and common understanding, as well as highlight best practices. To ensure a more democratic review, representatives of the European Parliament and of national parliaments could be invited to comment on draft national plans. Specific organisations, such as national Economic and Social Committees, academic organisations and think tanks might also be invited as some of their members may have valuable input on specific elements.

3. These peer-review mechanisms should also offer the forum to discuss elements where EU energy policy decisions are difficult to achieve because unanimous vote is required, such as in the case of energy taxation. Forward-looking Member States should consider engaging into an enhanced cooperation ensuring some basic harmonisation of the composition of energy prices[47].

4. Democratic accountability is only possible where there is transparency. As it is already the case for the Technical Working Group on National Energy and Climate Plans, the public session of the proposed peer review mechanism

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45. A SWOT assessement assesses the Strengths, Weaknesses, Opportunities and Threats of a given topic, in this case, the energy situation of an EU Member State.
46. Jacques Delors et al., "Le semestre européen : un essai à transformer", Bref, Jacques Delors Institute, February 2011.
47. One illustration would be harmonising taxation on gasoline for trucks that may sometimes travel with two tanks as to buy gasoline in low-tax countries (e.g. Luxembourg), thus harming the effectiveness of EU and national policies as well as undermining the revenues of those Member States that opted for stronger environmental taxation

should be broadcasted online as to, for instance, allow national journalists to follow the debate and inform national citizens of the plan their national minister will present and defend in Brussels.

1.2.2. Planning for the long term - horizon carbon neutrality

1.2.2.1. Clarifying what is Europe's desired end-state: carbon-neutrality under the Paris Agreement

The Paris Agreement sets, for the first time, the end-state target for the energy transition: carbon-neutrality (i.e. net-zero emissions: manmade greenhouse gas emissions should not exceed manmade capture of greenhouse gases, for instance thanks to reforestation). If Europe is serious about the Paris Agreement, it requires its cities, regions, Member States and the European Union to prepare long-term plans to reach carbon-neutrality. This needs to start now, with the adoption of an adequate Energy Union Governance Regulation.

In the European Commission's regulatory proposal[48], only one article is dedicated to long-term plans, with no reference to the Paris Agreement objective of carbon-neutrality. It defines "long-term" as 2070, a period that is so far away that IDDRI advocates for those plans to aim at 2050[49]. Both approaches may be missing the point of carbon-neutrality set-out by the Paris Agreement. To avoid that, long-term should strive for a simple target: carbon-neutrality, with a target year that might differ from country to country taking into account national diversity.

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48. European Commission, Proposal for a Regulation of the European Parliament and of the Council, 30 November 2016
49. Oliver Sartor et al., "Developing 2050 decarbonization strategies in the EU: insights on good practice from national experiences", IDDRI, January 2017

1.2.2.2. Structuring long-term plans through sectorial approaches to carbon-neutrality

Looking at a long-term horizon with a specific net-zero emissions objective tends to reduce the importance of short-term vested interests in the debate[50]. It therefore also allows for a more science-based approach to decarbonisation, relying on relevant scenarios to be established and discussed.

A traditional approach to such long-term planning would look at each already existing production process (e.g. steel production) to see how it could become low/zero/negative carbon. A more holistic approach would look at the services delivered to people and see how to make such services zero-carbon. To illustrate the latter, producing zero-carbon housing may entail a change in the use of housing materials, for instance by reducing/eliminating the use of steel in housing as steel is carbon-intensive, and substituting steel by less CO_2 intensive materials or even negative emissions material such as wood—as wood production stores amounts of CO_2 that remain stocked within the wood used for housing.

Once the sectors are identified, it is worth looking at (A) sectors where getting to zero seems unlikely for technical (e.g. aluminium production[51]) and/or political reasons (e.g. military activities[52]), (B) sectors that can easily become zero-carbon (e.g. electricity generation) and (C) activities that enhance carbon sinks (e.g. reforestation, agriculture, use of wood in the construction sector, heat/power generation with biomass combined with carbon capture etc.). Given uncertainties about technologies and human behaviour in 30-70 years, the outcome of this exercise would be a set of scenarios that should be constantly updated to take into account real-life evolutions and changing expectations. In other words, the process of creating such plans is as important as the content of the plans themselves[53].

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50. Oliver Sartor et al., op. cit.
51. Aluminium production involves an electrolysis that transforms alumina into aluminium and CO_2. It moreover produces other GHG, especially CF4(g) and C2F6(g) that are potent GHG (respectively 6,500 and 9,200 times more potent than CO_2). For more information on aluminium production, see International Aluminium Institute.
52. The military sector is often neglected in energy-climate debates. It is a very particular sector for both political and technical reasons. Politically, it is the realm of exceptions from classic legislations. Technically, for civilians, a vehicle's capacity to accelerate is an element of social status while, for the military, the capacity of a vehicle (e.g. a battle tank) to accelerate is a matter of survival in combat.
53. Oliver Sartor et al., ibid.

1.2.2.3. Improving citizens involvement in energy policy-making

To put into practice the idea of energy democracy, the EU and Member States should test new ways to interact democratically with citizens on key topics hardly ever discussed during elections—such as long-term plans for carbon neutrality.

One way forward can be deliberative polling[54]. This approach considers democratic legitimacy to be based on informed opinion, open deliberation and equal participation of citizens. This translates in creating a pool of randomly chosen citizens that are representative (e.g. in terms of age, gender, social origin, level of income, education etc.), to gather them, to inform them substantially, to give them time to debate, and finally to vote a resolution. This has already been done more than 20 times, including once at the EU level in 2007.[55] The European Parliament could again apply this method to allow EU citizens to come to the European Parliament in order to debate Europe's energy future. The European Parliament could commit to endorse the key elements of the outcome of this deliberative poll within a European Parliament Resolution. A similar method could be done at the national level by national parliaments.

A complementary way forward can be to extend the pool and diversity of people involved in the decision-making process, not only to make it more democratic, but also more efficient[56]. An "Energy Transition Assembly" may include people representing the various relevant segments of society, such as MPs, mayors,

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54. The official definition of deliberative poll is : "A Deliberative Poll (DP) surveys a scientific, random sample before and after it has deliberated one or more policy issues or electoral choices. The deliberative treatment includes exposure to balanced briefing materials laying out the arguments for and against given policy proposals, small group discussions led by trained moderators, and plenary sessions in which competing experts and politicians answer questions formed in the small groups. The post-deliberation measurement affords a picture of what the public would think if it thought and knew much more about the issues and had talked much more about them with a much wider variety of their fellow citizens, and the contrast with the pre-deliberation measurement shows how these more considered opinions would differ from those the public currently holds". See Laurie Boussaguet, "Listening to Europe's citizens. An assessment of the first experiments in participation organised at EU level", Policy Paper No.44, Notre Europe – Jacques Delors Institute, 2011.

55. 362 citizens from the then 27 Member States were selected for such deliberative polling that occur inside the European Parliament and during two days. For more information on deliberative polls, see in particular: Pierre Martin, "Réconcilier délibération et égalité politique : Fishkin et le sondage délibératif", Revue Française de Science Politique, 1998. See E. Olsen and H.J. Trenz: "From Citizens' Deliberation to Popular Will-Formation? Generating Democratic Legitimacy in Transnational Deliberative Polling". Conference Paper prepared for ESA Conference, Milan Nov. 30/Dec. 1st, 2012. Boussaguet L. and R. Dehousse (2007) « L'Europe des profanes: l'expérience des premières conférences citoyennes », in Costa and Magnette (eds. 2007), *Une Europe des élites ? Réflexions sur la fracture démocratique de l'Union européenne.*

56. Open approaches to decision making indeed increase the quality of the top ideas even if they may decrease the average quality of proposed ideas. See Andrew King and Karim R. Lakhani, "Using Open Innovation to Identify the Best Ideas", MIT Sloan Management Review, fall 2013, pp.41-48

representatives of the scientific community, farmers, businesses, energy opera-
tors, trade unions, NGOs, as well as citizens randomly chosen—in a way similar
to the way most EU countries pick citizens for jury duty[57].

Beyond the need to have more visible democratic debate on energy issues, test-
ing such methods would also positively impact the image of the European Union
as a body that is conscious of the criticisms made against its so-called lack of
democratic accountability. Moreover, if the vast European consensus over the
necessity to fight climate change through energy efficiency and renewables is
confirmed, this could help counterbalance the influence some lobbies of the "old
world" (see box 3) may have on policy makers.

1.2.3. Adopting a "Clean Energy Union Deal"

International, EU and national energy objectives are clear (see introduction). To
deliver them, EU decision makers need to agree on new rules for the European
energy sector. The European Commission proposals are now on the table, espe-
cially since 30 November 2016[58]. It is now time for the Member States and the
European Parliament to deliver a "Clean Energy Union Deal".

1.2.3.1. European Council Impetus is required

Heads of State and Government can deliver the needed impetus. As national
leaders, their duty is to articulate all policies, including the numerous ones driv-
ing the energy transition: energy, transport, climate, research, innovation, voca-
tional training, social affairs, taxation, etc. Their action is thus of paramount
importance to overcome the hurdles of usual technocratic reluctance, and to
ensure both horizontal and vertical coherence of EU and national energy deci-
sions (see 1.1.3. on holistic approach).

These leaders already signed and ratified the Paris Agreement. The Clean Energy
Union Deal is "only" one element to allow all European states to achieve the col-
lectively agreed objectives of reaching global carbon neutrality in this century. Yet,

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57. Other options could be further studied, such as applying to energy-climate issue the G1,000 initiative initiated by David Van
Reybrouck. See http://www.g1000.org/en/manifesto.php
58. European Commission, *Clean Energy Package for All European*, 30 November 2016

without a push at the highest level, lobbies and governmental technocracies are likely to significantly undermine the ambition of the Energy Union.

1.2.3.2. A "Clean Energy Union Deal", not a "winter package" nor a "fourth energy package"

The Brussels' bubble has a seemingly limitless capacity to create useless jargon ensuring that what is discussed in Brussels never reaches national debating arenas. The latest example is the November 2016 European Commission proposals officially named "Clean Energy For All Europeans", but that Brussels insiders disturbed by these ambitious words quickly renamed "Winter Package". Aside from the fact that the winter season is rarely associated to anything fully positive, this term is confusing as this November 2016 "Winter Package" may be confused with the other November 2016 "Winter Package" dealing with defence policy[59], the February 2016 "Winter Package" on security of gas supply[60], the February 2017 European Semester "Winter Package".[61] Others, such as the French Parliament[62], have called this the "fourth energy package", locking those proposals in the paths of the first (1996), second (2003) and third (2009) energy packages, associated to a sometimes unwelcomed liberalisation process. Both denominations are wrong as they fail to capture the novelty of the Energy Union.

The Energy Union project is a new impetus given to the European Energy Policy, a qualitative jump to go beyond the narrow-minded regulatory framework, to break energy silos (see 1.1.3. on holistic approach) and to ensure that Europeans have a common energy policy that can work to their greatest benefits. It now also relies on a new target, the Paris Agreement's carbon-neutrality objective. It brings a new mind-set: putting consumers and citizens—and not the incumbent energy suppliers—at the centre of policy decision. It also occurs at a moment where energy is among the few areas where the EU can be proactive and deliver concrete and tangible benefits to the citizens of the 27 Member States (see foreword). Finally, it happens at a time when Europe is, for the first time in recent history, unsure of US support, and directly surrounded by two powers, Russia and Turkey, that are actively seeking to divide and rule Europeans to enhance their powers. There may

59. European Parliament, Directorate General for Internal Policies, *The 2016 "Winter Package" on European Security and Defence: Constitutional, Legal and Institutional implications - In-depth analysis*, December 2016
60. European Commission, *Proposal for a regulation of the European Parliament and of the Council concerning measures to safeguard the security of gas supply and repealing Regulation*, COM(2016) 52 final, February 2016
61. European Commission, "European Semester Winter Package: review of Member States' progress towards economic and social priorities", Press release, 22 February 2017
62. French National Assembly, *Le Feuilleton n°665*, 22 February 2017, p.13

even be possibly a third power fostering European division: Britain for the same power game reasons during the Brexit negotiations.

As this time is different, a new name is required. Naming it "A Clean Energy Union Deal" should help bringing about a change in mind sets to get an ambitious deal and avoid having an agreement on the lowest common denominator within each policy area.

In terms of content, this Deal can only deliver if it is maintaining the holistic approach adopted by the Commission in its Energy Union project. The negotiations already started but are unlikely to end before the second half of 2018, after elections in Germany, Italy and others. The British decision to exit the European Union also impacts the decision that will be made (see box 4). It appears already that the European Parliament has much bigger ambitions than the appetite shown by the Member States for several elements of the package proposed by the Commission. A compromise will have to be reached and it has to keep the level of ambition high to remain significant and in line with the objectives set by the Paris Agreement and the targets set for 2030. While the rationale is for Member States to secure their major interest while being flexible on their secondary interests[63], Heads of State and Government may have a major role to play.

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63. To take a schematic example, Poland's main interest may be to secure an EU united front on energy to ensure energy security as well as a common EU energy diplomacy avoiding the shortcomings of the current situation where Vladimir Putin can divide and rule in Europe on several key issues (e.g. Nordstream 2, see box 2). To secure this interest, Poland should be flexible on secondary interests where it can accept some losses (e.g. on phasing out coal in the long run) or still secure wins (e.g. boosting electric vehicles). France's main interest may be to save EDF from a bankruptcy that would cost the French State tens of billions. To do so, it needs to find ways to boost nuclear's competitiveness, e.g. via a higher ETS price and developing electricity vehicles as to secure a higher overall electricity price. In exchange, France would show more flexibility on other elements, such as its reluctance to develop renewables or achieve a genuine EU energy diplomacy. Germany's primary interest may be to secure EU-wide integration of renewables able to reduce the cost of Energiewende on German households (see chapter 3.). It should then show flexibility on other elements, such as its strong opposition to an EU energy diplomacy. A similar approach should be taken to ensure that a broad Clean Energy Union Deal can secure the largest coalition of Member States as well as MEPs.

BOX 4 ► Brexit and its impact on European energy policy[64]

The June 2016 vote for British exit from the EU (Brexit) was not driven by energy issues but it will impact them. As Britain is no longer a coalition maker or a motivated ally in the Council anymore, the Brexit vote weakens the coalitions in which Britain was a key member if not the leader. As a result, EU energy policy may:

– Shift the balance from the overarching objective of reducing greenhouse gas emissions to more effective targets for renewables and energy efficiency;
– Focus less on energy security;
– Put a greater emphasis on stronger governance as David Cameron's government was reluctant for any real governance improvements ahead of his June 2016 Brexit referendum;
– See a weakened position of UK traditional allies, such as Poland, Ireland or the Netherlands;
– See a weakening of the coalition in favour of an ETS reform to boost the carbon price (see chapter 3. for a discussion on carbon pricing);
– See a weakening of the pro-nuclear coalition, as the UK is the only European state where a significant plan to develop nuclear exists, as symbolised by the Hinkley Point C project.

Energy will also be part of the negotiations defining post-Brexit relations between the UK and the EU. Linked to the Single Market negotiations are the energy efficiency standards that the EU has adopted. Trading gas and electricity between Britain and the continent is also important to ensure security of supply at the lowest possible cost. Participation of the UK to the ETS remains an open question. Finally, nuclear safety in Europe is currently ensured by Euratom and even though no Brit voted for British exit from Euratom (Brexatom), current government policy is to consider that Brexit also means Brexatom, thus needing to find a new way to ensure the safety of British nuclear power plants, as well as the security of supply in uranium.

1.2.4. Preparing for implementation

Laws are, by themselves, only ink on paper. For a law to impact people's life, it needs to be implemented and enforced. Implementation thus critically matters for European people.

1.2.4.1. Key principles: Rule of law and trust between Europeans. Decisions that are taken should be fully enforced.

Implementation must be grounded in key principles. In coherence with those mentioned in section 1.1., the principle of the rule of law is fundamental: it means that the law is the same for everyone, and everyone needs to abide by it.

This principle of the rule of law is sometimes poorly applied in EU decision making, as if indeed some were more equal than others. This became quite visible in the Economic and Monetary Union budgetary governance in 2003 when France and Germany were not sanctioned for breaking the 3% public deficit rule. To avoid a similar fate for the Energy Union Governance, we now turn to new ways to ensure that Energy Union decisions are efficiently and effectively implemented in Europe.

1.2.4.2. A stronger role for the European Commission after 2019

"Nothing is possible without men, nothing is sustainable without institutions ...
When well built, those institutions can accumulate
and pass wisdom to future generations".
Jean Monnet's Mémoires, 1976.

Once elected by the European Parliament in 2014, Jean-Claude Juncker restructured the European Commission's internal organisation by creating Vice-Presidents positions and asking them to steer the work of "Project Teams" gathering all commissioners relevant on a given policy area. Energy policy now has its dedicated Vice-President: Maroš Šefčovič, a career-diplomat who already served as EU commissioner for transport (2009-2014). His role is to ensure that the European Commission overcomes the silo mentality when it comes to the Energy Union. He works hand-in-hand with commissioners that are key for the Energy Union (see table 2). This is very welcomed as those project teams are more likely to ensure an effective holistic approach articulating all EU tools towards a common objective.

This new structure added to already existing tensions. Media attention was paid to tensions between Maroš Šefčovič and Miguel Arias Cañete. Yet, such tensions do not necessarily have to be negative. They can "bring about a competition of ideas, which in case of thorny issues, allows the [European Commission] President to hear both sides of the argument and to take an informed decision if no compromise"[65] is to be found. It makes the Commission more political and less technocratic if it debates real political choices.

65. Marine Borchardt, "A political European Commission through a new organisation - 'This time it's different'. Really?", Policy paper No.180, Jacques Delors Institute, December 2016

TABLE 2 ► The European Commission's Energy Union Project Team

| COMMISSIONER	POLICY PORTFOLIO
Full members	
Miguel Arias Cañete	Climate action and Energy
Karmenu Vella	Environment, Maritime Affairs and Fisheries
Phil Hogan	Agriculture and Rural Development
Violeta Bulc	Transport
Elżbieta Bieńkowska	Internal Market, Industry, Entrepreneurship and SMEs
Corina Crețu	Regional Policy
Carlos Moedas	Research, Science and Innovation
Associate members	
Andrus Ansip	Digital Economy & Society
Cecilia Malmström	Trade
Marianne Thyssen	Employment, Social Affairs, Skills and Labour Mobility
Pierre Moscovici	Economic and Financial Affairs, Taxation and Customs
Věra Jourová	Justice, Consumers and Gender Equality
Margrethe Vestager	Competition

This new Vice-Presidency structure is a success that needs to be continued after 2019. It has indeed been effective in ensuring a holistic approach to the legislative proposals the European Commission has put forward from 2015 to 2017.

Need to restructure the Commission services into a "climate and clean energy department" aiming at framing clean energy services (one for H&C, one for electricity, one for mobility).

The creation of the Vice-Presidency has also shown the difficulty for the various DGs concerned, and responding to different management structures, to deliver the proposals in the most coherent and coordinated way. The time has come to restructure the administrative organisation of the European Commission in line with the holistic approach required by the Energy Union, to offer greater added value of the European Commission's work in respect of national energy administrations, and more independence *vis-à-vis* lobbies.

The European Commission's DG Energy is still organised along energy supply sources (see figure 4) rather than on energy services to the consumers[66]. While such an approach may fit the interests of those energy suppliers that are still structured in an energy-source way[67], it fails to capture what energy end-users (i.e. businesses and citizens) actually need. Energy consumers do not need oil, gas or renewables *per se*; they want energy services: heating, cooling, mobility and electricity.

FIGURE 4 ▶ Organisational Chart of the DG Energy
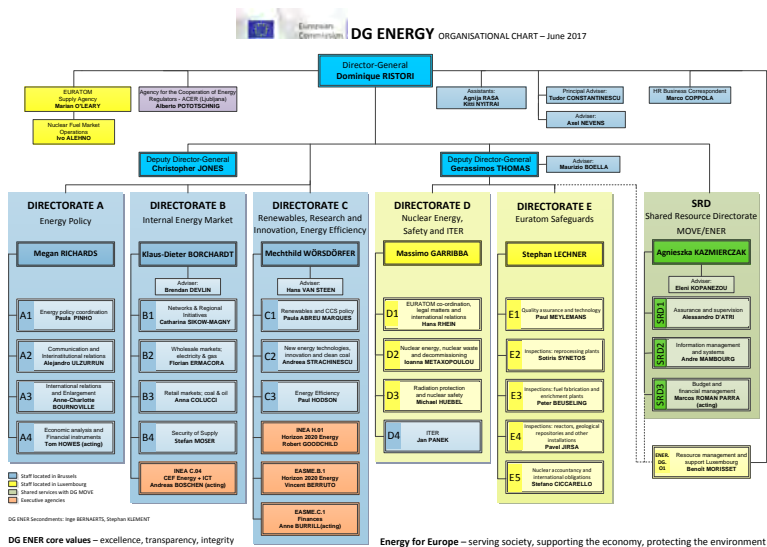
As a result, a genuinely consumer-centric European Commission requires a DG Energy structured around those three key energy services: heating & cooling, mobility, and electricity. This would also help make the European Commission more independent from vested interests as this transformation would oblige lobbies to drastically rethink their lobbying strategy to adapt it to the renewed structure of DG Energy. The same applies to DG Move dealing with transport and may also involve DG Climate and DG Environment.

66. This is similar for DG Move that is stil organised on transport modes, while virutally all transportation is multi modal (e.g. someone walking to take a bus to get to a railway station/airport).
67. Example of the change in Engie, that is now structured in B2B, B2C and B2T.

Last and not least, this would increase the capacity of the European Commission to deliver an added value to the work already done by national administrations. The Commission's new structure would refocus its work on energy services, while national administrations will presumably continue to be structured on an energy source basis.

Such a deep restructuring of the European Commission should happen only after the decisions on the "Clean Energy Union Deal" have been adopted, hence more likely in the 2nd semester of 2018 or 1st semester of 2019. This should be the task of the new Commission that will be elected during the 2nd semester of 2019 as it also implies a different distribution of the portfolios of the Commissioners to come.

Such restructuring should also go hand-in-hand with the creation of a European Energy Information Service within the European Environment agency (see box 5) to provide European and national decision-makers, as well as citizens, with independent, reliable and up-to-date information.

BOX 5 ► A European Energy Information Service to save Europe the money wasted by ill informed decisions[68]

Science-based policy decisions require good analysis. The Energy Union thus needs up-to-date data, robust analysis, and scenarios for the future which are produced by open models relying on transparent assumptions. Currently, the European Union tends to sub-contract analysis to external consultants. This system has reached it limits.[69] To illustrate, the projections used by the European Commission to estimate future gas demand suggested that gas demand would skyrocket. In truth, actual demand decreased[70]. Such flawed projections favoured unnecessary gas infrastructure investment in Europe. These mistakes reached the point where the European Court of Auditors considers that the European Commission "needs to restore credibility of the [gas demand] forecast it uses"[71].

To deal with those problems, Europe needs its own, fully independent and open-source provider of both reliable energy statistics and scenarios. It needs to be accessible by all EU and national decisions makers, business leaders and citizens. Such "European Energy Information Service" (EEIS) should work hand-in-hand with Eurostat. It should ensure the quality of the data provided by Member States, develop one entry point for all the datasets needed to assess the progress of the Energy Union, develop with stakeholders the assumptions for different scenarios, provide open source models to allow for testing different assumptions and to check consistency between different projections.

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68. The authors would like to thank Yamina Saheb for her contribution to this box.
69. It also leads to inconsistencies between models used for different European Commission proposals. See Yamina Saheb, *Clean Energy for All Europeans Package - Do the Commission Impact Assessments Assign the Right Role for Energy Efficiency?*, OpenExp, 2017
70. Dave Jones, Manon Dufour, Jonathan Gaventa, *Europe's declining gas demand*, E3G Report, June 2015
71. European Court of Auditors, « Des efforts supplémentaires sont nécessaires pour améliorer la sécurité de l'approvisionnement énergétique en développant le marché intérieur de l'énergie », Special Report No.16, December 2015, p. 37

As to avoid the hurdles of creating a new European agency, this service should be created by extending the capabilities and mission of the European Environment Agency (EEA). Having an ad hoc service, rather than external consultants, is key to ensure continuity and institutional memory. It is also important to ensure that the EEIS is independent from all decision-makers (including the European Commission). As Article 35 of the proposed Energy Union Governance regulation deals with the role of the EEA in the governance of the Energy Union, it can be the legal vehicle to create a properly staffed EEIS within the EEA.

Restructuring existing energy fora

The restructuration of the European Commission should be the opportunity to adapt the competences of the existing Energy fora in order to steer European wide debates with all stakeholders, including the Member States and the national regulatory authorities. Existing Fora are mostly[72] centred on a supply-side perspective, with the ones of Madrid on gas[73], Florence on electricity[74], Berlin on fuel mix[75], or Prague/Bratislava for nuclear energy[76], while the more recently created London Forum deals with the citizens' issues and the Copenhagen Forum with infrastructures. Whether these fora should all be maintained or should be consolidated is a valid question if the Energy Union is about eliminating the silos. An alternative could be to organise fora to discuss how energy should best serve customers while being climate friendly: we could imagine a forum on transport and mobility, another one on heating and cooling and a last one on electricity. The optimal fuel mix and infrastructure aspects should be integrated in each one of these three fora. Another option could be a single plenary Energy Forum working with subgroups on the various energy services and reporting to the plenary. And these new fora should also make a significant room to representatives from civil society such as NGOs dealing with climate action, consumers interests and other aspects directly linked to the public acceptance of energy actions.

1.2.4.3. Working with grassroots national organisations to implement EU law

The European Commission should have the highest authority in ensuring by all legal means the full implementation by Member States and stakeholders of the applicable law designed to guarantee a level playing field for all throughout the EU. Yet, the current situation knows three key limits:

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72. A notable exception is the London forum on citizens and consumers : https://ec.europa.eu/energy/en/events/citizens-energy-forum-london
73. See https://ec.europa.eu/energy/en/events/madrid-forum
74. See https://ec.europa.eu/energy/en/events/meeting-european-electricity-regulatory-forum-florence
75. See https://ec.europa.eu/energy/en/events/berlin-energy-forum-february-2014
76. See https://ec.europa.eu/energy/en/events/european-nuclear-energy-forum-enef-plenary-meeting

- First, in some cases, the European Commission may prefer not to enforce legislation to keep good relations with a specific national government or to avoid interference with elections.

- Second, the process is lengthy. The European Commission waits for Member States to notify the legislation adopted to transpose an EU directive. In most cases, several fail to transpose EU directives in a timely and appropriate manner. In such instances, the Commission starts a dialogue with the Member State—a time during which EU legislation is *de facto* not applied. Only when a Member State proved to be reluctant does the European Commission start bringing the case in front of the European Court of Justice. This ping pong game between the Commission and the national government may take several years before it lands for the Court of Justice where it takes another one or two years to get a judgment. In some cases, a second judgment is needed. The possible imposition of financial penalties to the Member State in breach of fulfilment of its obligations slightly improved the situation. However, it is clear that the best way to avoid such huge delays is to proceed with regulations directly applicable to all parties and avoid as much as possible to legislate with directives whose transposition into national law is too often the occasion for the Member States to buy time or to create new loopholes.

- Third, the process can be unpopular. When the Commission brings a case to the European Court of Justice, national media may qualify the situation in terms of "Brussels' interference" in national decision making.

Strengthening the EU level of enforcement of the law remains critical. Yet, the EU should add another tool in its EU law enforcement toolbox. This new tool should aim at Europeanising the national level of enforcement of the law—including national enforcement of EU law.

In our era shaped by citizen engagement, rising role of civil society organisations and digital communication, the European Commission should aim at working with national actors with a vested interest in ensuring the respect of EU law in a specific area. Those organisations can indeed bring cases in front of national judges who may directly apply EU law when it is clear and put questions to the Court of Justice when it is less clear. Relying on national courts is likely to make the process swifter in most EU Member States[77]. As the case is brought in front

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77. Such approach may however not work in some countries where, such as in Greece and others, the national judicial system is too slow to deliver timely decisions.

of national judges by national actors there is a smaller chance to see the EU opinion image harmed in the process.

1.3. Delivering concrete and visible projects

The European Commission now embraces the holistic approach[78] (see 1.1.3.) to the energy transition. It proposes concrete legislative proposals for a "Clean Energy Union Deal" that should create a robust regulatory framework able to deliver clean energy for all Europeans (see 1.2.4.). Reaching such deal requires complementary efforts. In its role of facilitator, the European Commission should encourage public and private players to promote concrete projects that visibly benefit citizens while showcasing the benefits of concrete energy transition decisions. We suggest five concrete projects aiming at:

- Delivering concrete benefits to EU citizens, hence promoting the idea that the EU can be a tangibly useful project for its citizens;

- Showing the direct benefits the energy transition can bring in people's life, in order to foster support for clean energy at all levels of governance,

- Unlocking some key bottlenecks that are slowing down the energy transition;

- Building a network of a variety of actors who can act as national enablers of clean energy decisions, including by acting as EU energy law enforcers (see 1.2.4.3.).

We further propose a method to enable EU actors to identify other projects that those proposed here.

1.3.1. Rolling-out charging points for electric vehicles with the Juncker Plan[79]

Electric vehicles are one of the most promising components of the future of mobility. Developing electric vehicles is of strategic importance for Europe to make European carmakers the world leaders in electric vehicles (see chapter 2.), thus avoiding that international competition harms job prospects in Europe. It also fights air pollution as oil-based transport is a key contributor to air pollution killing 430,000 Europeans every year (see chapter 4.). It helps fighting

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78. See Andoura Sami, Vinois Jean-Arnold, "From the European Energy Community to the Energy Union", Studies & Reports No.107, Jacques Delors Institute, January 2015
79. The authors would like to thank Michel Derdevet, Marjorie Jouen, Patrick Jochem and Abrial Gilbert d'Halluin for their valuable comments on this section.

climate change, provided that electric vehicles run on clean electricity[80]. Last and not least, it makes Europe less dependent on fossil fuels imports and it keeps the money of these imports for more domestic economic developments.

Many initiatives are already under way[81] (e.g. Juncker Plan support to the Northvolt GigaFactory, see chapter 2., box 2), and classic regulatory tools should be effectively used with an European Commission regulatory proposal coming up in the second half of 2017. To pave the way for electric vehicles, the European Commission should act as a regulator, but also as an enabler.

One major roadblock for the deployment of electric vehicles is people's perception of a lack of charging points. No one wants to buy an electric vehicle if he/she is not certain that it can easily be charged. The charging point must moreover be reliable, i.e. to provide security of electricity supply to all users, as well as an easy, secure and affordable mean of payment. To fight both the perception and reality of the risk of "running out of battery", the European Commission should join forces with like-minded public and private actors[82] to equip all European highways and cities with charging points for electric vehicles by 2020[83]. Such a project should benefit from the financial support of the Juncker Plan[84]. In exchange for this financial public support, the EU should ensure that:

- The roll-out of this project enables the emergence of a single European norm for charging points, thus ensuring that any electric vehicle sold in Europe can be plugged on those EU-supported charging points;

- The roll-out should not be limited to the most densely populated areas (e.g. European metropolis) but also concern peri-urban and rural areas as to ensure territorial cohesion as well as access to electric vehicles by all Europeans.

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80. Hence the necessity of a holistic approach encompassing electric vehicles, electricity market design and renewables deployment. For a study of rising CO_2 emissions because of rising electricity consumption due to passenger cars, see Jochem, P., Babrowski, S., Fichtner, W. (2015), *Assessing CO_2 emissions of electric vehicles in Germany in 2030*, Transportation Research.
81. European Commission, *A European Strategy for Low-Emission Mobility*, July 2016. See also Michel Derdevet, *Énergie, l'Europe en réseaux*, La Documentation Française, February 2015
82. Example of those actors are Nations and cities already pushing in favour of electric vehicles (e.g. the Netherlands, Denmark, Poland, France). Companies would also be involved, such as electricity distribution system operators who would like to avoid that a disorganised roll-out of charging points disturbs the stability of local electricity grids. Companies like Total may also be involved, both because they are in the electric battery business, and because they need to ensure the future of the refilling stations they own.
83. For an in-depth study on the optimal allocation of a specific kind of EV charging points, see. Jochem, P.; Brendel, C.; Reuter, M.; Fichtner, W.; Nickel, S. (2016), "Optimizing the allocation of fast charging infrastructure for electric vehicles along the German Autobahn", *Journal of Business Economics* 86(5), 513-535
84. Eulalia Rubio, David Rinaldi and Thomas Pellerin-Carlin, "Investment in Europe – Making the best of the Juncker Plan", Jacques Delors Institute, Study, March 2016

- EU support should be clearly visible as to show citizens that their taxpayer money is put to good use by the EU[85].

1.3.2. A Green Erasmus Pro Programme

The energy transition creates new jobs. In a Europe with millions of young unemployed and the difficulty for clean energy businesses to sometimes find workers with the right skills at the right place at the right time, the energy transition is a critical opportunity to fight youth unemployment by boosting green jobs creation (see chapter 4.).

One way forward is for the EU to channel some of its EU budget money for a green Erasmus pro programme aimed at allowing young apprentices to learn the "green skills" that will increase their chances to find a quality job, while making them agents of the energy transition. This proposal is further detailed in chapter 4., section 4.1.4.3.

1.3.3. Making European islands the figureheads of the energy transition[86]

The European Union has more than 2,500 islands where millions of Europeans live. Those islands should become the test bed and showrooms of transition paths to self-sufficiency thanks to a 100% renewable energy mix.

There is a clear economic case. These islands tend to almost entirely rely on oil for their transport, heating and electricity (see figure 2), while renewable electricity generation is now cheaper than oil-based electricity generation. Islands' energy bills are very high, and often heavily subsidised. As an illustration, mainland French consumers pay a special tax on their electricity bills to subsidise French islanders so they can benefit from a cost of electricity lower than the actual production cost of electricity on their islands. This represented 1,8 billion in 2014[87] for France alone.

It is in Europe's interests to work with European islanders to develop European islands paths to the energy transition. It will also help to establish many examples of best practices that can later benefit mainland Europe and any isolated

85. One simple way to ensure this point is to have an EU flag on all the charging points built with EU support.
86. Enrico Letta, Bertrand Piccard, Herman Van Rompuy, "Why and how Europe should become the world leader of renewable energy?", Tribune, Jacques Delors Institute, 7 February 2017
87. Commission de Régulation de l'Énergie, Historique des charges de service public de l'électricité et de la contribution unitaire.

areas on any continent[88]. Political momentum is gathering as illustrated by the 18 May 2017 Valletta declaration on clean energy for EU islands, signed by the European Commission and 14 EU countries[89].

1.3.4. Develop an EU-Africa clean energy partnership

Africa is one of Europe's greatest challenge and opportunity in the 21st century. With a projected population of 2 billion in 2050, a sound and clean development of African countries is crucial and it should offer great opportunities for European businesses and workers to contribute to this development. Any setback in Africa may directly impact Europe, notably through forced migration.

The energy transition is a critical enabler for the economic development of Africa. 600 million Africans currently have no access to electricity, hence little to no prospects of economic development. Ensuring access to electricity is thus critical. This electricity will be clean, because renewables (especially solar) is often the cheapest way to generate electricity in Africa today, but also because many African countries are on the frontline of climate change.

Developing an EU-Africa energy transition partnership[90] embedding public authorities and civil society is thus a strategic endeavour for both continents. The challenge is to structure and scale-up all existing initiatives[91] to ensure that millions of micro-projects contribute to the overarching endeavour[92]. November 2017 will see the holding of a EU-Africa summit which could decide to accelerate this transition.

It is a concrete way for Europe to show its commitment and interest in becoming the global provider of clean energy solutions (see chapter 2.). It is also a concrete step to deliver on the Paris Agreement as well as the UN Development Goal of

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88. This external dimension offers another opportunity to the European competences to bring benefits to the more than 1,2 billion people having no access to electricity today. See Thomas Pellerin-Carlin and Pierre Serkine, "From distraction to action – for a bold European Energy Union innovation strategy", Jacques Delors Institute, Policy Paper, June 2016.

89. Those signatories are the European Commission, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Malta, Portugal, Spain, and Sweden. The text of the declaration is available here.

90. Enrico Letta, Bertrand Piccard, Herman Van Rompuy, "Why and how Europe should become the world leader of renewable energy?", Tribune, Jacques Delors Institute, 7 February 2017

91. Such as the programme of the Vlerick Business School or other business or engineering schools. In such programmes, MBA students, as part of their cursus, may be sent to African countries to perform a market study among small enterprises to assess the potential for self-sufficient power solutions, through better efficiency and use of renewable sources. Such consultancy work could be organised by all business and engineering schools of Europe with an appropriate funding, for instance by the European Development Fund.

92. See Simone Tagliapietra, "Electrifying Africa : how to make Europe's contribution count", Bruegel Policy Contribution, June 2017

"ensuring access to affordable, reliable, sustainable and modern energy for all"[93] while helping to achieve the EU goal to be the world leader in renewables.

1.3.5. Protecting Europeans from unwelcomed foreign interference

Europe needs to show it is not the fall guy of globalisation. It has sometimes acted like this in the past. For instance, some Member States impeached the European Commission to adopt anti-dumping measures that would have saved thousands of European jobs in the nascent solar industry, while strengthening Europe's solar industrial base to pave the way for the next generation of solar panels. Consumers may have benefited from initially cheaper Chinese solar panels but thousands of workers lost their jobs. There is no black and white situation and that is why any "protectionist" intervention should be carefully assessed in order to ensure the best welfare for society.

Today, countries like China or Russia, that have put in place very strong measures to protect a long list of strategic sectors, are buying critical elements of the EU economy, including in strategic sectors like the media or energy. A striking move was recently done by State Grid of China[94], the largest transmission and distribution system operator and the largest manufacturer of all equipment needed such as cables… It purchased European electricity transport system operators (TSOs), starting in Portugal and Italy. This is a worrying move because TSOs are a critical element of the electricity supply value chain and European companies are also their suppliers of equipment, up to now. In a spirit of effective reciprocity, the EU must use its trade, security and competition tools to effectively protect European interests, in this case ensuring that those purchases will not be detrimental to European companies that provide equipment to European TSOs, while being excluded from the Chinese market.

Mapping foreign investments into strategic sectors (e.g. energy, digital, media) is a necessary first step. It should be embedded in a broader agenda attempting to ensure a common European response to what is sometimes called "economic warfare" or "hybrid threats". One element could for instance be that any non-EU entity acquiring more than 10% of a strategic company, should first be authorised by a kind of Committee of Foreign Investments as it exists in the US. As Estonia is very much aware of those risks, the European Commission could work with the Estonian Presidency of the EU (July-December 2017) to identify ways forward.

93. United Nations, Sustainable Development Goal n°7: Ensure access to affordable, reliable, sustainable and modern energy for all
94. State Grid of China is the biggest transport and distribution system operator of electricity, as well as the biggest manufacturer of related equipment, such as cables etc.

1.3.6. Identifying more concrete projects

The five above-mentioned concrete projects are not silver bullets. They however are useful elements that can start to deliver by 2018, while having a strategic impact, as well as a political one of showcasing to Europeans that the energy transition is not only feasible and desirable, but that it is already underway, and that the EU is at the forefront of this endeavour that makes European lives better.

Yet, there is a need to identify more concrete projects that could have similar benefits. To do so, the European Commission should launch three initiatives.

First, the European Commission should map the strengths and weaknesses of all European regions *vis-à-vis* the energy transition as to see their opportunities and threats. It should help identifying champions and showing how countries are already benefitting or can benefit. Such assessment can be done by the European Commission's DG GROW (in charge of the panorama of EU competences) in collaboration with national and regional administrations as well as private actors. This mapping is moreover of political importance as it may help national politicians reassessing where their national interest truly lies. For instance, it could inform them that, while energy efficiency may lead to less coal consumption and thus less coal jobs, it might also lead to households buying insulation solutions which happens to create much more local jobs.

Second, the European Commission should federate forward-looking European companies into a coalition for the transition. There is a need for a paradigm shift in the way public and private sectors interact in Brussels—as well as in most EU countries. Currently, private sector officials, led by lobbyists, visit public decision makers to influence them on legislative details usually with the aim to reduce the level of ambition of the proposals to be made or tabled by the Commission. While it may be useful to avoid situations where policy decisions may poorly take into account the situation "on the ground", it has a severe political downside as it creates suspicions that EU bodies are following what some powerful private companies are telling them to do.

The energy sector is obviously subject to intense lobbying, with national governments often being the best lobbyists for their national corporations[95] (see box 3). Sometimes prominent political leaders are leading the way as

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[95]. As recently emphasised by national governments to raise car emissions limits to protect their national car manufacturers after the DieselGate.

exemplified by former German Chancellor Gerhard Schröder's position of President of NordStream[96] (see box 2).[97]

Public-private cooperation is useful when it promotes the public interest. Beyond ensuring genuine transparency[98], it is important to shift the focus of such cooperation towards concrete projects. In other words, the discussion should focus on how public tools (e.g. Juncker Plan) and private initiative (e.g. development of electric cars) can work together on concrete win-win projects (e.g. the large-scale roll out of charging points for electric vehicles advocated in section 1.3.1.).

The interest of private businesses there is to ensure that policy makers will create the right and stable framework to make possible useful projects. The interest of EU public actors is to show that they are not only here to regulate—a critical mission that needs to continue—, but also to enable private initiative aimed at promoting elements of public interest, such as breakthrough innovation, job creation, and the shift to clean energy.

Good news is that the EU has already created several fora that can be used for that purpose. One is currently under construction by the European Commission: the "Clean Energy Industrial Competitiveness Forum"[99]. This forum may become the European Union's arm to drive a European industrial policy for the energy transition based on innovation (see chapter 2.), public-private cooperation, entrepreneurship, transparency and democratic accountability.

Third, the European Commission should work with mayors of cities and regional decision makers that experience the holistic nature of energy challenges, encompassing mobility, heat and power. The top down approach of the EU and States should be able to join forces with the bottom up initiatives of local authorities and civil society, in a spirit of cooperation to reach the objectives of the Energy Union. The Covenant of Mayors[100] (see chapter 3., box 8) offers a unique platform to that effect and it can be developed further, both inside and outside the EU.

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96. "Gerhard Schroeder's Sellout", *Washington Post*, 13 December 2015
97. At the EU level, 2016 saw José Manuel Barroso, former European Commission President (2004-2014) joining the US Bank Goldman Sachs, an entity best known as the bank that helped former Greek governments to falsify data in order to get into the Eurozone.
98. Steps in the right direction have been taken over past years, with for instance the Transparency Register. Yet, there is immense room for improvement.
99. European Commission, Second Report on the Energy Union, February 2017
100. See the website of the Covenant of Mayors: www.covenantofmayors.eu

CONCLUSION: CONCRETE PROJECTS AND LONG-TERM GOVERNANCE WORK HAND-IN-HAND

The energy transition is one of Europe's defining endeavour in the 21st century. The way we perform our energy transition is already shaping collective life, creating jobs while destroying others, redefining the relationship between the EU, Member States, regions and cities, as well as relationships both within and between public sector and private sector organisations.

Embracing the holistic nature of the energy transition is crucial also as it allows to link the more abstract—and yet critical—elements of the energy transition with the most concrete and specific projects that can be done today. It is both about democratically building long term carbon-neutrality plans (see 1.2.2.2.), and about delivering concrete projects today, such as using the Juncker Plan to roll-out charging points for electric vehicles (see 1.3.1.). Both elements are intertwined and cross-fertilizing. The more we implement concrete plans, the more the energy transition is seen by everyone for what it is: a desirable change that is already happening. The clearer and best designed our long-term plans are, the more we can foster certainty on what needs to be done now, while also highlighting the remaining obstacles where more technological and/or social innovation needs to occur.

Governing the energy transition is a matter of political choices. It must not be limited to the administrative process of monitoring, reporting and verifying information the European Commission proposed in November 2017. It has to happen as good information is key to govern. But governance in the energy transition is much more than that. It is about our ability as Europeans to deliver a better life for ourselves. More democracy is now needed to answer popular concerns and avoid having Europe following once again the authoritarian path proposed by some.

Beyond that, governing the energy transition is the enabler for Europe's industrial renaissance based on Europe becoming the global provider of clean energy solutions, as we develop in chapter 2. This requires an enabling investment framework analysed in chapter 3. Finally, it requires a Social Pact as described in chapter 4. to make the energy transition a just transition able to deliver quality jobs, empower consumers and eradicate energy poverty.

2. Innovating to drive an energy transition for all Europeans

by Thomas Pellerin-Carlin

The energy transition is introducing new technologies, processes, services, techniques and behaviours in human organisations; it is a process of innovation on a massive scale.

Research and innovation (R&I) are key enablers for a swifter, cheaper and fairer energy transition. Well-crafted energy R&I policies and actions, supported by an appropriate market design and enabling policies, can moreover foster a renewed European approach to competitiveness, industrial policy and citizen involvement in 21st century Europe.

This chapter[101] looks at R&I in the context of the energy transition[102]. It begins by highlighting the critical role of R&I, not only as the 5th dimension of the Energy Union, but as an enabling area where public support is critical to reap the benefits of the energy transition. It then provides an analysis of the current strengths of Europe in the global clean energy race, notably its academia and businesses. It describes the many relevant EU policy tools and highlights areas that need to be improved. Finally, it provides policy recommendations to foster an adequate transformation of EU energy policy as well as the renaissance of energy incumbents into the energy transition tigers Europe needs them to become.