Florence Forum
Session 4.1 – Digitalisation of energy
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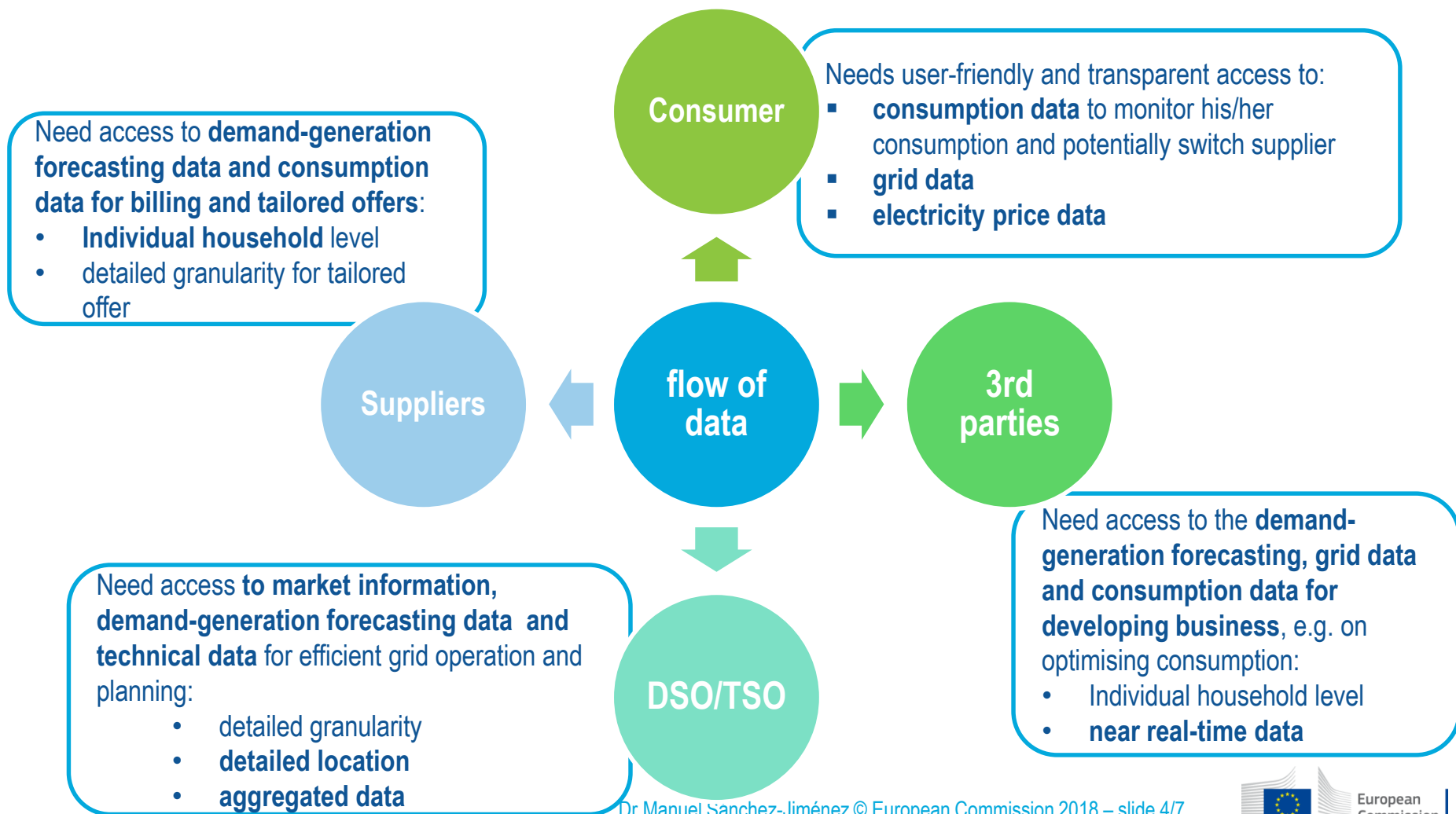**DG ENER - Directorate for Internal Market**
European Commission

Current trends for the digitalisation in energy

➢ Digitalisation in energy was focused on efficiency and automation. Today's digital transformation covers data exchange and data process to facilitate current and new business

➢ The interaction between the energy and ICT sectors is not limited to the energy system. It will interact with various energy vectors (e.g. electricity/gas and heating) and with other sectors (e.g. transport through eVs) and interact also with other smart home or 'sharing-economy' services offered to consumers (e-Health, security, crowd-funding, car-sharing, etc.)

➢ But there are energy-specific issues (such as its environmental foot-print, different transmission times for electricity and for (cyber)secure information, forecasting of variable energy resources, high dependence on (cyber)secure and reliable electricity infrastructure, etc.) which set up certain physical limits to overcome for the digitalisation in energy

➢ Existing and upcoming regulatory framework towards digital transformation in energy has relied on:

- Developing infrastructure

- Exchanging of data to facilitate current and new markets
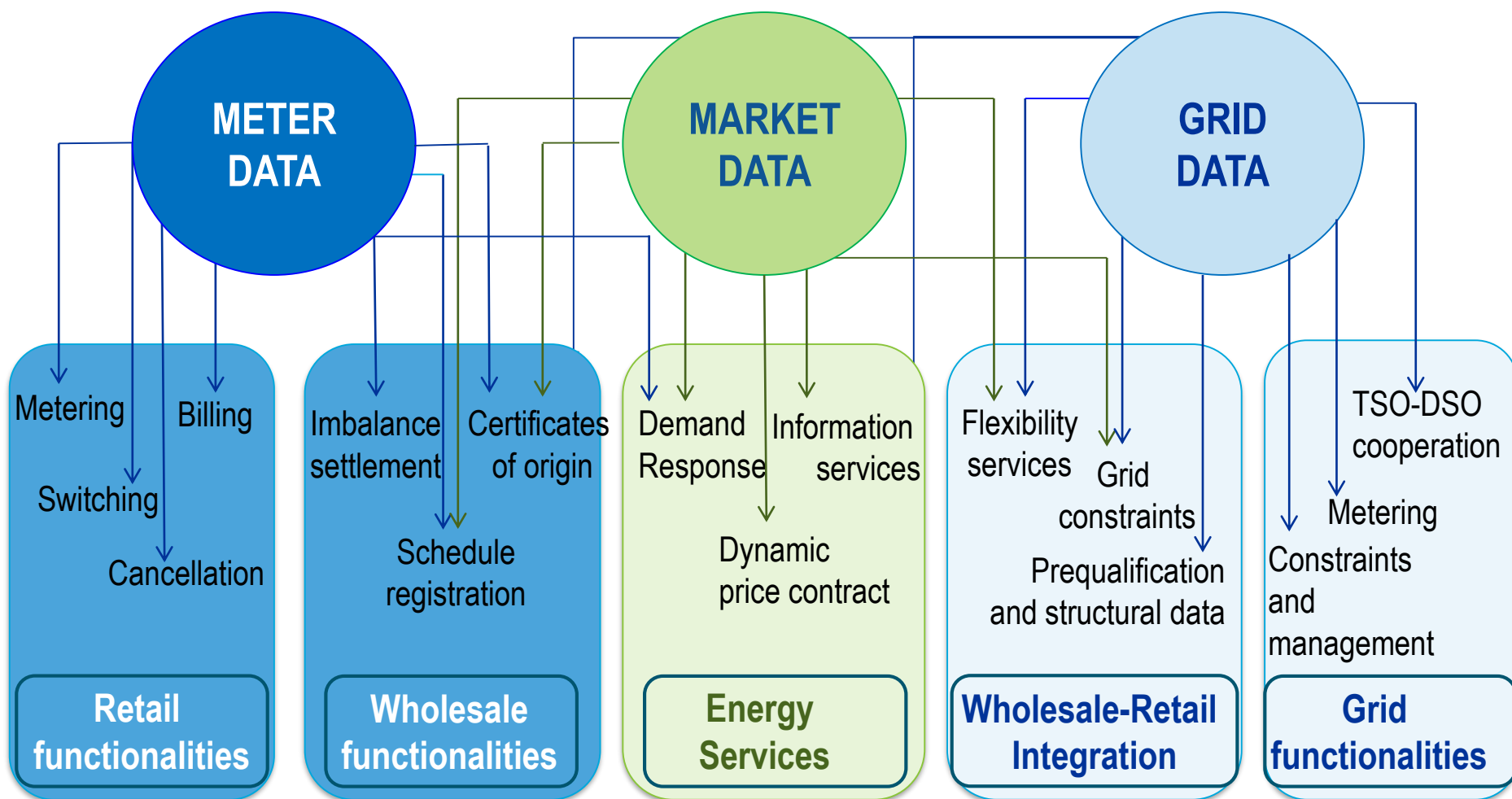
- Empowering consumers

Short overview on current actions by key actor

	Infrastructure	Market	Customer
Member states level	– Rolling smart metering – Data hubs – Pilot projects – R&D	– Enforcement of 3rd Energy package and recognition of CE4AE package – Market opening: new actors and new services – Spreading acceptance and implementation of near-real time info on consumption	– Consumer awareness and trust – Implementing NIS and GDPR: common minimum level of cyber security and data protection
EU level	– PCI and CEF – AFID – Horizon 2020	– Clean Energy package – Network Codes – DSO-TSO cooperation platform – SGTF preparing the ground for further legislation – Standards: M440&490, SAREF and interoperability – Developing good practices for cyber security – Preparing possible labelling BACS, smart appliances and Ecodesign	– NIS Directive – GDPR – e-Privacy Regulation – Citizens' Energy Forum to facilitate exchange of good practices for consumers awareness
Private and Public actors	– Integrating service platforms – Pilot projects – Implementing smart metering – Integrating large volume RES – Secure supply	Emerging number of aggregators, ESCOs and independent suppliers for well-functioning competition in energy market, reliable service and supply for all consumers	– Security of supply amidst energy transition – Interoperability and connectivity for smart ready appliances and services – Apps/services in near-real time

The new CEP provides sound framework towards easy, transparent and non-discriminatory access to data

Consumer

Needs user-friendly and transparent access to:
- **consumption data** to monitor his/her consumption and potentially switch supplier
- **grid data**
- **electricity price data**

Need access to **demand-generation forecasting data and consumption data for billing and tailored offers**:
- **Individual household** level
- detailed granularity for tailored offer

Suppliers

flow of data

3rd parties

Need access to the **demand-generation forecasting, grid data and consumption data for developing business**, e.g. on optimising consumption:
- Individual household level
- **near real-time data**

Need access **to market information, demand-generation forecasting data and technical data** for efficient grid operation and planning:
- detailed granularity
- **detailed location**
- **aggregated data**

DSO/TSO

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Data types and related processes covered in the present/upcoming electricity market model

Issues not covered in the present/upcoming legislation

➢ Looking ahead towards a secure, competitive and cleaner European energy market, a future-proof regulatory framework shall also ensure that:

- existing operators can adapt their business models and create new business,

- start-ups and tech companies are attracted to the energy sector,

- facilitate the digitalisation process and create real incentives for innovative solution-providers

➢ It calls for actions to develop and implement:

- new data processing infrastructures (or service-platforms) which guarantee cost-effective investments and add value to both grid operators and grid users

- Interoperability and synergies with other sectors

- power electronic technologies and emerging disruptive technologies to overcome physical restrictions and further integrate distributed energy resources

Questions for the discussion

I.   The CEP provides sound framework towards the digitalisation in energy, but what is missing? At what time horizon?

II. What type of national incentives are been applied to enhance data exchange and digitalisation of processes?

III. What are the lessons learned and the best practices?

IV. Where are the needs and the level for harmonisation? How to create consensus?

Background information