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Electricity Policy Developments in Europe

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Structure of my talk

- EU policy objectives
- Current regulatory framework
- Proposed changes w.r.t:
  - Market design
  - Renewables policy
  - Energy efficiency
  - Other issues

Article 194 Lisbon Treaty

1. In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:

(a) ensure the functioning of the energy market;

(b) ensure security of energy supply in the Union;

(c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and

(d) promote the interconnection of energy networks.

2. Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph 1. (…)

Such measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply, without prejudice to Article 192(2)(c).

(Article 192 (2) (c) requires Council unanimity on “measures significantly affecting a Member State's choice between different energy sources and the general structure of its energy supply.”)

EU Policy Objectives (1)

According to the Lisbon Treaty, the main aims of the EU's energy policy are to:

- ensure the functioning of the energy market;
- ensure security of energy supply in the Union;
- promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
- promote the interconnection of energy networks

The 2020 Energy Strategy defines the EU's energy priorities between 2010 and 2020. It aims to:

1. reduce greenhouse gases by at least 20% (vis-à-vis 1990),
2. increase the share of renewable energy in the EU's energy mix to at least 20% of consumption,
3. improve energy efficiency by at least 20% (vis-à-vis 2005).

Comment: Objectives 2 & 3 not only unnecessary, but inducing inefficiencies.

EU Policy Objectives (2)

The following objectives should be met by 2030:

- a binding EU target of at least a 40% reduction in greenhouse gas emissions by 2030, compared to 1990
- a binding target of at least 27% of renewable energy in the EU
- an energy efficiency increase of at least 27%, to be reviewed by 2020 with the potential to raise the target to 30% by 2030
- the completion of the internal energy market by reaching an electricity interconnection target of 15% between EU countries by 2030, and pushing forward important infrastructure projects

- Between 1990 and 2012, the EU cut greenhouse gas emissions by 18%,
- In 2014, the projected share of renewable energy in the gross final energy consumption has been 15.3%, up from 8.5% in 2005
- Energy efficiency is predicted to improve by 18% to 19% by 2020.

Current Regulatory Framework

The regulatory frameworks governing electricity markets in Europe are very heterogeneous w.r.t:

- Retail and wholesale price regulations (17 of the EU-28 still regulate prices or put caps on prices, either wholesale or retail or both),
- Subsidies levels and schemes (feed-in tariffs, market premia, investment support, tradeable renewable quotas) to both renewables and traditional (fossil and nuclear) electricity production,
- extent and organisation of capacity mechanisms to safeguard security of supply,
- regulation of both transmission and distribution networks,
- degree of market coupling between member states,
- types and levels of energy taxes, and
- markets are, by and large, national markets.

Market structures (vertical and horizontal) also vary heavily between member states.

Previous EU Legislative Packages

The **first liberalisation directives** were adopted in 1996 (electricity) and 1998 (gas) and should be transposed into member states' legal systems by 1998 (electricity) and 2000 (gas).

The **second liberalisation directives** were adopted in 2003 and were to be transposed into national law by Member States by 2004, with some provisions entering into force only in 2007). It required all electricity and gas markets to be open for consumers to choose suppliers.

Third package (2009):

Core elements include (ownership or legal) unbundling, the establishment of a national regulatory authorities (NRA) for each member state, and the Agency for the Cooperation of Energy Regulators (ACER) which provides a forum for NRAs to work together

The European Commission‘s „Winter Package“

Fourth Legislative Energy Package (2016):

On 30 November 2016, the European Commission published its “**Clean Energy For All Europeans**” package (the “Winter Package”), which consists of numerous legislative proposals, with the aimed of further integrating the internal market for electricity and implementing the so-called *Energy Union*.

The Winter Package is part of an overall package of more than 40 planned measures.

Objectives of the „Winter Package“

Key aims:

- to establish a common power market design across the EU and to ensure the adequacy of the EU’s power systems;
- to promote the better integration of electricity produced from renewable sources into the market and assess the sustainability of bioenergy;
- to advance energy efficiency, energy cleanliness and energy performance, including for buildings, in the industry (eco-design), in innovation and in transport, in order to achieve the EU’s climate goals; and
- to implement rules on the governance of the so-called Energy Union.

Key Areas of Interest within the „Winter Package“

- Rules on a power market design,
- Rules on the promotion and integration of renewables and sustainability of bioenergy
- Rules on energy efficiency and performance,
- Rules on the institutional framework and
- Miscellaneous issues.

Electricity Market Design

Electricity market design is intended to better fit future needs, accounting for:

- more variable and decentralised production,
- an increased interdependence between systems cross-border and
- further increasing opportunities for consumers to participate in markets through demand-side response, auto-production, smart metering and storage.

Electricity Market Design

Key principle: Restoring price signals to electricity markets

Main thrust of past Commission energy policy has been to try to give prices free rein, but this has been frustrated by three main distortions:

- many member states (17 of EU-28) still regulate or put caps on prices, either wholesale or retail or both,
- heavy subsidies for electricity from renewable energies whose zero marginal cost disrupts the traditional cost-based 'merit order' approach,
- various national capacity mechanisms.

The Commission hopes to return to a market "allowing electricity to move freely to where it is most needed when it is most needed via undistorted price signals". By undistorted, the Commission means permitting scarcity pricing that reflects nothing but the balance of available supply and demand.

Scarcity pricing is central to the Commission's thinking because it could potentially be a triple win – encouraging investment, enabling demand response and lessening the need for capacity mechanisms.

Electricity Market Design: Key Measures (1)

Member states may introduce capacity mechanisms, but only if (a) they have implemented market reforms that might make a capacity mechanism unnecessary and that (b) if they are justified by a "European resource adequacy assessment" conducted on the basis of a shared methodology. When applying a capacity mechanism, (to the extent allowed), Member States will have to have a reliability standard in place to indicate their desired level security of supply. Capacity mechanisms (other than strategic reserves) will have to allow for cross-border participation, provided there is a network connection.

The proposal also contains design principles for capacity mechanisms, ensuring amongst others, that these do not create unnecessary market distortions or limit cross-border trade, and not go beyond what is necessary.

Capacity mechanisms existing on the date of entry into force of the Regulation (to be confirmed) will have to be adapted to comply with certain of the new requirements (including on cross-border participation and design).

Comment: Capacity mechanisms very likely to induce major inefficiencies.

Electricity Market Design: Key Measures (2)

The Commission also released its final report on its sector inquiry into capacity mechanisms. In the Commission's view, the ideal capacity mechanism should:

- be open to all potential domestic and foreign capacity providers, with specific attention to new entries;
- feature a competitive price-setting process that ensures a competition on prices to minimise the price paid for capacity;
- ensure incentives for reliability and investment in interconnection; and
- be designed to coexist with electricity scarcity prices to avoid domestic overcapacity and trade distortions.

At last minute the Commission also decided to impose an emission performance standard of 550 g/kwh on any new generation plant initiated after 2020 and included in a capacity mechanism, and on any generation plant, new or old, included in a capacity mechanism after 2025. Ok for modern gas plants, but not for coal plants, unless they are fitted with carbon abatement.

Rather senseless symbolism, given EU ETS and the limited use of reserve plants.

Electricity Market Design: Key Measures (3)

Introduction of rules on balancing markets, both for energy and capacity, including free access by all market participants individually or by aggregation. Market participants will be held financially responsible for imbalances they cause, based on marginal pricing and real time value.

Dispatching of power generation and demand-response must be non-discriminatory and market-based. Priority dispatch is still allowed for small renewables or high-efficiency cogeneration installations with an installed capacity of less than 500 kW, and for demonstration projects for innovative technologies.

Priority of market-based re-dispatching or curtailment. Producers of electricity from renewables or high-efficiency cogeneration will only be subject to downward non-market based re-dispatching or curtailment if no other alternative exists and subject to financial compensation by the system operator requesting the curtailment or re-dispatching.

Electricity Market Design: Key Measures (4)

Congestion must be solved with non-transaction based methods (i.e., not involving a selection between market participants). Capacity must be allocated through explicit auctioning or implicit auctioning, including both energy and capacity. Continuous trading is allowed for intra-day.

Distribution tariffs must reflect the cost of use of the distribution system by system users, including so-called “active consumers”.

Rules on priority grid access for renewables will be removed.

Electricity Market Design: Key Measures (5)

Another key element of the package is to enable consumers to participate in decentralised markets created by the decarbonisation process. The proposals in this area are designed to ***remove any barriers to consumer participation*** and to give them better information about the options, for instance:

- Consumers and communities of consumers will be entitled to generate electricity for either their own consumption, store it, share it, or to sell it back to the market.
- Proposals to accelerate the deployment of smart meters and ensure access to dynamic (real time) electricity price contracts. Consumers will be able to request a smart meter from their energy supplier and benefit from market-based energy prices.
- Improve consumer access to reliable and clear information on the best deals in the market, using certified online price comparison tools.
- The Commission wants consumers to be able to switch suppliers more easily, and proposes to restrict the use of switching fees.
- Demand response will also be facilitated by the removal of restrictions on the ability of suppliers to restrict access to markets or aggregators.

Renewables (1)

The Commission has not been successful in persuading member states to open their subsidy schemes to each other's renewable generators in the interest of efficiency. It has twice tried, and twice failed, to persuade EU governments to adopt a harmonised EU-wide subsidy system; Subsidy sharing, even with neighbours, still seems a bridge too far.

Existing legislation encourages member states to agree on joint renewable projects with each able to count part of the project's output towards its respective renewable energy target. However, so far only Norway (out of the EU but as a member of the European Economic Area inside the EU energy market) and Sweden have a joint subsidy scheme, and there is a plan to pilot a joint Danish-German subsidy auction for solar power.

Now it seems the Commission is trying to get a bit tougher. Its draft revision of the renewable energy directive contains the provision that "member states shall ensure that support for at least 10 per cent of the newly-supported capacity in each year between 2021 and 2025…is open to installations located in other member states", rising to 15 per cent in the 2026-2030 period.

Renewables (2)

Another element of the package is a proposal for a revised renewables directive. National renewables targets will be dropped after 2020 a new Europe-wide target of a 27 percent share of renewable energy by 2030 is proposed

Renewables schemes in electricity are to be more responsive to market prices and competitive tenders; and there is to be a larger cross-border element.

The declared aim is also that close to half of the contribution to the EU's renewables target should come from heating and cooling by 2030.

Two main problems in relation to transport and heating:

- given the diversity of the sector (heating in particular), it is difficult to apply an obligation on suppliers in the same way as for electricity;
- the main renewables in both transport and heating are of biological origin and using them tends to create environmental and sustainability problems.

Renewables: Key Measures

- The share of renewable energy in the heating and cooling sector is supposed to increase by 1% each year.
- General rules on support mechanisms for electricity generation form renewable sources: requirement that support will be designed as to integrate renewables in the electricity market and should be granted in an open, transparent, competitive, nondiscriminatory and cost-effective manner.
- A new provision on the stability of financial support ensures that the level of and conditions attached to the support of renewable energy projects are not altered in a way that negatively impacts the rights conferred or the economics of supported projects.
- Member States must enhance predictability for investors by defining and publishing a long-term schedule in relation to the expected allocation of support, covering at least the next 3 years.

Energy Efficiency: General Measures

- Confirmation of a 30% energy efficiency target for 2030.

- No national binding targets for the member states, but indicative national targets will be notified to the Commission, expressed as absolute levels of primary and final energy consumption in 2020 and contributions towards the Union's 2030 targets.

- Energy suppliers are required to reduce sales by 1.5 percent a year or, alternatively, to show that they have provided customers with energy-saving advice or equipment enabling these customers to do with 1.5 percent less energy than they would otherwise have consumed. This sales reduction obligation for suppliers is not required though in countries, such as Germany, which already has adequate energy saving programmes in the Commission's view.

Energy Efficiency: Buildings

- Buildings account for 40 per cent of all energy used in the EU,
- The *Energy Performance of Buildings Directive* was one of the EU's first efficiency measures, requires member states to have performance standards for all large new buildings or similarly sized buildings undergoing renovation.
- The Commission backed away from compulsory renovation measures of existing housing stock – on the understandable grounds that this would be seen to breach subsidiarity at a politically fragile time for the EU.
- **Heating** is, if not provided by means of electricity, **not included in the EU ETS**. In many countries, gas and oil are mainly used for heating purposes.
- At the current rate of renovation of housing stock, which among the EU-28 ranges from 0.4 to 1.2 per cent, Europe's housing stock would take a century to 'turn over'.
- A new regulation is that from 2020 larger buildings will have to provide electric car charging points in their garages.

Governance

- The draft directive on the Internal Electricity Market proposes a strengthening the Agency for the Cooperation of Energy Regulators (ACER).

- ACER would still remain as essentially a coordinator of the actions of national regulators but it would have additional powers and responsibilities in areas where different national approaches could undermine progress towards the internal market.

- Among other things, the Commission notes that interconnectors between national systems are currently used at a level which is not only well below their capacity but also below what would be expected in a freely operating market.

- Unlike in telecommunications, the EU is not campaigning for a central EU regulator.

Miscellaneous: Electric Cars

Distribution line companies will not be allowed to develop charging and storage solutions, unless certain conditions are fulfilled, including

- lack of interest by other parties (with the potential interest of other market participants being reassessed at least every 5 years),
- (for storage) the use being limited to securing the efficient, reliable and secure operation of the distribution system,
- approval by the national energy regulator and
- compliance with the unbundling provisions.

Problem: This regulation may seriously damage investment incentives.

Final Conclusions

Energy policy in the EU is quite a mess. Too many objectives, no clear priorities.

Renewable policy is, by and large, an utter disaster. Very expensive, no reduction in emissions beyond EU ETS, massive allocative inefficiencies.

The EU helps preventing the next subsidy trap, called capacity mechanism.

Not enough focus on improving EU ETS (e.g., by including transport und heating sectors).

Not enough focus on strengthening competition in the market by interconnecting the mostly national markets.

Thank you for your attention!

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