evolvDSO: Preliminary Assessment of future DSO roles

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The study on DSO roles started from previously published studies and strives for interaction with ongoing initiatives.
Preliminary assessment of DSO roles
Inputs considered during analysis

SGTF EG 3 Work ('First year report')
1) According to the long experience of DSOs in data management (collecting, validating, managing and providing data), in most European countries* DSOs are already responsible for handling metering data and perform efficient, not-discriminatory and secure data handling.

2) In some countries with a fragmented network structure with many DSOs, a more centralized model is under discussion for the management of certain kind of data

*except UK

"DSO as Market Facilitator"
"Third Party Market Facilitator"

CEER public consultation on the Future Role of the DSO (input for the forthcoming EC retail market communication)
1) “The DSO must run its business in a way which reflects the reasonable expectations of network users and other stakeholders”
2) “The DSO must act as a neutral market facilitator in undertaking its core functions”
3) “The DSO must act in the public interest, taking into account of costs and benefits “
Preliminary assessment of DSO roles
Inputs considered during analysis

ENTSO-E Grid Codes
• Draft grid codes considered in the fields of: Information exchange, collaboration, flexibility management.
• Related to Operational Security (OS), Operational Planning and Scheduling (OPS), Load Frequency Control and Reserves (LFCR), Operational Procedures in an Emergency (EP)
• Pragmatic approach: aware of developments but no limitations for possible longer term vision

"DSO as Contributor to System Security, Neutral Market Facilitator and Distribution System Optimizer"

Internal surveys with evolvDSO partners for WP1 – WP2
Surveys related to:
• scenarios,
• current market design and regulatory framework,
• current practices of DSOs to deal with DRES,
• current and possible future responsibilities (roles and services),
• limitations and opportunities by future regulatory frameworks linked to future roles
Preliminary assessment of DSO roles
Roles, services and use cases

• Role: external intended behaviour of a business party which cannot be shared.
  ➢ “Responsibility”

• Service: business transaction between two or several roles interacting to achieve a given goal, which is implemented by a business process.
  ➢ Existing/new roles versus adapted/new services versus adapted/new business processes

• Use Case: specification of a set of actions performed by a system which yields an observable result that is of value for one or more actors or other stakeholders of the system.
Preliminary assessment DSO roles
The DSO roles identified by the project

- Improve network planning and operation processes at different timeframes
  - Distribution System Optimiser

- Contract and activate flexibilities at different timeframes
  - Distribution Constraints Market Operator

- Reinforce TSO-DSO cooperation
  - Contributor to System Security

- Collect, provide and store data (from distribution network components, contracts and meters)
  - Data Manager

- Facilitate and enable electricity markets
  - Neutral Market Facilitator/Enabler

- Provide regulated services based on data management and provision
  - Other Third Parties Relationship Manager

- Roll-out, maintain and decommission of smart metering infrastructure
  - Customer Relationship Manager
  - Smart Meter Operator

Legend:
- Evolving role
- New role

Potential (evolving and new) roles at distribution system level
D1.3 Preliminary assessment DSO roles

The role model defined by the evolvDSO project

Potential (evolving and new) roles at distribution system level

Markets for:
- Energy Wholesale
- Demand Response
- Balancing
- Capacity
- Ancillary Services
...

Distribution Constraints
Market Operator

Neutral Market
Facilitator/Enabler

TSO

Contributor to System Security

BRPs

Distribution System Optimiser

Customer Relationship Manager

Data Manager

Smart Meter Operator

Other Third Parties Relationship Manager

Flexibility Operators

Authorities & Providers

Regulators

Suppliers

Grid Users
D1.4 Ongoing steps assessment future DSO roles
Interactions between roles and external actors, regulation assessment

- **Functional** challenges when adopting DSO roles (interaction roles):
  - Further detailed analysis of roles and concepts with their possible implications
    - Interaction/interference of different roles (DSO/DCMO/NMF/...)
    - Different possible uses of flexibility: other stakeholders
    - Offering services/information to other stakeholders
  - Taking into account possible future market evolutions and regulatory degrees of freedom

- **Regulatory** challenges faced:
  - Specific survey dedicated to the relation between the concepts of the future roles of DSOs and the regulatory framework, exploring:
    - Boundaries/possibilities of current regulation
    - Possible need for changes
  - to implement innovative concepts related to the possible future roles
D1.4 Ongoing steps assessment future DSO roles
Interactions between roles and external actors, regulation assessment