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A V O C A T S

**State aid and the role of network operators
in the context of smart grids / smart metering**

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I. What are smart grids and smart meters and what do they allow?

- Smart grids/smart metering
- New services, new convergence, new ecosystem
- Need for competition: trial-and-error process

II. Legal issues raised by the intervention of DSOs in the context of smart metering

- What do the directives say?
- DSOs and monopoly/state resources
- Revisiting the DSO intervention's legal limitations
- Addressing new competition challenges
- Insufficiency of antitrust rules
- Confining effects of State aid resources to their (true) purpose

I.A. Smart grids and smart metering – What are they?

- **Smart grids – the networks of tomorrow:**
 - upgraded electricity networks
 - to which two-way digital communication between the supplier and consumer, smart metering and monitoring & control systems have been added
 - can integrate in a cost-efficient manner the behaviour and actions of all users connected to it, including generators, consumers and those that both generate and consume (*prosumers*),
 - in order to ensure an economically efficient and sustainable power system with low losses and high levels of quality, security of supply and safety
- **Smart meters – the smart grid’s key operational tool:**
 - Essential devices that integrate data collection and communication within smart grids
 - Many smart grid functionalities cannot be deployed without smart metering
 - Supplemented by in-home displays and portal solutions, smart meters contribute to higher customer awareness.
 - Using open standards, smart meters are meant to enable dynamic pricing, in turn incentivising customers’ involvement.

I.B. Smart grids and smart metering – New services

Smart Grids provide a platform to develop new innovative energy services which are not only metering activities.

Five main categories of services identified* in the Smart Grid environment:

1. Provision and procurement of flexibility services

Ability to adapt and anticipate to uncertain and changing power system conditions in a swift, secure and cost efficient manner.

2. Infrastructure provision for electrical vehicles (EV)

Increasing use of EV requires a sufficient availability of charging points for EV to become attractive.

3. Energy efficiency services

Smart grids in combination with smart metering can provide detailed information on usage and tariffs in order to inform consumers and to help cost effective options for energy savings and may create new business opportunities for investments in energy savings.

4. Ownership & management of metering equipment

The meters have to be manufactured and installed, owned and operated, but not necessarily by the same party.

5. Data handling

New tasks and services which will be part of the smart grid environment depend on the availability of data provided by the metering equipment. Data handling is important for three groups of services: commercial operations, ensuring a stable system functioning and quality of supply, efficient grid planning.

* See 2014 ECORYS Report for DG ENER *“The role of DSOs in a Smart Grid environment”*

I.C. Competition required for trial-and-error process

What is at stake from an economic/business point of view?

- **Possible new convergence** - creation of a new IT ecosystem bridging energy/electronic communication services
 - Partnering between device providers and energy suppliers
 - Expected to:
 - catalyse the development of retail markets and enable enlarged business models like network operation and asset management.
 - be integrated with home appliances and home automation networks
- **Achieving the benefits of liberalisation:** full competition between energy suppliers
 - more sophisticated price offering based on client profiles:
 - consumers will commit not to spend energy at certain time
 - Innovative offers
 - consumers will use the battery of their EV to resell energy in the network

II.A. Legal framework

What do the directives say?

1. Directive 2009/72 (Electricity)

- **Recitals 27, 52** – modernisation should be “*encouraged*”, introduction of smart metering should be “*economically reasonable*” and “*cost effective*”
- **Article 3 § 11** – Member States should “*strongly recommend*” that **undertakings** optimise use of electricity, e.g. by providing energy management services, introducing intelligent metering systems or smart grids...
- **Annex I.2** – a target of up to 10 years for the implementation of intelligent metering systems, subject to the assessment of long-term costs and benefits; if assessment is positive, 80% of consumers should be equipped by 2020

2. Directive 2009/73 (Gas) – symmetrical, but less ambitious provisions

- **Recital 55**
- **Article 3 § 8**
- **Annex I.2** – no target deadline for introduction of smart meters; Member States are free to decide on the timeline

3. Directive 2012/27 (Energy Efficiency)

- Article 9 “*Member States shall ensure that, in so far as it is technically possible, financially reasonable and proportionate in relation to the potential energy savings, final customers for electricity, natural gas, district heating, district cooling and domestic hot water are provided with competitively priced individual meters*”

→ **No obligation for Member States to finance**

→ **No specific role for DSOs – all undertakings should take part in the process**

II.B. Legal framework

DSOs and State/Monopoly resources

- **European Council Conclusions 23 May 2013:**
 - Need to phase out environmentally or economically harmful subsidies (e.g. for fossil fuels) to facilitate investments in new and intelligent energy infrastructure
- **Explicit guidelines for the assessment are limited**
 - Energy & Environmental Aid Guidelines (EEAG) 2014
 - Section 3.8 – Aid to energy infrastructure (includes smart grids):
 - Investment, not operational aid, meeting the criteria of (i) objective of common interest; (ii) need for State intervention; (iii) appropriateness; (iv) inventive effect; (v) proportionality; and (vi) avoidance of undue negative effects on competition and trade
 - § 204: “*energy infrastructure is typically subjected to tariff and access regulation and to unbundling requirements according to internal energy market legislation*”
 - § 206: “*for smart grids, (...) the market failures in terms of positive externalities and coordination problems are such that financing by means of tariffs may not be sufficient and State aid may be granted.*”
 - Section 3.9 – Aid to generation adequacy
 - The roll out of smart meters is taken into account in the impact assessment of demand-side participation and therefore the need for State intervention
- **These guidelines only concern investment aid for infrastructure, but do not address cross-subsidies by publicly-financed, State-controlled companies, for the operation and marketing of new energy services**

II.C. Revisiting the DSO intervention's legal limitations

EU Energy Directives (2009/72 and 2009/73) assign DSOs a specific role (Article 25):

- responsible for ensuring the long-term ability of the system to **meet reasonable demands for the distribution** of electricity/gas.
- responsible for **operating, maintaining and developing** under economic conditions a secure, reliable and efficient electricity/gas **distribution system** in its area **with due regard for the environment and energy efficiency**

Definition of distribution system:

- *“the transport of electricity on high-voltage, medium-voltage and low-voltage distribution systems [or of natural gas through local or regional pipeline networks] with a view to its delivery to customers, **but does not include supply**”*

How to avoid that such public financing does not kill the emergence of a competitive landscape when suitable and possible?

- How far does the “*due regard for the environment and energy efficiency*” go?
 - // definition of the smart grid purpose: “*ensure an economically efficient and sustainable power system*”
- How far does “*but does not include supply*” go?
- **Redefining the lines between monopolistic / competitive activities ?**

SUMMARY OF MONOPOLISTIC AND COMPETITIVE CHARACTERISTICS OF THE FIVE SERVICES IDENTIFIED

		Flexibility services	Infrastructure provision for electric vehicles	Ownership & management of metering equipment	Energy efficiency services	Data handling
Monopolistic characteristics	Public good characteristics	Network and system management are public goods	None	None	None	Non-rivalrous, (partly) non-excludable by legislation
	Economies of scale and scope	High economies	Limited economies of scale, some economies of scope	Some economies of scale and scope	Some economies of scale	Substantial economies of scale
	Other externalities	Other characteristics of naturel monopoly (non-storability of electricity, locations rents, direct connections to customers)	Chicken-and-egg problem, positive externality on travelling distance for all EV	Stimulates flexibility supply, positive externality ('enabler') for other system segments potential possibility for better system recovery of system with prosumers	Lack of awareness of benefits costs of energy efficiency, negative externalities not included in energy prices, split incentives, high transaction costs EPC projects	Lack of adequate guarantees on privacy and use of smart meter data, data security
Competitive characteristics	Incentives for innovation	Large potential for flexibility supply, ICT allows for aggregation of small flexible DER	High number of technology providers	High number of technology providers	Limited entry and exit barriers for technology providers	Many suppliers and users, market entry may promote product diversification
	Customer orientation		Experience with market segmentation and customer oriented retail processes by commercial actors	Possibility to leave decision to install a smart meter to customers		
	Other	Increasing number of flexibility providers, limited number of flexibility categories, widely available price information				Low transaction costs

II.E. Insufficiency of antitrust rules

- **Need to address the antitrust risks arising from the operation of new and potentially competitive energy services out of the position of a legal monopoly**
- **Risk that competition authorities intervene too late with a risk of under-enforcement of competition rules (error type II)**
 - Several cases in French law where, despite interventions, results were poor
 - **00-D-50** Française des jeux re: IT maintenance and retail shop furniture (abuse);
 - **03-D-44** GDF re: heating services and metering (no abuse established);
 - **05-D-53** SNCF re: advertising spaces in urban public transport networks (no abuse established)
 - **17-D-06** ENGIE re: using historical data file to convert its customers on regulated gas tariffs to market-based contracts (100 M€ fine and settlement)

II.F. Confining the effects of State aid resources to their purposes

- **DSOs should focus on management of distribution network and using smart metering without providing any additional services to final consumers**
 - Provision of “free services” – indeed indirectly financed by access resources – may jeopardize the emergence of the new ecosystem
 - Data should be offered on fair and reasonable and non discriminatory conditions to any (regulated?) players
- **Energy supply should encompass any services derived from smart metering**
 - Open access to aggregated data (anonymous)
 - Energy suppliers should not have less access to data derived from the sale of their energy than other players in other sectors
 - Data privacy is a more stringent issue in mobile telephony / Internet than in energy...
 - Requires data neutrality rules between sectors
- **Possible remedies**
 - Stating clearly in an *ex ante* regulation that DSOs should not provide any retail services – whether or not on a free basis – without full structural separation from the DSO business
 - Imposing “equivalence of input” rules for accessing data

Thank you for your attention!



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