

European issues
n°369
03rd November 2015

Energy Union, a vast, far reaching project

Michel DERDEVET

Abstract :

A few weeks before COP21 the issues at stake in Europe's energy policy revolve more than ever before around sustainable, reliable, affordable energy for all Europeans, both businesses and citizens alike. The dual economic and ecological challenge facing Europe under energy transition must be seen as industrial policy and competitiveness goals. The vast project of Energy Union is precisely "a historic opportunity" to reshape the foundations of European leadership.

A few weeks before the Paris Climate Conference (COP21), Europe of Energy allows us the greatest hope for a pioneering Union in a "low carbon" transition, and also the greatest fear, with continued warning signs (growing external dependence on fossil energy imports, a disorganised economic approach to the support of renewable energies etc.), and even crisis, with threats to winter electricity supplies, notably in Belgium and France. This paradox is the result of an old situation that has grown since Fukushima and exacerbated by the economic and financial crisis. The European Union has set out an extremely complex series of joint goals (progressive liberalisation of the electricity and gas markets, 2020 and 2030 energy-climate packages, etc.) whilst allowing the Member States to make fundamental choices in terms of how they produce energy.

Of course article 194 of the Lisbon Treaty introduces a new legal basis, specific to the area of energy which notably enables the European Union to lay out in detail and to clarify its action and allows it to take steps to ensure the smooth functioning of the energy market, supply security and to promote energy efficiency, as well as the interconnection of the energy networks.

However, beyond the texts it has to be admitted that the Member States are not really converging towards the necessary European "steering" of energy transition; in the end it is overall industrial de-optimisation that prevails. This situation weakens continental energy leaders, and has led to development "bubbles" in certain renewable energy sectors, like for example the photovoltaic bubble at the end of the 2000's and therefore dissonant signals are sent out to investors.

European citizens are quite logically discovering that energy transition could lead to 28 uncoordinated policies

and are calling for exchange, sharing and rationalisation. Hence the most recent Eurobarometer [1], a European opinion survey, confirms the timeliness of the inclusion of energy in the new Juncker Commission's priorities. 72% of Europeans support a common energy policy. In all Member States more than half of those interviewed support a common energy policy. This has been enough to encourage the two European Commissioners responsible for this issue, Maroš Šefčovič, Vice-President for Energy Union and Miguel Arias Cañete, Commissioner for Climate and Energy Action.

The dual, economic and ecological challenge facing Europe has to be considered as one. In this regard the coordination of national energy transition projects can be seen as an industrial policy and competitiveness goal to reshape the foundations of European leadership. This is the idea behind the 315 billion euro investment plan for Europe adopted in June now entering its operational phase. The European Commission and the European Investment Bank's (EIB) Task Force was set up to this effect and has so far picked out 2000 eligible projects 29% of which, a significant share, are devoted to energy [2]. It is also the idea behind the grand project for Energy Union presented on 25th February last by the European Commission. As Jean-Claude Juncker repeated during his presentation: *"For too long, energy has been exempt from the fundamental freedoms of our Union. (...) This is about Europe acting together, for the long term. I want the energy that underpins our economy to be resilient, reliable, secure and growingly renewable and sustainable."*

Beyond these commitments, which are moving in the right direction, we should recall that the issues at stake in terms of a truly European energy policy still revolve around the

1. Eurobarometer Standard 83
Spring 2015 - Public Opinion
in the European Union - 31st
July 2015.

2. Cf. its report 9th December
2014.

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three following priorities: sustainable, reliable (both from an external and internal point of view) and affordable energy for all Europeans, for both businesses and citizens alike.

CLIMATE ISSUES

The Intergovernmental Panel on Climate Change (IPCC) published the summary of its fifth report on 2nd November 2014 which comprises the scientific base of the international negotiations on the climate that were completed in Lima. These are due to lead to the signature of a world agreement during the 21st Climate Conference in Paris in December 2015 thereby engaging all major emitting countries for the very first time (including Brazil, India, China, USA and Canada).

This report is clear: in order to achieve high probability of remaining under the 2°C in terms of global warming in comparison with the pre-industrial period, world greenhouse gas emissions must imperatively be reduced by 40% to 70% by 2050 in comparison with their 2010 level.

Europe must continue to take the lead in this area because at the beginning of the 21st century it is at the forefront in the fight to counter climate change. Its goal of reducing CO2 emissions set at 20% as part of the famous so-called 3x20's goals, will in all likelihood have been surpassed by -25% within the next five years [3]. The European Commission has therefore demonstrated how pro-active has been, as it presented "The Paris Protocol" on 25th February last – "a document to address world climate change beyond 2020" which sets out proposals to guarantee the success of COP21. Jean-Claude Juncker also recalled this quite energetically and seriously during his speech on the "State of the Union" to the European Parliament in Strasbourg on 9th September last: "As we approach the Paris Conference we have to be extremely ambitious. We are doing a great deal to settle the issue that might be the source of further waves of refugees. We should not be surprised if tomorrow we see the arrival of the first climate refugees," he warned. "The EU will not just sign any agreement; my priority, Europe's priority, is to adopt a global agreement on the climate that is ambitious, resilient and binding; the Commission will do everything it can for Europe to remain on the leading edge of the fight to counter climate change. We shall practice what we preach."

Indeed it is the European Commission's aim to come to an agreement that includes a long term global goal to reduce greenhouse gas emissions by 60% by 2050 (in comparison with 2010) which will put the world on track for the 2°C goal [4]. This agreement aims to be legally binding, transparent and will include a procedure to check on commitments as well as a five- year review. The European Union is the first block of countries to have submitted an offer. The 2030 European energy and climate framework, approved by the European Council on 24th October 2014 provides for a binding goal to reduce greenhouse gas emissions by 40% in comparison with their 1990 levels: "the goal will be achieved collectively by the EU (...) All of the Member States will take part by reconciling fairness and solidarity". It also provides an indicative energy efficiency goal of 27 % by 2030 (with a reassessment planned for 2020 to take the goal up to 30%), as well as a 27% renewable energy goal by 2030. However the Member States, including those emitting the most CO2, retain the choice of energy mix. There is therefore a risk that efforts will not be shared equally, thereby worsening the incoherence of the European energy policy, which aims to be exemplary in the fight to counter climate change.

In order for the effort to combat climate change to be joint, European leadership has to be quickly (re)-established in this area. This was the idea behind the recent call made by the European Parliament [5] which advocates for the European Commission to show strong leadership in 2016 and for it to make "full use of its right of initiative to indicate clearly the path that the Union is to follow," in terms of climate change, energy independence and resource efficiency. Common governance has to be accepted. An independent European CO2 regulation authority is required – as it is the case for the euro.

More generally Europe must – like all major emitters, with China and the USA in the lead [6] - look into powerful economic instruments if it wants to contribute to reversing the pace of CO2 emissions. With this in mind, Christian de Perthuis, Professor in Economy at Paris-Dauphine [7], made a timely suggestion of two carbon pricing systems in which Europe might find inspiration and which might provide an acceptable means of making the 100 billion \$ North/South transfer that will be debated during COP21. The first, which is designed for States, exists already – it needs to be revived and reactivated; it is the *bonus-malus*

3. Whilst these two goals in the Energy/Climate Package will only be partially achieved with 18% to 20% of renewable energies in final consumption and 16% improvement only in terms of energy efficiency achieved.

4. As decided at the Lima conference (COP20).

5. Legislative resolution of the European Parliament on the 2016 European Commission Work Programme – 16th September 2015.

6. China, USA and the EU alone comprise 56% of world emissions and the ten leading emitters represent 83% of emissions.

7. « Le Capital Vert » (Odile Jacob, 2013).

system on greenhouse gas emissions which enables redistribution between governments and encourages countries to enter the mechanism and the monitoring of climate commitments (Measuring Reporting Verification MRV). The second system is designed for the economy. It might be achieved with the introduction of a common platform shared by the biggest producers of greenhouse gases and initially involve the electricity and industrial sectors.

What is the right price signal for carbon? As of 40€ per ton of CO2 significant changes are made in investment choices. At around 60-65€/ton, carbon capture and storage (CCS) starts to be profitable and massive substitution effects take place in industry of carbon over to biomass, renewable energies.

EXTERNAL ENERGY SECURITY

In 2014 the Russian/Ukrainian geopolitical crisis highlighted once more the Union's high energy dependence. 53% of its energy consumption is imported to a total cost of 1 billion € per day. This involves 88% of the oil consumed, 66% of the natural gas and 42% of the solid fossil fuels like coal. We should note that on average 30% of the gas consumed in Europe comes from Russia, half of which transits via Ukraine.

And so relations with Russia undeniably impact supplies. The crisis between Russia and Ukraine has brought gas supplies in that country by Gazprom to an end (June 2014). The diplomatic situation between the EU and Russia therefore obviously weighs on gas supplies which might be under threat this winter in some Member States where Russia is the only or the main supplier.

Hence energy supplies to a country like Poland – which imports 77% of the gas it consumes – is highly dependent on the development of gas interconnections in the west and the south. To prevent untimely reductions in gas deliveries from the east as between 8th and 10th September 2014 and the ensuing price volatility, the construction of an LNG terminal in Swinoujscie and the acceleration in interconnection work with Germany, the Czech Republic, Lithuania, Denmark and Slovakia are priority. The reversibility of flows and the ability of finding supplies in other European countries, notably Germany,

is helping Poland to achieve larger energy and economic independence.

Various important European papers such as the 2020 Europe Strategy and the conclusions of many European Councils reflect new awareness of the need to strengthen the external aspect of Energy Union and to diversify supply sources in order to be rid of this dependence. Jean-Claude Juncker recalled this himself as he presented his programme's priorities: *"I would like to keep the European energy market open to our neighbours. However if the price of imported energy from the East rises too much, Europe must, either politically or economically, be able to gain rapid access to other supply sources."* This is why it is no surprise that supply security is one of the five main dimensions in the Energy Union project, together with solidarity and trust. Indeed, the Energy Union aims to ensure greater diversification and solidarity between Member States, which includes taking care of those neighbouring countries that are totally dependent on one supplier in the event of supply cuts, as well as greater transparency of intergovernmental agreements between Member States and third country energy suppliers.

These ambitions are moving in the right direction yet, since the first oil crisis in 1973, these two goals have struggled to become a reality.

Europe has to master its future as far as energy is concerned and act to develop true energy diplomacy. Partnerships should be made in this direction with producer countries. It seems pertinent to think about the best way to pool bilateral energy supply agreements so that the Union can play a role in the latter to provide coherence in terms of European regulation, of speaking with one voice during negotiations with third countries and of having greater influence over suppliers.

Moreover, it is urgent to develop the means of production and interconnection and to achieve the internal energy market.

HEAPS OF INVESTMENTS, NOTABLY IN NETWORKS, TO BE TRANSFORMED INTO A COMMON INDUSTRIAL PROJECT

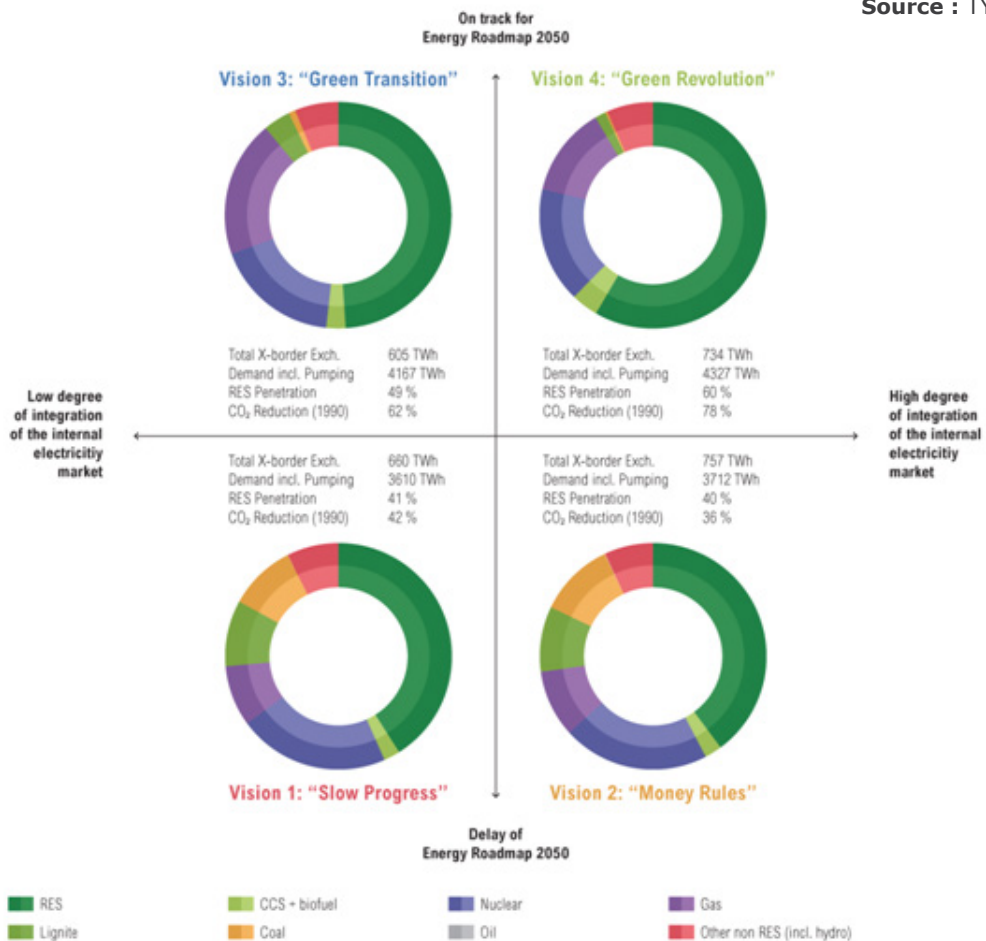
The European Council of 23rd and 24th October 2014 highlighted the *"vital importance of a fully operational and connected internal energy market."* It deemed the

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guarantee of good gas and electricity network inter-connections a priority, together with the guarantee of the synchronization of energy activities. In order to achieve this aim, the agreement notably provides "an urgent 10% minimum electricity interconnection objective, by 2020 at the latest at least for the Member States which have still not achieved a minimum level of integration". The 2020 10% minimum electricity interconnection goal, i.e. below the 15% demanded by Spain and Portugal which are isolated due to their peninsular nature and which have found no outlets for their surplus production of renewable energies, will be brought up to 15% of interconnection by 2030; this is due to be achieved thanks to the completion of projects of common interest. Energy Union repeats the 10% interconnection goal and is determined to deploy a strategy to integrate completely the internal electricity market [8].

Investment requirements in networks will be very high. The European Commission plans that 400 billion € will have to be invested in distribution networks by 2020. For its part in its 10 Year Network Development Plan [9] the European Network of Transmission Operators deems investment requirements at 150 billion € by 2030, which is equivalent to 50,000km of lines to be built or to strengthen, to which we must add the development of major pan-European projects. Thousands of market situations taking on board all types of unknowns that might affect the electricity system have been simulated. Both frequent and rare situations have been calculated in this plan to test the resilience of the networks and to define corrective measures, if necessary. These situations are typically winter or summer peaks with solar and/or wind production (every low or very high). These in-depth studies have been undertaken to take in four contrasted "visions" until 2030 illustrated in the diagram below:

Source : TYNDP 2014



8. Communication 25th February 2015 «Achieving the 10% interconnection goal in the electricity sector. A European electricity network ready for 2020».

The map below summarises the contrasted situation in this regard: borders where the project portfolio is sufficient in covering target capacity in all “visions”

are shown in green; those where it is insufficient in none of the “visions” are shown in red, the others in orange [10].

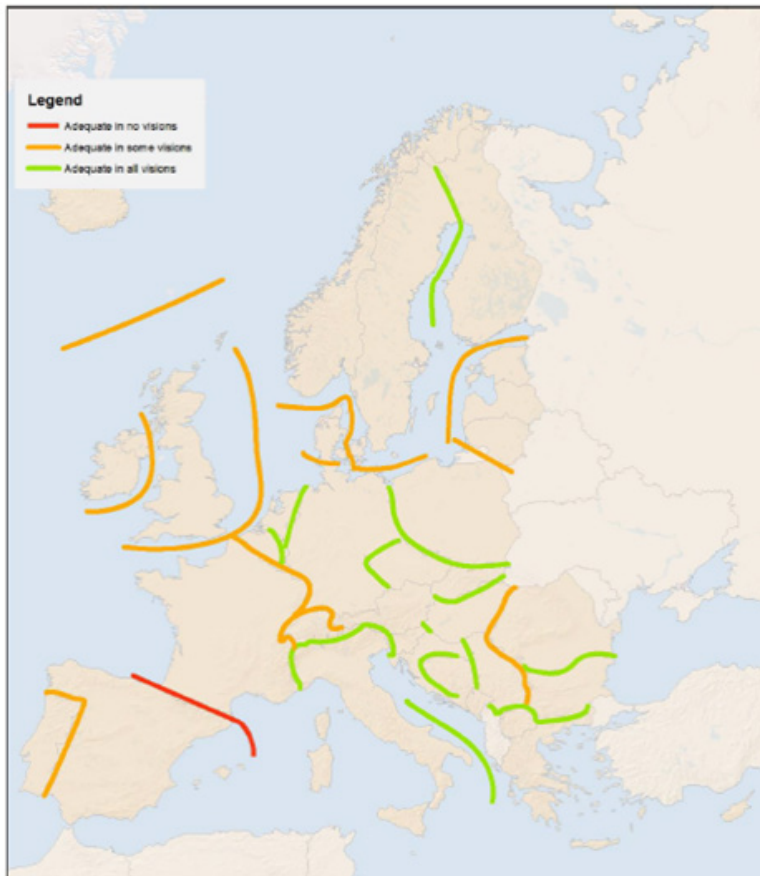


Figure 0-4 Transmission adequacy by 2030

Source : TYNDP 2014

Investments are proving to be vital in certain strategic cross-border infrastructures. As regard gas, this involves the Baltic States, Central and South Eastern Europe. As regard electricity, it involves the Iberian Peninsula, Ireland, the UK and the eastern hub. Given the number of infrastructures to deploy and the delays accumulated in this regard, supply security will also require massive investments in smart networks. These investments involve more particularly electricity distribution networks, which will now play a central role in supply security and the implementation of energy transition. Investments in

distribution have to cover the renewal of assets, their enhancement to take in renewable energies [11] and new uses such as electric cars, link up to new producers and consumers, as well as improvement in supply quality.

Investment is a vast project, whilst it is proving hard to complete infrastructures on time. Indeed three stumbling blocks slow their development significantly: red-tape, “mitigated” acceptance by the public which often finds refuge in the Banana [12] or Nimby [13], and the instability of the regulatory framework.

9. 10 Year Network Development Plan 2014 (TYNDP 2014).

10. Of course to this map we must add « congestion » internal to the countries (e.g.: electricity transit issues between the North and South of Germany or in terms of gas between the South and the North of France).

11. 95% of renewable energy installations are link to the distribution network.

12. Build Absolutely Nothing Anywhere Near Anyone.

13. Not in my backyard.

AFFORDABLE, COMPETITIVE ENERGY

Europe is a paradox: wholesale energy prices are dropping but retail domestic consumer prices are rising. In fact prices are divided into three parts: supply, transmission via networks and finally taxes and support policies, notably for renewable energies.

The EU average in 2015 is estimated at 75€/MWh in terms of supply, 55€/MWh in terms of the network and 80€ MWh in terms of taxes and subsidies. For several years user price increases have mainly been due to tax increases, and subsidies granted to renewable energies [14].

Since 2008, increases in energy bills totalled 36% for industrialists in France [15] and nearly 23% for residential consumers. The phenomenon has been even greater in the UK which led Labour to advocate price freezes.

Conversely renewable energy subsidies have mechanically reduced wholesale market prices over the last few years, which is affecting the profitability of some major European energy businesses, their capacity to invest and also the profitability of many thermal plants which are necessary however for the security of supplies.

A reminder however about the economic benefits of linking quantifiable and “opposable” markets to all of those for whom Energy Europe is but an empty

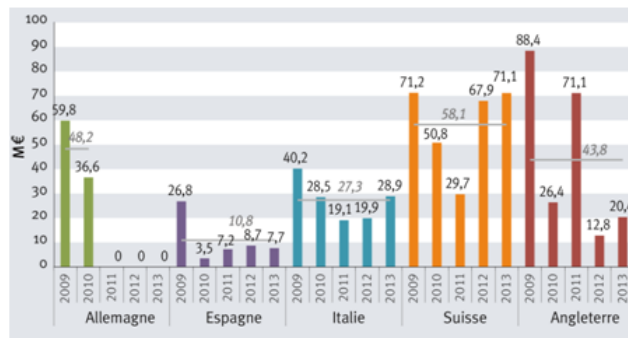
promise: since 2014 17 European countries have been members of a unified electricity market from the Algarve to the North Cape, via the coupling of regions – which is unique in Europe – achieved on the initiative of seven European power exchanges (APX, Belpex, EPEX SPOT, GME, Nord Pool Spot, OMIE and OTE). The European electricity markets can purchase and sell electricity from one day to the next in all European countries that are linked up within the limits of their electricity interconnection capabilities.

On 4th February 2014 the French electricity market was coupled with those of the Nordic countries (Denmark, Norway, Sweden, Finland, Estonia and Poland) and with that of the UK. Since 13th May 2014 all electricity markets in South West Europe (SOE) and North West Europe (NOE) have been coupled. In addition to enhanced interconnection with the markets of Germany, Austria and Benelux, Italy joined the group in February 2015, representing 75% of Europe’s electricity consumption.

Thanks to the coupling of the markets:

- o Prices in France and Germany were equal to 53% of the time in 2014.
- o The overrun cost on supplies due to inadequate interconnection on some borders was limited to 128 million € in 2013. In 2009, the same assessment was close to 300 million €.
- o Since the start of Franco-British coupling in 2014 capabilities were used 100% of the time from the lowest price band to the highest.

Estimation of the cost overrun on supply linked to a lack of market coupling between 2009 and 2013



14. Since 2008 for private consumers the network share has increased by 10%, the energy share has decreased by 4% but taxes and subsidies have increased by 31 % (source : Eurelectric).

15. source : www.cre.fr.

Source : CRE 2014

Hence thanks to greater fluidity in exchanges, interconnections between European networks have helped in optimising production by calling on the most “efficient” units. The coupling of the Member States’ markets, via power exchanges and interconnections, is leading to significant, quantifiable economic benefits.

However, although there has been a reduction and a convergence in wholesale energy prices in Europe, thanks to the liberalisation of the markets, this reduction has hardly been noticed by households, given national taxation policies and support to renewable energies. Since these are significantly different from one country to another, price disparity for end users is high, whilst average wholesale prices often vary very little per MWh. Hence the price paid by a German consumer is nearly twice that paid by a French household. Price differences also lie in different pricing systems, the function of supply costs (producer), electricity transmission (network management) and energy taxation.

The lack of any European regulation mechanism in this area is preventing a real convergence of final prices of electricity for households in Europe.

CONCLUSION

The European Parliament estimated the cost of not undertaking Energy Europe to a total of 50 billion € per year [16]. This just shows how big the project which lies before us is, both in terms of the Member States sharing the path to achieve the 2030 goals and also the rationalisation/optimisation that we might achieve via common practices.

“A project of historic dimension [17]”, “the most ambitious in the energy sector since the creation of the Community of Steel and Coal [18]”, Energy Union is surely laying down the most promising foundations. This path is the right one to follow, taking up the one we set out with Jacques Delors, that of a “European Community of Energy [19]”.

We would like to see the emergence of this “Energy Union”; so that it rises fully to the high expectations European citizens have in this area.

Michel DERDEVET,

Lecturer at the Institut d’Etudes Politiques de Paris,
Professor at the College of Europe of Bruges

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16. Source: European Parliament’s Research Department - March 2014.
17. Martin Schulz, President of the European Parliament – European Summit 19th March 2015.
18. Maroš Šefčovič, Vice-President for Energy Union 25th February 2015.
19. Cf. «L’Europe en panne d’énergie» - Descartes & Co. – May 2009.