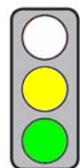


## MAIN ISSUES

**Objective of the Communication:** The Commission provides information regarding measures to develop "smart grids".

**Parties affected:** Private and commercial consumers, energy suppliers, network operators.



**Pros:** (1) With smart grids, the demand for electricity can be better coordinated to align with power generation.

(2) The Commission takes into account data protection concerns.

(3) The standardisation plans initiated by the Commission prevent expensive parallel developments and restrictions in the joint use of components.

**Cons:** Investment costs should not be covered through regulated tariffs of network operators but through the profits made by power producers from selling electricity.

## CONTENT

### Title

**Communication COM(2011) 202** of 12 April 2011: **Smart Grids**: from innovation to deployment

### Brief Summary

#### ► Objective

The Commission wishes to expedite the set-up of "smart grids" in the EU and will therefore draw up "appropriate measures" by the end of 2011.

#### ► Features of "smart grids"

- The aim of "smart grids" is to coordinate the behaviour of all grid users (energy suppliers, network operators, consumers) in order to ensure an "economically efficient, sustainable power system" (p. 2).
- Smart grids can:
  - by way of "intelligent" metering and monitoring systems ("smart meters") reflect accurately the actual energy consumption volume and the actual time of use, and
  - transmit digital data, e.g. on prices or consumption, between users and suppliers through the information and communication technology (ICT).
- The Commission sees the following advantages to smart grids:
  - The consumer can better control and manage their power consumption.
  - Time-dependent electricity prices stimulate efficient electricity consumption and thus energy savings.
  - A more targeted use of the grid's transport and storage capacities increases the security of the networks and reduces costs.
  - Electricity from renewable energies can be fed into the grid more easily.
  - Companies can offer new services through smart power grids.
  - The development of the required network technology increases the worldwide "technological leadership" and the competitiveness of the EU.

#### ► Development stage and investment needs

- The development of smart grids in the EU is still in the "early stages"; currently only 10% of households have "smart meters" installed (p. 3).
- Within the last ten years, 5.5 billion euros have been invested EU-widely in 300 projects to set up smart grids, of which 300 million euros derived from the EU household.
- The European Electricity Grids Initiative (EEGI) estimates the investment needs for the development of smart grids for the period of 2010-2018 at around 2 billion euros (p. 11).

#### ► Regulatory incentives

- The deployment of smart grids should "first and foremost be market-driven", i.e. financed by network operators as the "key beneficiaries" (p. 8).
- In order to stimulate investments, the Commission calls for an increased financial participation of consumers (p. 4).
- Regulatory incentives are to encourage network operators to adopt a business model that is not based on additional sales ("volume-based business model") but rather on efficiency gains and lower peak investment needs ("quality- and efficiency-based model").

- The Commission wishes:
  - to develop quality-based and efficiency-based regulatory incentives, in particular in revising the Energy Service Directive [2006/32/EC; cp. Amendment Proposal COM(2011) 370] and the framework for defining a network code and an implementation act for tariffs;
  - to set guidelines for the introduction of smart meters in Member States and related cost-benefit-analyses;
  - to call upon Member States to draw up action plans targeted at the set-up of smart grids;
  - to support the coordinated set-up of smart grids at European and regional level under the framework of “Regional Initiatives” and the European Network of Transmission System Operators for Electricity, ENTSO-E (s. [CEP-Kompass EU-Energiepolitik](#), in German only, p. 18 and 20).

#### ► Retail markets

- According to the Internal Electricity Market Directive (2009/72/EC; s. [CEP Policy Brief](#)), Member States must:
  - create “well-functioning and transparent retail markets” (Art. 41);
  - guarantee consumers access to consumption and invoice information (Art. 3 (5));
  - facilitate a change of provider within three weeks (Art. 3 (5));
  - allow those providers of energy services which help consumers to better manage their consumption behaviour easier access to the grid (Art. 32).
- The development of smart grids is to “encourage” consumers to change their behaviour and turn towards “new smart energy consumption patterns” (p. 10).
- The Commission wishes:
  - by revising the Energy Service Directive [2006/32/EC; cp. Amendment Proposal COM(2011) 370], to introduce minimum requirements regarding the form and content of the provision of information to consumers, their access to information services and demand management (e.g. in-house control of consumption);
  - to monitor the implementation of Member States’ obligations, to create a transparent and competitive retail market for the development of services on the basis of smart grids and metering (e.g. time-of-use pricing and demand response), and, where necessary, to take further measures.

#### ► Development of technical standards

- The Commission has issued a mandate to the European standardisation organisations CEN, CENELEC and ETSI, to establish European standards by the end of 2012 for:
  - the interoperability of smart utility meters (electricity, gas, water and heat);
  - the interoperability of chargers for electric vehicles with all types of electric vehicles and with electricity supply points and
  - an easier implementation of services in the framework of smart grids.
- The Commission wishes:
  - to ensure the timely standardisation, where necessary through a network codex; and
  - to promote the development of ICT standardisation at European and international level.

#### ► Promoting innovation

- The Commission has launched several “initiatives” for the development of smart grids.
  - The “European Technology Platform for Smart Grids” is to create a joint EU vision and research agenda for smart grids.
  - The European Electricity Grids Initiative (EEGI) is to expedite the introduction of technologies for smart grids in respect of the energy and climate policy EU targets in 2020 (s. [CEP-Kompass EU-Energiepolitik](#), in German only p. 10 et sqq.) under the framework of the European Strategic Energy Technology Plan [“SET Plan”, COM(2009) 519; s. [CEP Policy Brief](#)].
  - The “Covenant of Mayors” initiative is to develop measures at regional and local level.
- In 2011, the Commission wishes:
  - to propose new “large-scale demonstrations” for a quick development of smart grids along with “new ways and means to leverage financing” (p. 11);
  - to launch the initiative Smart Cities and Communities under the SET Plan, which is to focus on the various forms of energy use in the electricity, gas, heating and transport sector.

#### ► Data protection

- Network operators, operators of smart metering and energy service companies may process data in smart grids without prior approval from the network users only if this is purely technical and does not relate to an identified or identifiable natural person (“personal data”) (Art. 2 lt. a Data Protection Directive 95/46/EC).
- Currently, an advisory board to the Commission is preparing recommendations for solving the data protection problems of smart grids.

- According to the Commission:
  - EU data protection legislation must not be extended;
  - however, Member States' data protection legislation must possibly be adjusted with respect to intellectual property rights and data access.
- The Commission wishes:
  - to monitor the data protection legislation of Member States and
  - to establish a working group consisting of representatives from the energy and ICT sector in order to evaluate data protection relating to smart grids and to strengthen international cooperation.

### Statement on Subsidiarity by the Commission

The Commission does not address the issue of subsidiarity.

### Policy Context

The Energy Service Directive (2006/32/EC, Art. 13) requires – where technically and economically possible – the introduction of “individual meters” which reflect precisely the actual energy consumption and provide information as to the actual time of use. According to the Internal Electricity Market Directive (2009/72/EC, Annex I sub-para. 2; s. [CEP Policy Brief](#)), Member States are obliged to examine by 2012 the possibility of introducing “smart metering” and, if necessary, to provide them to at least 80% of consumers by 2020.

In its flagship initiative “Resource-efficient Europe” – one of the key targets of its “Europe 2020” strategy [COM(2010) 2020, s. [CEP Policy Brief](#)] – the Commission announced proposals for the setting-up of “smart grids”. The [European Council of 4 February 2011](#) invited Member States to cooperate with European standardisation bodies and the industry to introduce technical standards for chargers for electric vehicles by mid 2011, and for smart grids and metering by the end of 2012. The Commission's roadmap for the transition towards a competitive low-carbon economy by 2050 [COM(2011) 112; s. [CEP Policy Brief](#)] considers “smart grids” a key prerequisite for a future low-carbon electricity system, as they facilitate efficient consumption, increase the share of renewable energies and de-centralised power generation and enable the electrification of transport.

### Options for Influencing the Political Process

Leading Directorate General:	DG Energy
Consultation procedure:	No consultation procedure provided.

## ASSESSMENT

### Economic Impact Assessment

#### Ordoliberal Assessment

The electricity generated from wind and solar power is subject to considerable fluctuation. Yet it is faced with a demand for electricity that until now could hardly react to this fluctuation. **With smart grids, the demand for electricity can be better coordinated to align with power generation.** Thus, a larger amount of potentially producible electricity can be collected, grid stability is heightened and the necessary storage capacity and back-up power plants, as well as the necessary infrastructure investments, are reduced. **As the share in power generation from renewable energies will increase in the EU, the benefits that smart grids provide will increase accordingly.**

#### Impact on Efficiency and Individual Freedom of Choice

**The standardisation mandated** by the Commission **prevents expensive parallel developments and restrictions in the joint use** (interoperability) **of smart grid components. Power prices that depend on the network occupancy generate incentives for commercial and private electricity consumers to react to the fluctuating scarcity of electricity.** However, **there will probably only be a large scale willingness to accept cheaper prices in exchange for more demand-related flexibility** – and to a certain extent external determination – **if data protection issues are dispelled.** The Commission's data protection activities are therefore to be welcomed.

The costs for infrastructure investments are normally borne by network providers first, who then generate revenues through regulated tariffs from infrastructure use. The Commission is right to refer to the fact that investors must have the possibility to cover their costs through tariffs. Therefore, through mark-ups to tariffs in the end the costs are borne by consumers. If smart grids are a cheap way to balance out a fluctuating supply and demand for electricity, then consumers have a net advantage.

However, under the Commission's approach, competition between infrastructure alternatives which leads systematically to the realisation of the cheapest investments possible, can only be realised to a limited extent. This is due to the fact that the Commission only takes into account network providers but not producers. This is too short-sighted. For investments in smart grids partially compete with other projects whose aim is also to tackle the issue of fluctuating power generation and in particular the problem of covering the peak load, for

instance, with electricity-storing pump power plants and the associated supply networks, as well as the provision of conventional reserve capacities (e.g. gas power plant). Producers of fluctuating electricity as the perpetrators of the problem should be liable to invest in curbing fluctuations; **investment costs should not be covered through the regulated tariffs of network providers but through the profits producers make from electricity sales.**

This would create incentives for the cheapest possible curbing of production fluctuations. Producers would, in cooperation with network producers, identify the cheapest way to coordinate production and consumption. Such a system would, moreover, set incentives for the efficient geographical distribution of production capacities. This often means one has to take into account and choose between locations with a very high energy yield (solar energy in South Europe, off-shore wind energy) and the closest (network-saving) vicinity to consumers.

#### Impact on Growth and Employment

The standardisation proposed by the Commission will have a positive impact on growth and employment, as it helps prevent any parallel developments.

#### Impact on Europe as a Business Location

In the case of failing to adjust the energy infrastructure to the increasing share of fluctuating electricity from renewable energies, the quality of Europe as a business location will decrease due to higher energy prices and a reduced security of supply.

## Legal Assessment

### Legislative Competency

Unproblematic. The EU is empowered to adopt energy policy measures to promote the interconnection of energy networks, ensure the functioning of the energy market, provide energy supply security and energy efficiency and energy savings (Art. 194 TFEU). Moreover, the EU may – in addition to measures of the Member States – foster research and technical development. Pursuant to Art. 181 (2) TFEU, the Commission may launch initiatives to coordinate research and technology policies in the EU and Member States.

### Subsidiarity

Unproblematic.

### Proportionality

Currently not assessable.

### Compatibility with EU Law

Currently not assessable.

### Compatibility with German Law

Currently not assessable.

## Conclusion

With smart grids, the demand for electricity can be better coordinated to align with power generation. As the share of power generation from renewable energies will grow in the EU, the benefits provided by smart grids will grow accordingly. The standardisation mandated by the Commission helps prevent expensive parallel developments and restrictions in the joint use (interoperability). Many private and commercial electricity consumers, however, will probably only switch to cheaper prices in exchange for greater flexibility in their consumer behaviour if data protection issues are dispelled. Therefore, data protection activities are to be welcomed. In order to set incentives for the cheapest possible projects aimed at balancing out the fluctuating supply of electricity from renewable energies, investment costs should not be covered by regulated tariffs of network operators but through the profits power producers make from selling electricity.