Commentary, September 2014

Energy, climate and European reform: 7 propositions for the new Commission

Summary

New challenges require new thinking. The geopolitical, technological, economic and energy landscape facing the incoming Commission is radically different to five years ago. The new Commission needs to implement a strong and forward-looking reform agenda to ensure Europe is responsive to these new realities. In this comment note we outline 7 potentially-transformative propositions to assist the incoming Commission in this task:

1. ***Expand the 'Capital Markets Union' initiative to include citizen finance for clean energy investment.*** Europe faces an energy investment gap as the ability of banks and utilities to finance projects has rolled back. Citizen finance can bring in new capital and lower financing costs.
2. ***Set up a European Energy and Climate Security Observatory to monitor systemic risks.*** Independent oversight is needed to help Europe address an unprecedented risk landscape and to keep it on track to deliver multiple policy objectives.
3. ***Scale up EU infrastructure funding and link it to delivery of energy efficiency commitments.*** A better connected Europe is a more resilient one – but a more coherent approach is needed to prioritise best value investment and prevent stranded assets.
4. ***Deliver an internal market package for demand-side energy services.*** New technologies for flexible demand and decentralised energy have massive growth potential, but need fair and equivalent treatment to the supply side in order to succeed.
5. ***Enact a buildings refurbishment directive.*** Europe's leaky, inefficient building stock needs refurbishing, but the current incremental approach has not worked. The resulting increased dependence on fossil imports jeopardises Europe's energy security.
6. ***Establish regional free trade zones for electricity***. Regional-level solutions for renewables trading, system balancing, and infrastructure priorities can capture the benefits of cross-border resource sharing while retaining flexibility for member states.
7. ***End coal subsidies, and set a timeline for retirement of old coal plant.*** Market-distorting capacity payments for old coal plant undermine investment in cleaner and more flexible power generation, and need to be withdrawn.

Context

The new European Commission should take its seat from 1 November 2014. Its plate is already piled high with unfinished business on energy and climate from the last Commission. It will need to implement the 2030 package (once finally agreed by the European Council), finish the reforms of the ETS, lead negotiations on an international climate regime in 2015, and rapidly implement its new European energy security strategy.

However, the European energy and climate landscape inherited by new Commission president Jean Claude Juncker and his team looks radically different to when his predecessor José Manuel Barroso took office. Despite its formidable early workload, the incoming Commission will need to look beyond its immediate in-tray to drive a longer term reform agenda to respond to the new challenges facing Europe. In particular:

- The current crisis in Ukraine lays bare the deep-seated vulnerability of the EU energy system to external shocks. The continued instability in the Middle East and North Africa underlines that this vulnerability goes beyond dependence on Russian gas. The long-term solution is for the EU to import less fuel – and a plan for how to achieve this needs to become a core part of Europe's energy agenda.
- Europe's energy system is undergoing a rapid transition. Renewables and demand side technologies are no longer marginal, but represent an increasing part of the market and costs have fallen dramatically since the last Commission took its seat in 2009. The challenge is no longer primarily one of promoting technology innovation but rather one of systems integration.
- Energy has become a critical part of debates on European reform and the future of the European project. 'Completing the European energy market' is a shared priority amongst actors at both ends of the political spectrum due to the significant cost savings and competitiveness benefits on offer. However securing the full scope of these benefits requires collective action, and defining the right balance between integration and flexibility will be a major governance challenge.

The European Council has agreed "an Energy Union with a forward-looking climate policy" as one if its top five priorities in its strategic agenda for the next five years.[1] As Europe's energy policy is its primary mechanism to deliver its climate objectives, these two elements need to remain closely aligned. However what exactly this Energy Union will look like – and what steps need to be taken to achieve it – have yet to be spelled out.

The incoming Commission therefore faces a challenging task. It will need to implement an agenda that minimises risks from external shocks, delivers considerable volumes of new investment while avoiding wasted capital expenditure, capitalises on opportunities for cost savings from resource sharing while protecting national interests and independence, and ensures effective oversight and democratic legitimacy.

The seven propositions outlined below form building blocks to help the new Commission deliver against these goals.

[1] http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/ec/143478.pdf

1. Expand the 'Capital Markets Union' initiative to include citizen finance for clean energy investment

Incoming Commission President Jean-Claude Juncker has identified the development of a 'Capital Markets Union' to increase non-banking finance for investment as a priority for the next Commission[2]. This initiative will be of key importance for decarbonising Europe's energy sector. The EU needs to invest over €2.5 trillion in energy over the next decade by some estimates[3]. The vast majority of this investment needs to go into capital-intensive low carbon infrastructure (including power generation, networks and energy efficiency measures), with financing costs making up a significant proportion of overall system costs.

Delivering this investment at an acceptable cost will be challenging. Banks have scaled back their investment to meet solvency requirements imposed after the financial crisis. Utility balance sheets are shrinking, which reduces their ability to carry large-scale investment. There remains too much risk in the energy sector for institutional investors to pick up the slack, except for a limited number of project types. Bringing new sources of finance into the sector is a clear imperative.

Citizen finance (i.e. investment from communities and private individuals) has the potential to play a major role in filling this gap. Citizen finance has been used successfully to fund deployment of onshore wind, solar and even power transmission projects. Crowdfunding models have been used to help clean innovation start-ups get off the ground.

Remarkably, citizen finance can also make projects significantly cheaper to fund. In Germany, citizen investors are willing to accept up to 3 percentage point lower returns on equity than traditional investment.[4] Given the capital intensive nature of most low carbon investments, scaling up citizen finance has potential to make the transition more affordable.

Yet currently opportunities for citizen finance are highly fragmented across Europe, with community and citizen investors frozen out of the majority of new energy investment. Juncker's new Capital Markets Union concept needs to be expanded to go beyond targeting traditional and institutional investors, and address how the role of citizen finance can be scaled up to respond to Europe's clean energy investment needs.

Further reading

- E3G. Financing the decarbonisation of European Infrastructure.
- Bruegel. Improving the role of equity crowdfunding in Europe's capital markets.
- DIW. European Energy Sector: Large Investments Required for Sustainability and Supply Security.

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[2] http://ec.europa.eu/about/juncker-commission/priorities/04/index_en.htm

[3] DIW. European Energy Sector: Large Investments Required for Sustainability and Supply Security.

[4] DIW estimates that traditional profit-driven equity investors have an equity hurdle rate of 7-9%, whereas Bürger investors may be satisfied with 4-6%. Impact of Renewable Energy Act Reform on Wind Project Finance.

2. Set up a European Energy and Climate Security Observatory to monitor systemic risks

The global context in which the European energy system operates is changing faster than at any other time in recent memory. Europe has witnessed major recent geopolitical shifts to its east and south, rapid and uneven technological and economic changes, financial and resource shocks and increasing extreme weather events. All of these shifts have far-reaching implications for the energy sector; none of them were wholly foreseen in the models used to inform EU energy policy.

The uncertainty caused by this risk landscape has a chilling effect on investment. This in turn further amplifies uncertainty and challenges Europe's growth prospects.

EU-level energy security assessments are undertaken for a limited range of potential shocks (e.g. stress-tests for adequacy of gas storage). However no one is currently in charge of monitoring systemic risks. This has worrying parallels to economic crisis, where individually-rational decisions by different actors made the system as a whole collectively vulnerable.

Individual member states are not able to fully manage these risks on their own. The functional interdependence created by the move towards a European market means that disruptions and policy failures within individual member states will have implications across borders. The global nature of the risks requires a collective response. However, energy and climate policy within Europe is currently characterised by inconsistency across geographies, sectors and levels. This is exacerbated by optimism bias, in which it is assumed that policies will succeed without a full evaluation of that risks and problems that lead to policy failure.

The solution is neither a wholesale concentration of responsibility at European level nor repatriation of powers to member states, but rather to improve the robustness and evidence base of decision-making at all levels. Europe needs to get better at managing the 'known unknowns' and at adapting to the 'unknown unknowns'.

To improve its approach to risk management and the quality of decision making, the EU should set up an independent European Energy and Climate Security Observatory. The new institution would be responsible for:

> Horizon-scanning for potential risks to delivery of EU and member state energy and climate objectives, drawing on a full range of scientific, economic, security, foreign policy, and technological expertise.

> Modelling and assessment to test the robustness of Europe's energy policy and decarbonisation pathway against a full range of external shocks and extreme scenarios.

> Independent evaluation of the collective resilience to this risk landscape of the national energy plans produced as part of the 2030 climate and energy framework.

> Submission of recommendations to both the European Council and European Commission on EU- and national-level actions to manage risk and increase resilience.

Further reading

- E3G. Energy Governance in an Uncertain World: The need for a strategic approach to manage risk. (forthcoming)

3. Scale up EU infrastructure funding and link it to delivery of energy efficiency commitments

Cross-border electricity and gas infrastructure networks are critical for enabling the sharing of resources between member states, a key source of resilience and responsiveness. The EU faces considerable infrastructure development needs, in the order of €210 billion to 2020 – yet on current trends, only half of this will be delivered through standard regulated and commercial investment. Projects that cross multiple jurisdictions, utilise innovative technologies or approaches or face high levels of risk may require additional public financing in order to proceed. In recognition of this challenge, the European Union has set up a new Connecting Europe Facility under the EU budget. This allocates €5.85 billion to support European priority 'projects of common interest', either through grants or through financial instruments. This is a welcome intervention, although the amount of funding on offer represents only 3% of the overall volume of investments required.

A better connected Europe is a more resilient one. The EU should scale up its infrastructure funding. There are two options for achieving this. The first would be to increase the proportion of the Connecting Europe Facility budget allocated to energy – for example by reallocating part of the €26 billion currently allocated to transport[5]. The second is for member states to increase the capitalisation of the European Investment Bank and scale up the EIB's capacity for using financial instruments to support EU infrastructure projects.

The most effective way of meeting Europe's infrastructure financing challenge, however, is to reduce the need for new infrastructure in the first place, through delivery of energy efficiency measures. At present European support for energy infrastructure is out of line with its own policies on energy efficiency. There are massive inconsistencies in how projects are evaluated – with gas pipeline projects evaluated against a scenario with 72% higher gas consumption than would be the case if the proposed 30% energy efficiency target is met. There is a serious risk of wasting public money on 'white elephant' projects that would become stranded if EU efficiency goals are delivered.

To achieve best value for the limited public money available, efficiency measures should be prioritised over new infrastructure investments where they are cost-effective, and access to infrastructure funding under the CEF should be conditional on delivery of member state energy efficiency plans. This will prioritise best value capital expenditure, while preventing stranded assets and avoiding crowding out funding for critical long term infrastructure projects in member states who are delivering on their agreed efficiency goals.

Further reading

- E3G. Energy security and the Connecting Europe Facility: ensuring public value for public money. (Forthcoming).
- E3G. An EU Energy Union demands responsibilities as well as rights.

[5] Transport demand in the EU is in long-term decline, suggesting that there may be scope for reprioritisation of transport infrastructure funding.

4. Deliver an internal market package for demand-side energy services

Europe's internal energy market is underpinned by three legislative 'energy packages' aimed at integrating EU markets. These packages, however, have focused primarily on the supply side (large scale electricity generation and power and gas networks). Markets in demand side resources – including electricity demand reduction, smart technologies for shifting power demand, and decentralised generation – can bring down the costs of energy systems, bolster energy security and reduce the need for investment in new power generation or for capacity payment schemes. However, demand side markets remain fragmented and underdeveloped, and the potential resources have not been exploited to their potential.

Recent technological innovations plus the increasing need for power system flexibility now mean that the potential for demand side resources is enormous. Many investment analysts point to the potential for dynamic growth in markets in demand-side and decentralised energy technologies – from smart appliances able to modulate the timing of electricity consumption, to home energy management systems (e.g. Google's Nest) to smarter power distribution grids through to domestic solar systems connected to batteries and electric vehicles[6]. This potential for growth far outstrips that of conventional electricity generation, and offers the prospect of major energy savings and emissions reductions.

But this potential will not be realised unless it is underpinned by a supportive market framework. The European Commission should put in place a new internal market package for demand-side energy services. This should aim to kick start new markets in demand side services and technologies across Europe, ensure demand-side resources are enabled to compete on a fair and equivalent basis to the supply side, and make sure that the requisite enabling data and energy infrastructure is delivered.

Further reading

- E3G. Electricity demand side measures: why we're still failing and how to succeed.
- E3G. Driving lower energy bills and security of supply: The case for demand side electricity market reform.
- UBS. European utilities: expect a smart grids boom.
- UBS. Will solar, batteries and electric cars re-shape the electricity system?
- Citigroup. Energy 2020: the revolution will not be televised as disruptors multiply.

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[6] UBS: Will solar, batteries and electric cars re-shape the electricity system?; Citigroup: Energy 2020: the revolution will not be televised as disruptors multiply.

5. Enact a Buildings Refurbishment directive

The European Union has introduced mandatory energy efficiency standards for new buildings, buildings undergoing major renovation, vehicles, and a range of consumer products and appliances. But one of the lowest hanging fruits – Europe's leaky and inefficient existing building stock – remains unpicked. This increases European dependency on imported fossil fuels and needlessly puts energy security at risk.

75% of buildings standing in the EU today were built during periods with no, or minimal, energy-related building codes and three quarters of those are expected to still be in use in 2050. The building sector has the largest longer-term, cost-effective emissions saving potential of any industrial sector.

Yet rates of buildings refurbishment across Europe remain significantly below their economic potential, with existing regulation relying on incremental and voluntary approaches. Estimates suggest that € 60-100 billion[7] needs to be invested annually in EU buildings to achieve Europe's 2020 energy efficiency targets yet current investment levels are below half of these requirements.

A Buildings Renovations Directive which gives existing buildings the same ambitious legal frameworks as those in place for new buildings at EU, national, regional and local levels is needed. This Directive should focus on mainstreaming efficiency through use of mandates and regulations to take the market to scale across Europe.

A concerted European building retrofit programme could prove transformational for Europe's energy security, and reduce gas consumption by the equivalent of 80% of the EU's current gas imports from Russia. Such a retrofit programme would also have a strong social dimension by helping to reduce energy bills: in 2012, 11% of EU citizens, equivalent to 56 million people, were unable to adequately heat their homes and were living in fuel poverty.[8]

Further reading

- E3G. Energy efficiency as Europe's first response to energy security.
- E3G. Making Sense of the Numbers: How is Europe doing on Energy Efficiency and What does the EU 2030 target mean? (forthcoming)
- BPIE. Europe's Buildings under the Microscope.
- EEFIG. Energy Efficiency – the first fuel for the EU economy.

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[7] COM (2012) Consultation Paper: "Financial Support for Energy Efficiency in Buildings"; and EURIMA. (2012). *Financing Mechanisms for Europe's Buildings Renovation*. Retrieved from: http://www.climatestrategy.es/index.php?id=27

[8] European Commission, Energy Efficiency and its contribution to energy security and the 2030 Framework for climate and energy policy

6. Establish regional free trade zones for electricity

A competitive and robust European energy system needs to be able to take advantage of the significant cost savings and security benefits to be gained from cross-border resource sharing. Benefits of a more integrated European power system have been estimated to be in the region of €426 billion from 2020 to 2030 alone.[9] However, despite some progress in implementing market coupling, the EU remains some distance from a truly integrated European market. Infrastructure planning and development, system operation, renewables and capacity support schemes, and many other aspects fundamental to market functioning remain nationally-based, with considerable variation between countries. It is unlikely that fully European approaches to these issues will be instituted in the near term.

In this context, regional approaches may offer opportunities to capture much of the value of cross-border resource sharing while still reflecting national specificities and priorities. A number of regional initiatives have already been initiated, ranging from the North Seas Countries Offshore Grid Initiative to the Pentalateral Energy Forum. Yet these tend to be under-resourced, unevenly developed and often lack a formal institutional footing – and so have not yet fulfilled their full potential.

A more concerted approach to regional energy market governance is now needed. The European Commission should work with member states to develop regional free trade zones for electricity. These should incorporate:

- Regional system operation, so that power flows follow physical limits rather than geographical boundaries;
- Agreements on cross-border renewables trading to enable new generation to be located in the most cost effective locations; and
- An enhanced role for regional groups in setting infrastructure priorities.

The North Seas Region is well placed to pilot the concept of regional free trade zones for electricity. It has a track record of regional collaboration, significant infrastructure needs for connecting offshore wind farms and interconnections, and considerable cost-savings potential from a more coordinated approach. However similar zones could also be established in other regions including the Baltic, Mediterranean and South East Europe.

Further reading

- ECF, E3G, RAP, and Client Earth. From Roadmaps to Reality: A framework for power sector decarbonisation in Europe.
- E3G. Securing options through the strategic development of North Seas Grid infrastructure.
- E3G, New Policy Frameworks for Electricity Infrastructure Cooperation in South
- East Europe
- CEPS/Clingandael. Exploring a regional approach to EU Energy Policies.

[9] European Climate Foundation et al. Power Perspectives 2030.

7. End coal subsidies, and set a timeline for retiring old coal plant

Europe has a coal problem. Coal is among the most polluting fuels for power generation. Its use was therefore expected to decline as a result of the EU ETS establishing a carbon price and new generation technologies taking the place of the oldest and least efficient coal plant. Instead of falling, however, coal use has risen over the last 5 years. Cheap coal import prices and an over-allocation of ETS permits has meant that the expected coal-to-gas switching has not happened – and forecasts show that the EU-ETS, even if reformed, will not lead to large-scale coal-to-gas fuel switching until the 2030s at the earliest.

This is problematic. To European citizens, the air pollutant emissions from coal generation have serious negative impacts on human health. Diplomatically, the increase in coal use in Europe undermines European influence in international climate negotiations: we will be unsuccessful in convincing China, India and the US to reduce their coal use if coal consumption continues to rise here. From an economic and security stand point, the continued presence of amortised coal plant on European power markets crowds out space for investment in newer, cleaner electricity generation – and this investment hiatus sets up potential energy security problems in future.

Despite these problems, a number of governments are working not to shut the oldest and most polluting old coal plant, but to prolong their lives through capacity payment subsidies. This risks further distorting investment signals for cleaner generation and for the more flexible capacity required as greater volumes of variable renewables come onto the system. Different schemes operating in different countries can also undermine the operation of the European market.

In order to deal with Europe's coal problem, the European Commission needs to take two steps. First, it must end subsidies for coal in all its forms. Member states are already legally obliged to phase out subsidies to coal mining by 2018. The Commission should now enact regulation to prevent national capacity payment systems from being used to prolong the life of uneconomic old coal plant and distort market operation.

Secondly, the Commission should set out a clear timeline for the closure of old coal plant (or retrofitting them with carbon capture and storage equipment), in the form of an Emissions Performance Standard for both existing and new fossil plant. This would provide greater certainty to owners of existing high carbon plant who need to efficiently plan the investment glide-path to closure, to investors of new lower carbon generation who need clarity over the future market opportunity for their assets, and to governments in ensuring delivery of carbon targets and avoiding economic exposure to potentially high carbon prices.

Further reading

- E3G. Keeping coal alive and kicking: Hidden subsidies and preferential treatment in the UK Capacity Market.
- E3G. Emissions performance standards may lower the cost of decarbonisation.
- CAN Europe, HEAL, WWF, EEB and Klima Allianz. Europe's Dirty 30: How the EU's coal-fired power plants are undermining its climate efforts.