

NordREG Hearing, 8 April 2015

# **MAPPING OF TSO AND DSO ROLES AND RESPONSIBILITIES RELATED TO INFORMATION EXCHANGE**

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# DISCLAIMER

- The following presentation contains preliminary results from THEMA's study on behalf of NordREG on TSO and DSO roles and responsibilities related to information exchange, and is based on the Draft Report submitted 23 March 2015. The report have not been subject to final quality control.

# AGENDA

- Introduction
- Summary of findings
- Developments in data-exchange platforms
- Q&A
- Back-up: Observations per country

# ABOUT THE PROJECT

**Background:** NordREG's work towards harmonisation of the Nordic retail markets and ongoing national processes on the development of efficient information exchange infrastructures between end-users, DSOs, TSOs and other market agents, including new entrants such as Energy Service Companies (ESCOs).

**Project aim:** To map the roles and responsibilities with regard to information exchange and stakeholders' access to and communication between data-hubs and information exchange systems between:

- Transmission System Operator
- Distribution System Operator
- Electricity Supplier
- Customer
- Data Exchange Platform
- Third Party, including Energy Service Companies

# INFORMATION EXCHANGE DEFINITION

Information exchange *‘is the exchange of data regarding electricity consumption and customers between network companies, TSOs, suppliers, end-users and other market players. This can include consumption measured in kWh over a specified time period, peak consumption, name and address of customers, information on the type and identity of meter and similar information.’*

It excludes:

- Other market and network data such as prices, network tariffs, power flows, outages, voltage quality
- Technical aspects of information exchange (message formats etc.)
- Obligations on billing and billing information

# CLASSIFICATION OF (LEGAL) DOCUMENTS

<i>Category of law</i>	<i>Labels / names</i>	<i>description</i>
EU Law	<ul style="list-style-type: none"> <li>• Directive</li> <li>• Regulation</li> <li>• Decision</li> </ul>	Legislation enacted at EU level that has (in-) direct effect on the law of Member States. This does not include strategic documents, studies, guidelines or any other document of descriptive nature.
Primary national law (Formal legislation)	<ul style="list-style-type: none"> <li>• Acts</li> <li>• Laws</li> <li>• Statute</li> <li>• Bill<sup>2</sup></li> </ul>	Legislation that is enacted via a formal procedure: approval / inclusion of / by executive and legislative powers.
Secondary national law (Bylaws or delegated legislation)	<ul style="list-style-type: none"> <li>• Regulation</li> <li>• Decisions</li> <li>• Grid Codes</li> <li>• Public license</li> </ul>	<p>Legislation that is enacted / adopted by a body other than the legislator (often a governmental authority) pursuant to a mandate / delegation deriving from a formal law.</p> <p>It is not required that the author of the legislation is a governmental authority, it is the adoption that is the key element. Secondary legislation cannot create new obligations, but defines at detail level what the primary law mandates.</p>
Soft law	<ul style="list-style-type: none"> <li>• Sector-specific agreements</li> <li>• Recommendations</li> <li>• Declarations</li> <li>• Codes of conduct</li> </ul>	Documents or quasi-legal instruments which do not have any legally binding force. They often contain aspirational goals and can become 'legally' or socially binding to a sector or those who sign up for it.
Other documents without any legal character	<ul style="list-style-type: none"> <li>• Rest</li> </ul>	Any document that can be informative but has no legally or socially binding character.

## PRIMARY FOCUS

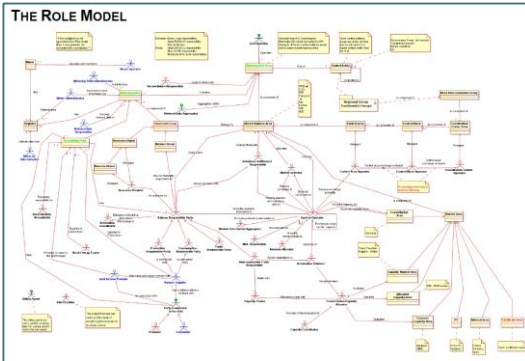
# EU DIMENSION

All Nordic countries have a similar legal basis and level playing field as EU Member States (Denmark, Finland and Sweden) and Parties to the EEA Agreement (Iceland and Norway):

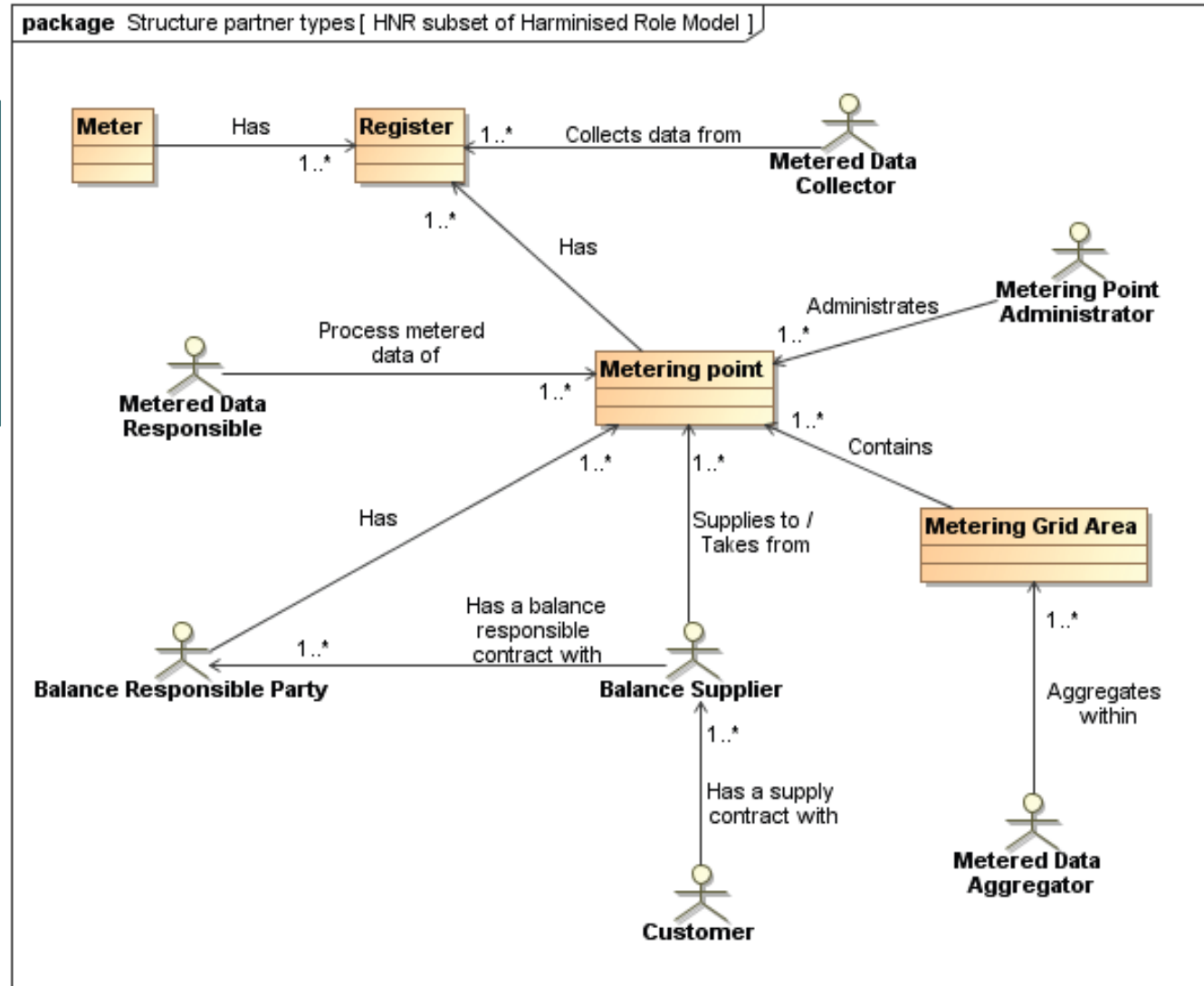
- The EU Directive on the Internal Energy Market (2009/72)
  - Level playing field for energy markets
- The Energy Efficiency Directive (2012/27)
  - Roll-out smart meters
  - ESCO's
- Revision of general data protection regulation (GDPR)
  - Privacy
- Network Codes

The project does not describe the similarities at EU level since they apply to all Nordic countries.

# RETAIL MARKET ROLES MODEL: DESCRIPTIVE USE



ENTSO-E EHRM is extensive, so we used a simplified and retail market model of the Nordic Ediel Group as descriptive guideline



Source: Nordic Ediel Group Report: Business Requirement for a Harmonised Nordic Retail Market, 22 May 2014.

This is a UML class diagram: UML symbols indicating the 'actors', the class to define the 'domain' and the arrows to describe the processes.



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# SUMMARY OF FINDINGS

## Overview of roles/responsibilities per country with (type of) legal source

Actor	Denmark	Finland	Iceland	Norway		Sweden
				Current regime	Revision	
TSO is final Imbalance settlement responsible	Yes §27 Electricity supply Act	Yes § 46-47 Elmarknadslag	Yes	Yes Konsesjon for avregningsansvarlig Energiloven	Yes Konsesjon for avregningsansvarlig Energiloven	Yes Ch. 8 § 11 Electricity Act
TSO is responsible for development of a centralized data exchange platform	Yes §28 stk. 2, nr. 7 Electricity supply Act	Yes § 49 Elmarknadslag	No	Yes § 12 Konsesjon for avregningsansvarlig Energiloven	Yes § 12 Konsesjon for avregningsansvarlig Energiloven	No
TSO is responsible for operation of a centralized data exchange platform	Yes §28 stk. 2, nr. 7 Electricity supply Act	No No formal decision taken yet	No	No	Yes § 6-1 Am. Regulation 1999/301	No
DSO is responsible for the Meter, meter reading and validation of meter data	Yes § 1 Regulation A § 3 Regulation I*	Yes Kap 6 § 1 Decree 66/2009	N/I	Yes § 3-3 Regulation 1999/301	Yes § 3-3 Am. Regulation 1999/301	Yes Electricity Act 3 chapter 10 §
Hourly meter reading	Yes § 2.2 Regulation A	Yes Ch. 4 § 1 66/2009.	N/I	Possible § 3-3 Regulation 1999/301	Possible § 3-3 Regulation 1999/301	Yes, with exceptions Electricity Act Ch. 3 §10
Supplier is responsible for customer data (personal data)	Yes § 3 Regulation I*	N/I	N/I	No	Yes § 6-17 Am. Regulation 1999/301	N/I

	Yes, source in primary legislation
	Yes, source in secondary legislation

	Possible
	No
N/I	No information available

# SUMMARY OF FINDINGS CONTINUED

Actor	Denmark	Finland	Iceland	Norway		Sweden
Supplier can be a Balance Responsible Party	Yes Regulation C1	Yes § 73 Elmarknadslag	N/I	Yes § 5-7 Regulation 1999/301	Yes § 5-7 Am. Regulation 1999/301	Yes Electricity Act 8 chapter
Supplier is the main contact point for the consumer	Yes § 1 Regulation B	No	N/I	No	No	No
Supplier is responsible for billing of all services	Yes Regulation I*	No	N/I	Possible DSO is § 7-1 Regulation 1999/301	Possible DSO is § 7-1 Am. Regulation 1999/301	No
Customer has access to its own consumption	Yes Via supplier (website)	Yes Via DSO website Ch. 6 § 8 Decree 66-2009	N/I	Possible locally and via DSO (website) if AMS is installed § 4-8 Regulation 1999/301	Yes § 6-15 Am. Regulation 1999/301	Yes EIFS 2011:3 Via DSO website
Third party access (incl. ESCOs) is possible via a power of attorney	Yes Regulation H1 Regulation I*	Yes Ch. 6 § 8 Decree 66/2009.	N/I	No	Yes Via a digital empowerment tool § 6-18 Am. Regulation 1999/301	Yes EIFS 2011:3 11 chapter Via a power of attorney
Strict format for power of attorney	Currently Regulation H1 Regulation I*: customer- driven power of attorney	No Just consent	N/I	No	Yes Via a digital empowerment tool § 6-18 Am. Regulation 1999/301	No
Data quality is the responsibility of the DSO	Yes Regulation D1	Yes Decree 66/2009.	N/I	Yes § 3-10 Regulation 1999/301	Yes § 3-10 Am. Regulation 1999/301	Yes EIFS 2011:3
Data security is the responsibility of metered data responsible	Yes Data security is responsibility of TSO	Yes DSO is responsible for data security	N/I	Yes System services include data security (DSO) § 1-3 Regulation 1999/301	Yes TSO is responsible § 6-22 Am. Regulation 1999/301	Yes

# MANY SIMILARITIES BETWEEN THE NORDIC COUNTRIES, BUT ALSO DIFFERENCES

- Generally similar electricity market regulations and TSO-DSO roles and responsibilities
  - Emphasis on primary and secondary legislation, the role of soft law is diminishing
- All countries have operational data-hubs or ongoing development processes
  - The role of the TSO is changing towards retail market facilitator as hubs are being developed
  - DSO role increasingly limited to operation and installation of physical meters as well as primary data collection
  - No information on specific plans for cross-border interaction between information exchange systems, but the hubs will facilitate such interaction
- Customer access to own data and third-party access organised differently today

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# DATA-EXCHANGE PLATFORM DEVELOPMENTS PER COUNTRY

<i>Role</i>	<i>Denmark</i>	<i>Finland</i>	<i>Iceland</i>	<i>Norway</i>	<i>Sweden</i>
Development	<ul style="list-style-type: none"> <li>Yes, currently expanding the roles and services of the data-hub.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, study published December 2014.</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, a study was executed and currently Statnett is developing an ELHUB. Formal decision not yet made, but currently under consultation by NVE.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, proposal delivered by the Energy Markets Inspectorate to the Government, currently being considered.</li> </ul>
Responsible actor	<ul style="list-style-type: none"> <li>Energinet.dk</li> </ul>	<ul style="list-style-type: none"> <li>Fingrid</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>Statnett as holder of the licence for Imbalance Settlement Responsible</li> </ul>	<ul style="list-style-type: none"> <li>TSO Svenska Kraftnät as proposed, not decided</li> </ul>
Data storage and exchange platform	<ul style="list-style-type: none"> <li>Yes, Data-hub is a data storage and information exchange platform.</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, ELHUB will be a data storage and information exchange platform.</li> </ul>	<ul style="list-style-type: none"> <li>Exchange platform, possibly including storage</li> </ul>
Other functions	<ul style="list-style-type: none"> <li>Yes, most business processes in the retail market,</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, ELHUB will provide additional functions.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, most business processes in the retail market.</li> </ul>
Expected operation date	<ul style="list-style-type: none"> <li>Already in use</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>N.a.</li> </ul>	<ul style="list-style-type: none"> <li>Expected operation 2016.</li> </ul>	<ul style="list-style-type: none"> <li>To be decided</li> </ul>

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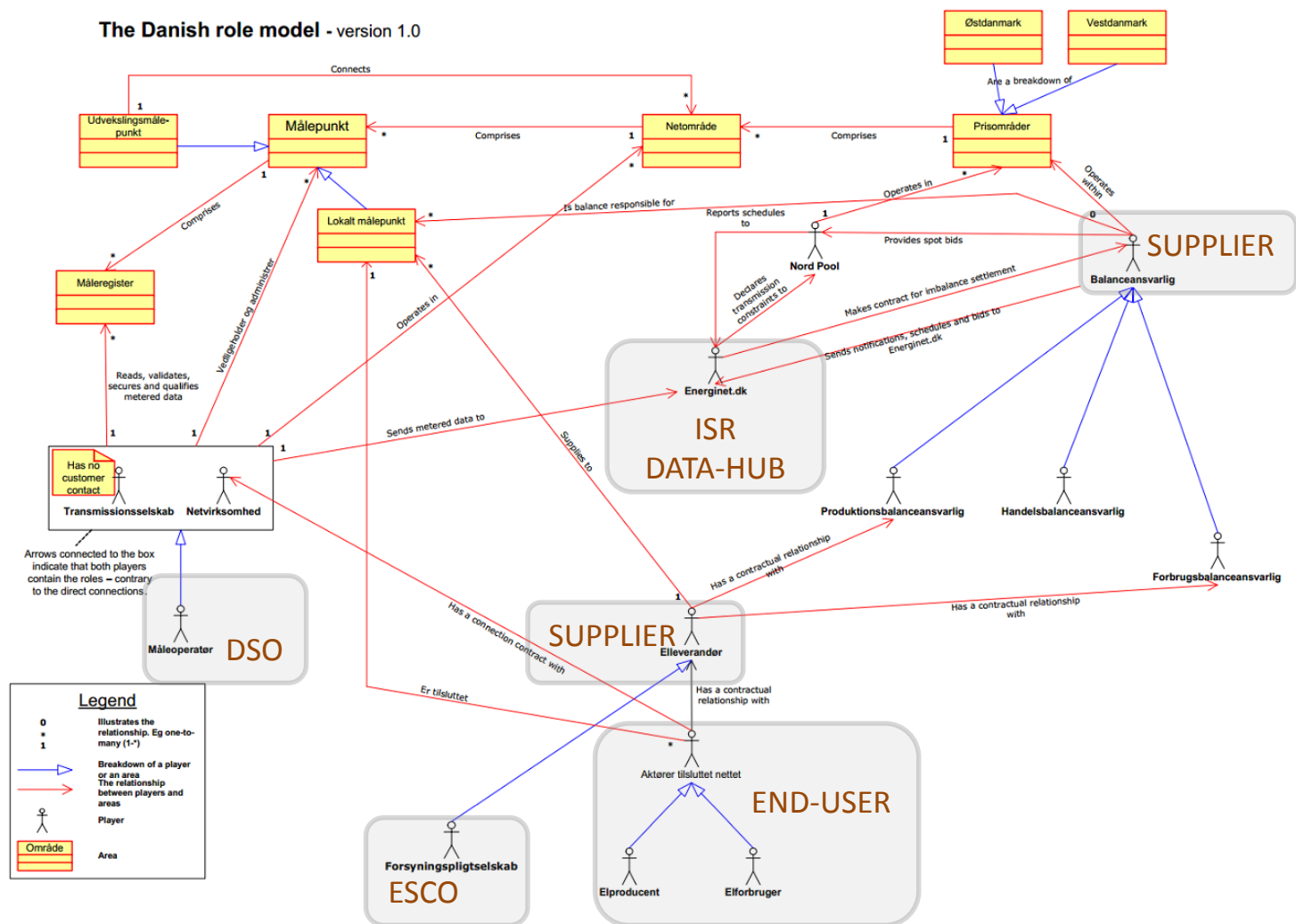
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# DENMARK OBSERVATIONS

- The TSO develops and operates the Data-hub. The Data-hub has more functions than just data-storage, it is (will be) used in other processes, e.g. combined billing.
- The TSO is the final imbalance settlement responsible.
- The Data-Hub is a centralized mandatory data exchange platform.
- The DSO is obliged to deliver data to the Data-Hub. Currently, the DSO is also obliged to provide data for suppliers (for billing).
- Customers have access to their own data via the supplier's website.
- Third-party access to hub is possible for legitimate interested parties (ESCOs) with a power of attorney from the customer. A special third-party access identification number will allow them access.
- The power of attorney is currently a written document. With the proposed change in regulation in place, consumer-driven digital empowerment will be the standard.
- There is currently no information available on how the national hub will interact across borders.
- TSO is responsible for data security. In addition, general regulations based on EU Regulations apply.

# DENMARK'S ROLE MODEL

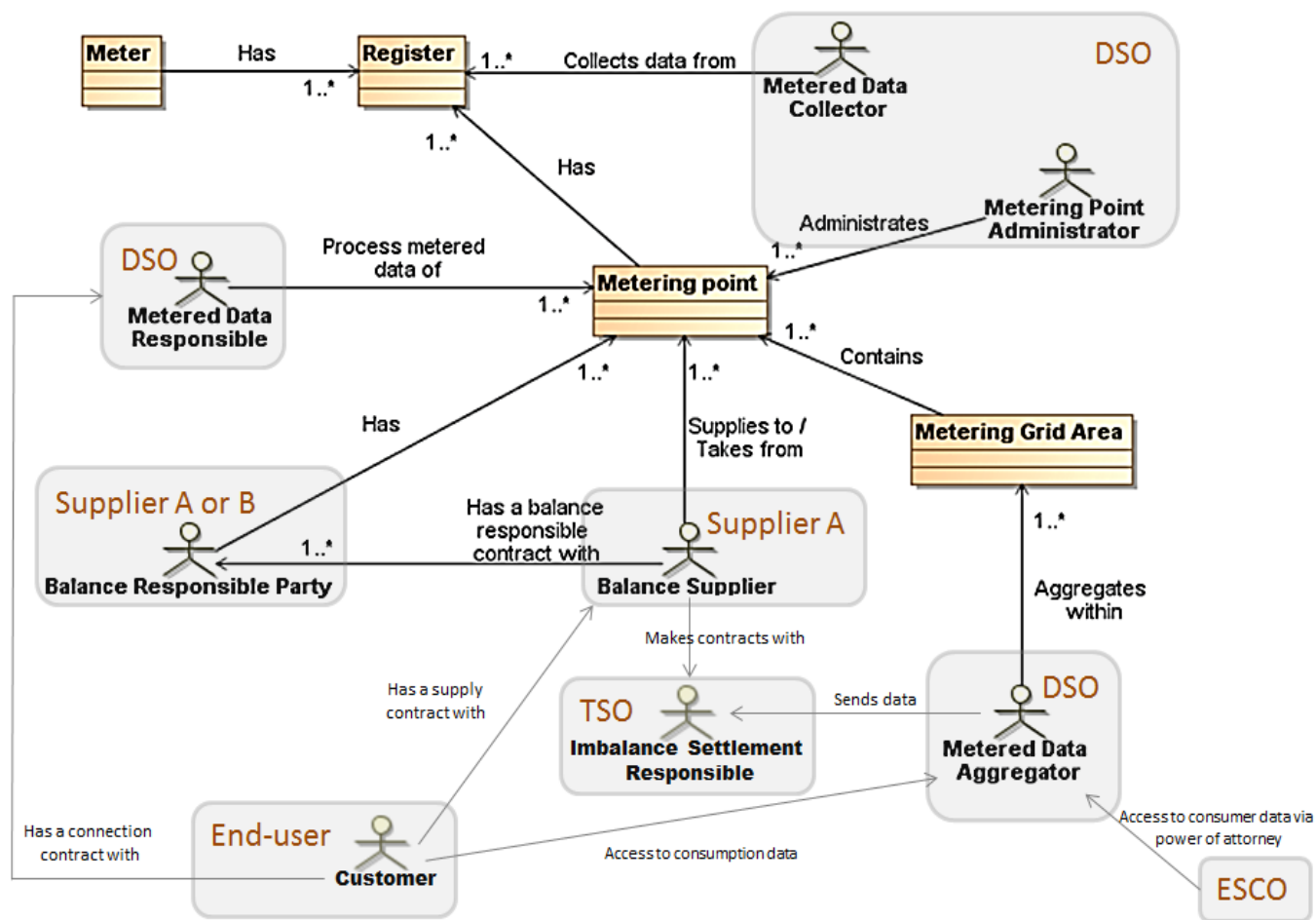


Source: Energinet.dk, Regulation F: EDI Communication, Appendix report 3: The Danish role model, January 2007.  
(NB this model serves for clarification purposes only and not is an official role model)

# FINLAND OBSERVATIONS

- The TSO is the final imbalance settlement responsible.
- The TSO is responsible to develop the exchange of information.
- The TSO has executed a study on information exchange alternatives.
- The DSOs are responsible for information transmission to other market players and most other business processes. DSOs are obliged to provide web access for customers to their data. However, if desired by the customer the communication can go through the supplier.
- Suppliers can be a balance settlement party in its balance market area.
- ESCOs and other third parties have access to customer data via the DSO given that they have power of attorney.
- Data protection and integrity are regulated by a separate Data Protection Ombudsman, while the DSO is responsible for the practical maintenance and compliance with the rules.
- Based on a study, Fingrid has recently proposed a solution for a centralized data exchange platform. Any future development of a data exchange platform is subject to a formal political decision.
- There is currently no information available on information exchange interaction across borders.

# FINLAND ROLE MODEL



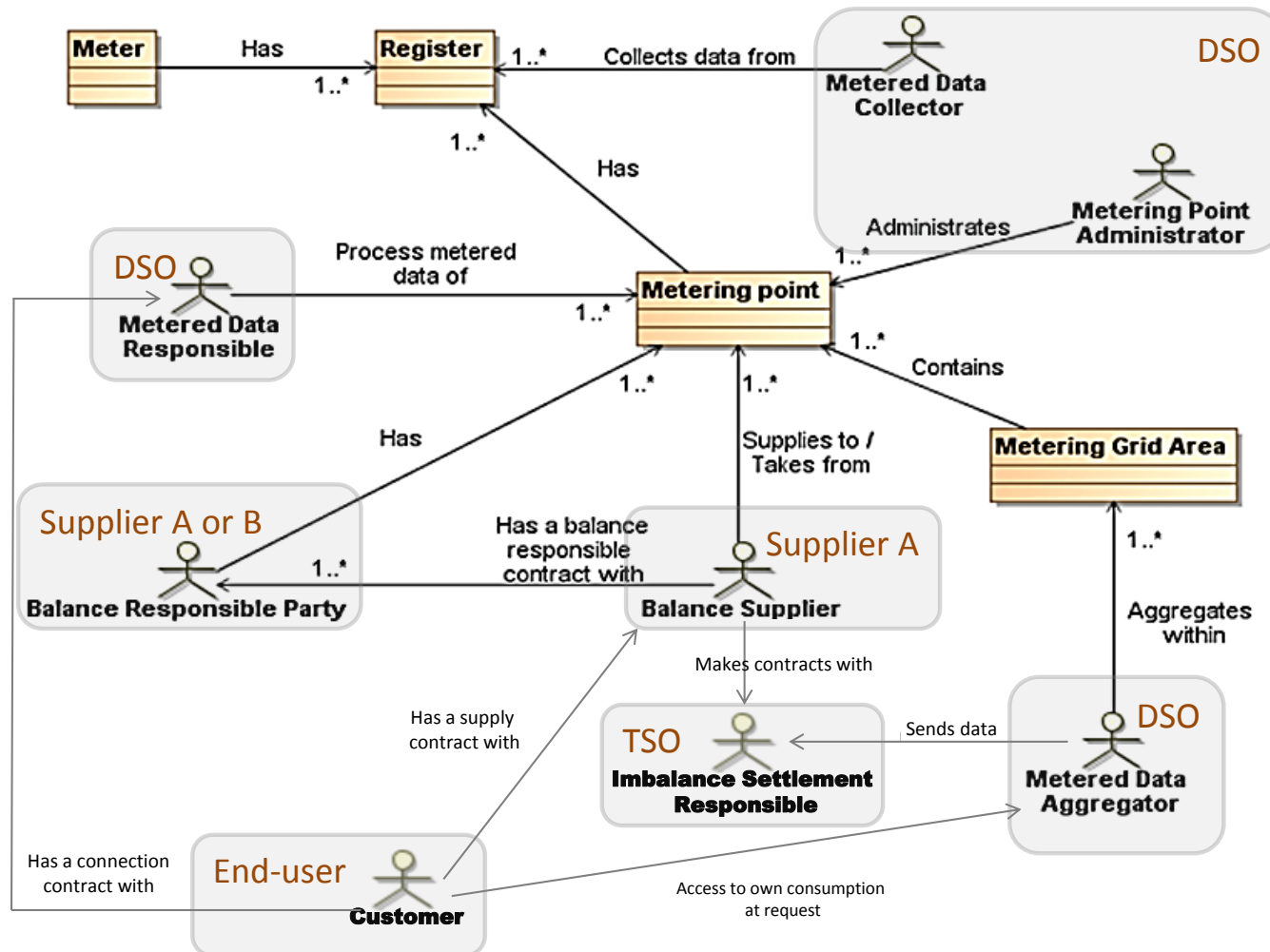
# ICELAND OBSERVATIONS

- The Icelandic information exchange model is based on the DSOs collecting metering data and distributing the information to suppliers and the TSO.
- Customers have access to their own data via the DSO's website.
- There are no plans for a compulsory central data-hub, although there is a voluntary solution that performs many of the same tasks as a hub on behalf of the DSOs. However, in the absence of smart metering, the amount of data is necessarily limited.
- Data protection has not been discussed in relation to the electricity retail market. This should be seen in light of the fact that there are no plans for introducing smart meters.

# NORWAY OBSERVATIONS

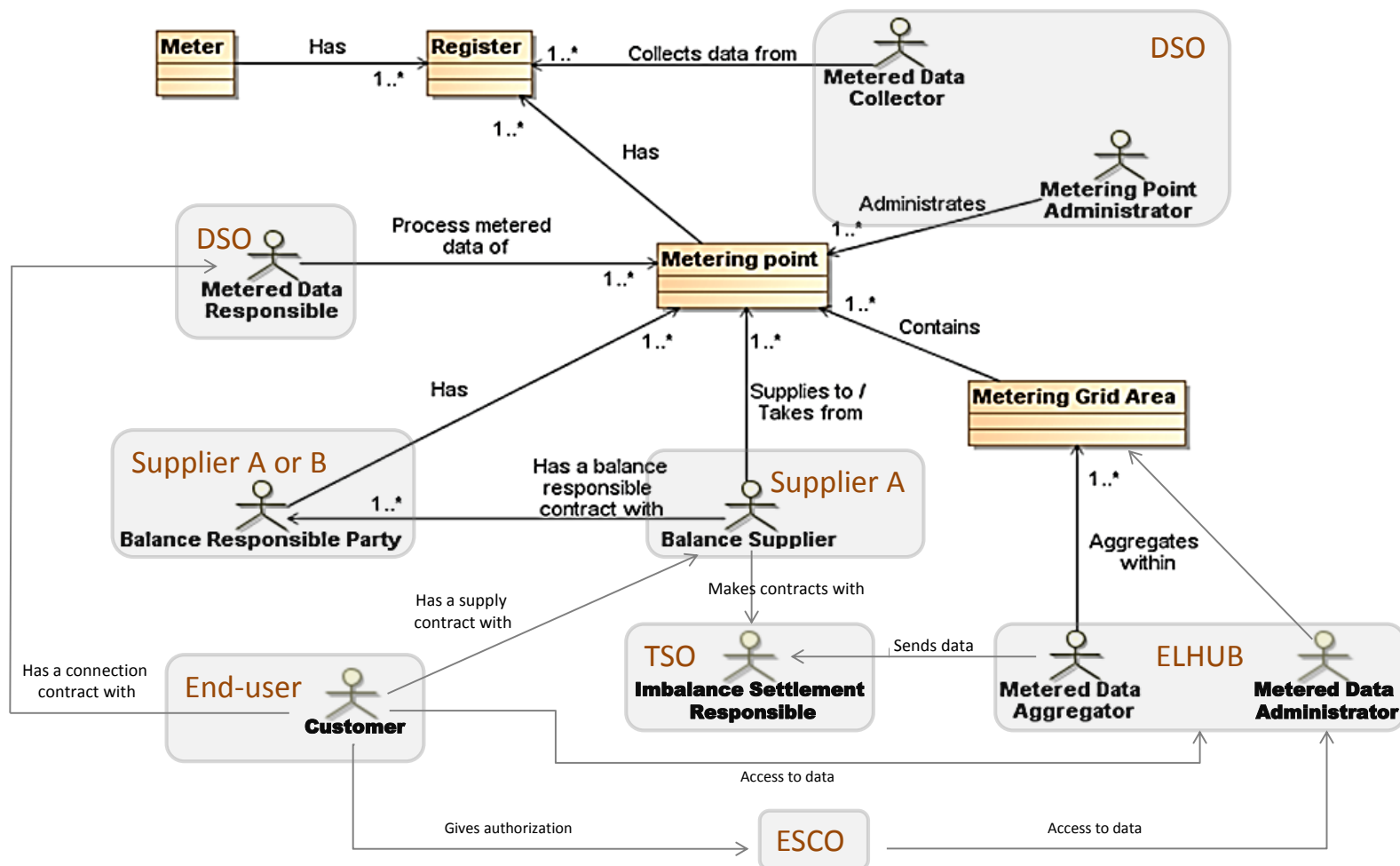
- An current revision of “Avregningsforskriften” intends to update the balancing settlement system and the roles of market players with the introduction of the ELHUB. (the project mapped both the current as well as the revised rights and obligations)
- The TSO will operate the hub as imbalance settlement responsible. Note that this is a separate licence from the TSO licence.
- The DSO is obliged to deliver data to the hub. Currently, the DSO is also obliged to provide data for suppliers (for billing), customers (on request) and the TSO (for imbalance settlement purposes).
- Third-party access to hub: Possible for ESCOs to gain access to customer data with authorisation from the customer.
- There is currently no regulation addressing interaction between hubs and information exchange systems across borders. The ELHUB is designed to easily facilitate cross border exchange easily in the near future.
- Regulation and monitoring of data security is handled by Datatilsynet. With smart metering and the hub in place, the hub will also need to report to NVE on data security, including carrying out risk and vulnerability analysis.

# NORWAY'S CURRENT ROLE MODEL



Source: THEMA draft based on Nordic Harmonized Role Model (NB: Not official role model, illustrative only)

# NORWAY'S REVISED ROLE MODEL

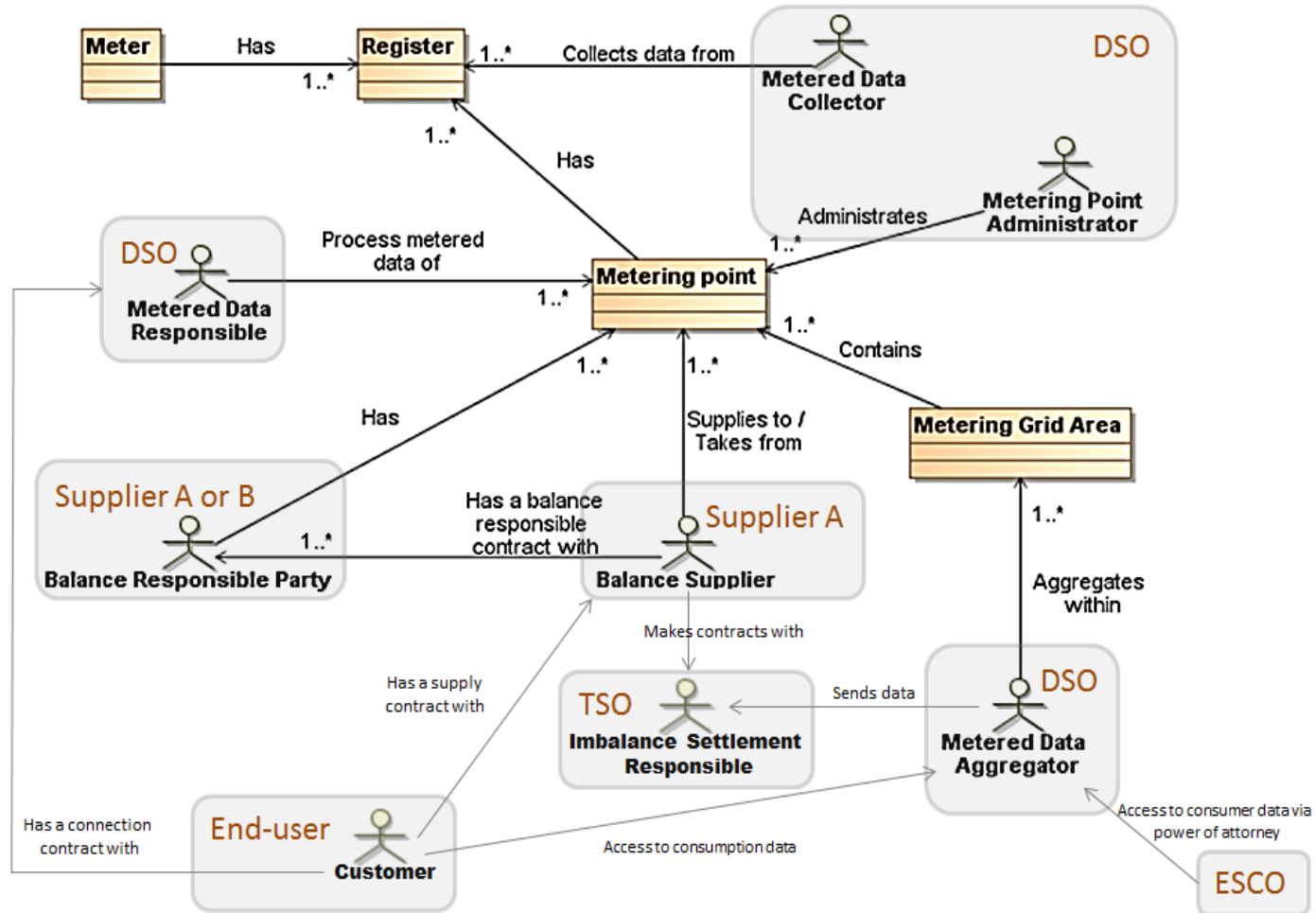




# SWEDEN OBSERVATIONS

- The TSO's main task with regard to data exchange is currently to handle the financial settlement of imbalances. If the Energy Markets Inspectorate's proposal for a data-hub is accepted by the Government, the TSO will be responsible for developing and operating the hub.
- The DSOs are currently responsible for most of the functions regarding information exchange. Many of the DSO tasks will however be transferred to the hub if the proposal is carried out in practice as it now stands, with the exception of owning and operating the meters themselves and collecting the meter data and sending the values to the hub.
- Under the current system, ESCOs and other third parties have access to customer data through power of attorney via the DSO.
- As the hub proposal stands, customers will have access to their data via the suppliers' website with the hub in operation. The rules regarding third-party access by ESCOs and suppliers in the hub have not been outlined as yet.
- According to Ei's proposal, the TSO will be responsible for operating and developing the hub. The hub should be compulsory to use for all market players, including DSOs, suppliers and balance responsible parties.
- Data integrity will be maintained by the hub and other parties responsible for personal data, under supervision by Datainspektionen.
- We have not found any information on cross-border information exchange.

# SWEDEN'S ROLE MODEL





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