

NordREG - Implementation of a common Nordic end-user market**TASK FORCE "DATA EXCHANGE"
Findings and Way Forward**

Note: All findings and recommendations in this report represent the views of the Data Exchange Task Force. Nordenergi has facilitated the task force work but does not as of yet endorse the findings and recommendations

Contents

- 1. Executive summary**
- 2. Guidelines directing the work**
- 3. Working method**
- 4. Overall conclusions**
- 5. Guiding principles for the common Nordic end-user market, from the data exchange angle**
- 6. Roadmap**

Appendices

- A. Members of the Task Force Data Exchange**

1. Executive summary

Designing a common Nordic end-user market is a big challenge. The success of the endeavour will in the end be measured by how well we are able to achieve increased benefits for society through the change. At the same time it is very clear that the change will cause heavy investments for all the market participants, costs that need to be overcome by even greater benefits.

One of the areas that is extremely critical in order to deliver the benefits is the area of data exchange. It is not necessarily possible to deliver enough benefits purely from the increased competition a harmonized Nordic market would bring. Therefore the focus cannot be only on harmonization but it also needs to be a clear improvement in order to secure additional efficiency gains for all market participants and thereby also for the end-consumer.

The Task Force Data Exchange has in this report delivered several important principles that we believe are essential in order to be able to deliver the efficiency gains required. The TF Target Market Model has stated the ambition that the common Nordic market should enable a retail company to sell in all Nordic countries using the same systems. The TF Data Exchange fully supports this and our work is very well in line with this ambition. In practice this implies full harmonization of the business processes and data exchange standards between the Nordic countries. We believe that by honouring the principles stated in this report such a harmonization is possible.

The principles highlight the need for an increase in the stringency of managing data exchange in the business. Mandatory specifications on a detailed level, a single set of rules on a Nordic level, highly automated processes, quality controls that secure that low quality data is not spread among the market participants are all principles that are aimed at increasing the efficiency gains and thereby the benefits of a common Nordic market.

In this report is also a draft road-map showing the necessary steps to be taken to reach the common Nordic end-customer market by 2015. In practice the target market model, customer interface, balance and settlement processes as well as all the other business processes need to be clearly defined on a Nordic level before the final design of the data exchange can be made. This also includes deciding on the optimal data exchange architecture (e.g. data storage, data hub or point-to-point communication) for the Nordic market.

The road-map is not yet fully aligned with the road-map of the other task forces. It is, however, clear that the time plan is very tight. It is also clear that several tasks have to be done consecutively and not in parallel. This means that a delay in one area will easily cause a delay in the whole time plan. The most critical areas from a data exchange perspective are deciding on the detailed market model, defining the business processes, designing the data exchange mechanism, writing the detailed specifications and coding, testing and deploying the changes to market participants systems.

2. Guidelines directing the work

Based on the general targets set by NordREG and the TF's own considerations, the following overall guidelines have been defined to steer the work;

- The common Nordic end-user market should be open to all end customers
- It should be safe and easy for the end customer to buy electricity from any Nordic supplier
- It should be safe and easy for Nordic electricity suppliers to be active in any Nordic market and to sell electricity to any Nordic customer
- The harmonization of the Nordic end-user market should be done in a cost effective manner
- The incentives of the market actors should be such that good quality in e.g. message handling is rewarded
- Market rules should be clearly defined, harmonized, transparent, predictable, robust and governed at the Nordic level – both in terms of timing and content of any future changes

3. Working method

The assignment is a part of larger task, with many dependencies. In order to give advice on detailed solutions, the guiding principles and targeted functionalities should be defined. This has partially been done in the target market model description, but there are still open issues that heavily impact the data exchange area. As a consequence, the following working method is applied;

- Information sharing in task force workshops
- Top down approach starting with guidelines
- Agreement on principles governing work going forward
- High level activity identification and planning

This approach supports the ambition to provide a good foundation and an overall roadmap for the further work.

The task force has received comments from the other task forces as well as other market actors and has considered their input in the final report.

4. Overall conclusion

Data exchange in the electricity market is one of the most critical processes for a well functioning market. It should be designed to ensure high data quality, high data availability, correct incentives for each market participants and to be as efficient and stable as possible. The challenge lies in the huge amount of data that needs to be exchanged between market participants and that amount is growing as the implementation of AMM metering and hourly metering is rolled out on a large scale.

Therefore the design needs to be done carefully and using the best professionals in the field of IT data architecture. A prerequisite for doing this successfully is also that the market model and the future common Nordic business processes are defined before the design phase. Therefore the TF Data Exchange is not coming with any recommendation of what the architecture should look like, but the design phase is scheduled for 2012, when the above mentioned tasks have been settled.

It should also be noted that the four Nordic countries currently have different set-ups for the data exchange and that sufficient time has to be reserved to enable adapting to the future common Nordic market set-up.

5. Guiding Principles for the Common Nordic End-user Market, from the data exchange angle

A core deliverable of the work is the guiding principles for a Nordic end-user market, from the data exchange perspective. The listed principles partially overlap the information in the target market model description, but the TF finds it important to summarize the key elements that are essential to enable efficient high-quality data exchange. The TF's view is that the principles below are not contradictory to the corresponding sections in the "Target market model" draft report.

Guiding principles;

- **The message exchange should be designed to support one harmonized Nordic solution for each business process.** Today this has been standardized on a national level and therefore it is only natural that it would be standardized on a Nordic level when moving to a common Nordic end-customer market. Also the level of detailing should be increased to reduce the possibilities for interpretations.
- **The message exchange should be designed so that best practice from each country is safeguarded.** In building a common Nordic end-customer market the idea is that the markets should be harmonized and the markets in all four countries should develop from today. Therefore we should not be looking for the "*least common denominator*". On the other hand this principle should not be abused to stall the development of the common Nordic market.
- **The message exchange should be as future proof as possible with regards to all presently known technical, political and regulatory aspects (e.g. EU).** Changing data exchange standards is very costly for the industry and we should not do it too often. Therefore e.g. the EU development should be followed closely to ensure that we do not need to change standards shortly after the Nordic harmonization.
- **Message exchange rules should be compulsory and governed by one body at the Nordic level with a clear mandate to resolve interpretation disputes.** Today the industry is relying too much on recommendations, which does not exclude applying different standards and processes. This is clearly a cost driver for the industry and should be changed into compulsory standards.
- **Message exchange rules should clearly define who owns the data throughout the data exchange – including data quality accountability and data creation/updating/reading and deletion rights.** Low data quality is a common problem in all countries and measures should be taken to improve data quality and the data exchange should be designed to ensure further improvements over time.

- **Message exchange rules should clearly define the financial accountability for poor data quality - including actor compensation and conflict resolution method.** Low data quality can have very big financial impact also on other parties in the market than the party responsible for the low data quality. Compensation methods are required for this and to create incentives to strive for further data quality improvements.
- **Message exchange rules should include instructions on data format and content validation of all messages exchanged.**
- **Message exchange rules should include instructions on how to treat deviations so that commonly occurring exceptions handling can be automated in IT systems (e.g. supplier switch cancellations).** There are some commonly re-occurring exceptions that today are handled manually. Creating standardized processes for some of these exceptions would improve cost efficiency.
- **Message exchange rules should be designed with IT system performance in mind (e.g. allowing for transaction smoothing across all days of the month and not sending more information than needed).** The amount of data needed to be exchange between parties is huge and will be a strain on IT system performance. Therefore the detailed architecture and design should be based on the best practices in IT system performance.
- **The new data exchange rules should be scheduled to allow for sufficient time for process and system design, specification, coding and testing (typically 2-3 years).** Changing data exchange standards will require extensive system updates and testing for all market participants. The time required for this should not be underestimated. Also the specifications and standards will be required on a very detailed level before this work can commence.

6. Road Map

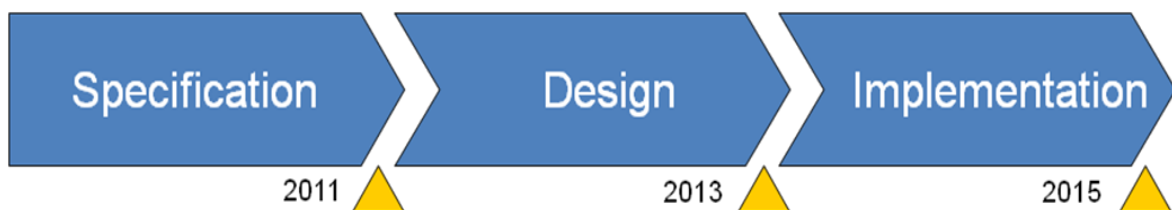
The technical detailing is of utmost importance for a cost efficient and robust implementation and operation of a Nordic end-user market. The work is extensive and dependent on well-specified targets and functionalities. There are complex dependencies between the Data Exchange road map and the other areas.

The road map is based on the above described guiding principles and aims at giving a foundation for building the overall road map for the total implementation of a Nordic end-user market. Iterations will be needed.

At the same time it is clear that much work is required in order to get to a common Nordic end-customer market and many of the tasks need to be performed consecutively. This has two consequences. Firstly the work needs to be started quickly in order to reach the targeted harmonization level by 2015 (note that further harmonization will also be needed thereafter). Secondly it also means that in case there is a delay in any of the tasks, the possibilities to regain the time lost are slim and this could easily delay the overall time plan.

Many of the tasks in the road map need to be executed consecutively (deciding on the detailed market model, defining the business processes, designing the data exchange mechanism, writing the detailed specifications and coding, testing and deploying the changes to market participants systems), which means that a delay in one area very easily will delay the whole time plan and delay the implementation of the common Nordic market.

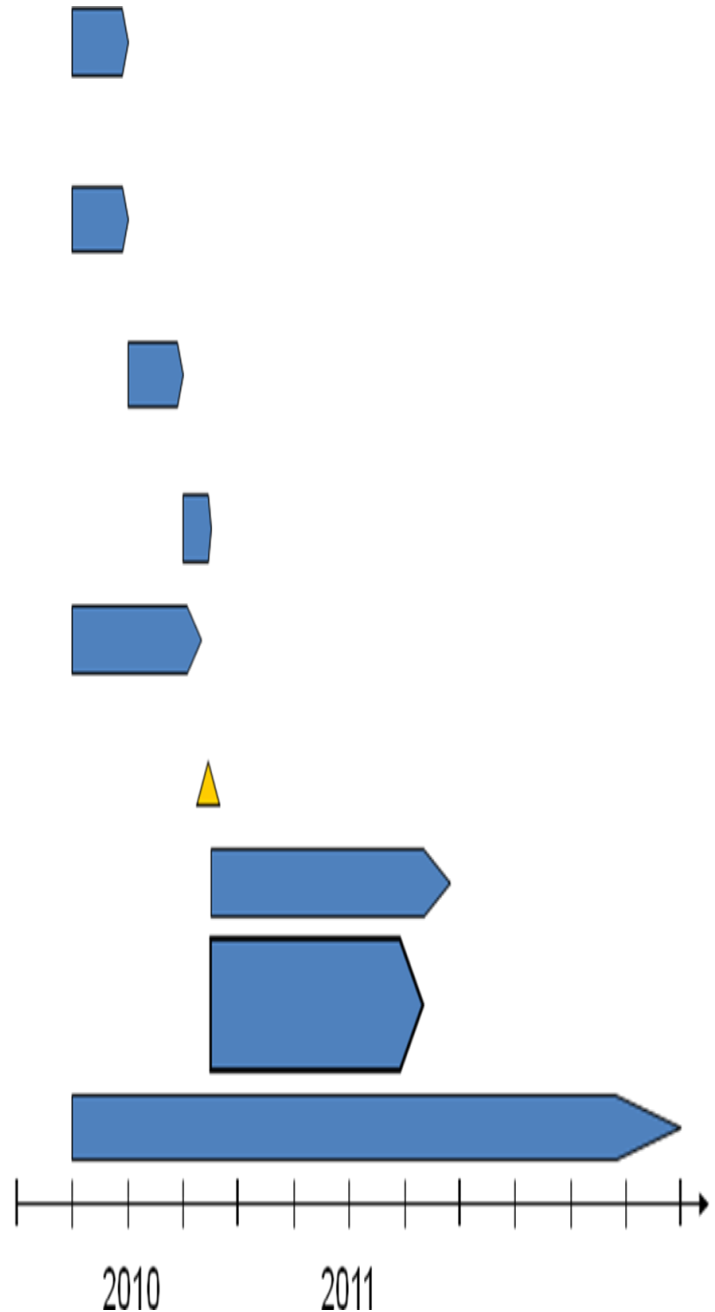
Way forward



The road maps for each section (Specification, Design and Implementation) are described below.

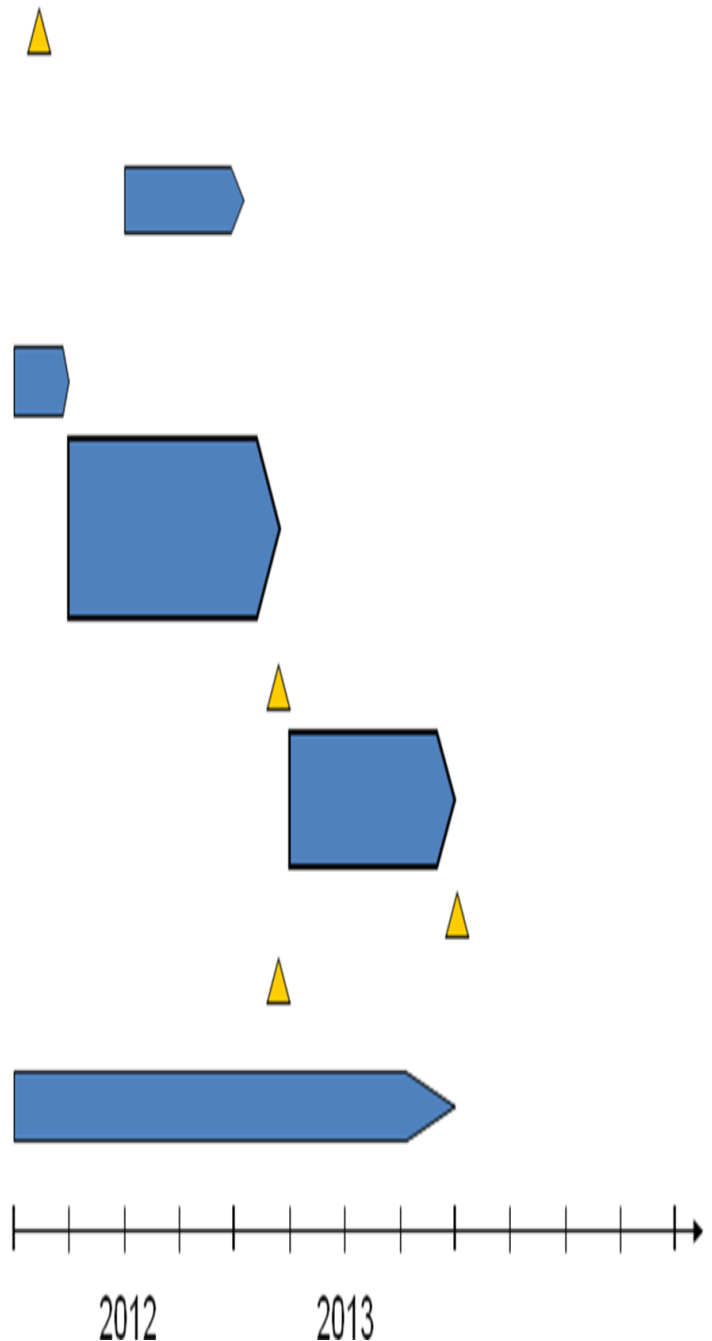
Detailed Road Map – Specification

- Ask for and receive input from other task forces on the market model and the responsibilities of the different parties (including data ownership)
- Benchmark other EU solutions for supplier centric model, business processes, data exchange etc
- Make high level suggestions for future common Nordic business processes for key processes
- Do a cost-benefit analysis of the suggested changes
- Make an inventory of national legislation and rules to indentify best practice and what needs to be harmonized
- Validate and confirm principles and market model
- Prepare future harmonized legislation
- Make detailed specification for future common Nordic business processes for all business processes
- Check that the set-up is in line with the EU development



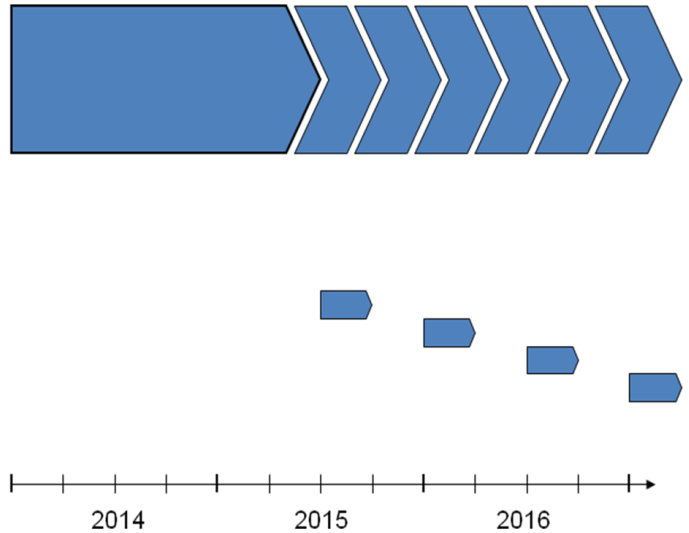
Detailed Road Map – Design

- Appoint Nordic body to be the decision making body for defining and interpreting market rules
- Operationalize Nordic body for supervising and interpreting market rules as well as for managing harmonized updates of rule set
- Appoint expert team with deep technical and process expertise
- Design the future message format & exchange mechanism (xml or EDI? data hub or central data base or not? ftp, smtp, MQ?)
- Decide on message format & exchange mechanism
- Write technical specifications on the data exchange (formats, content, etc.)
- Decision on detailed technical specifications and roll-out plan
- Decide if certification is needed before any system updates are taken into use
- Adapt the national legislation (Nordic co-ordination)



Detailed Road Map – Implementation

- Code, test and deploy market participants systems to the future Nordic Market model and data exchange standards
- Roll-out new data exchange processes (possibly phased as one process at a time)



APPENDICES

A. Participant in Task Force Data Exchange

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