

# Status Quo and Future of European Market Coupling Company

Enno Böttcher  
NorNed Workshop  
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# AGENDA

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**Top 1 – Status quo of EMCC**

Top 2 – Future scope and implications for NorNed

Top 3 – Outlook

## EMCC`s current focus

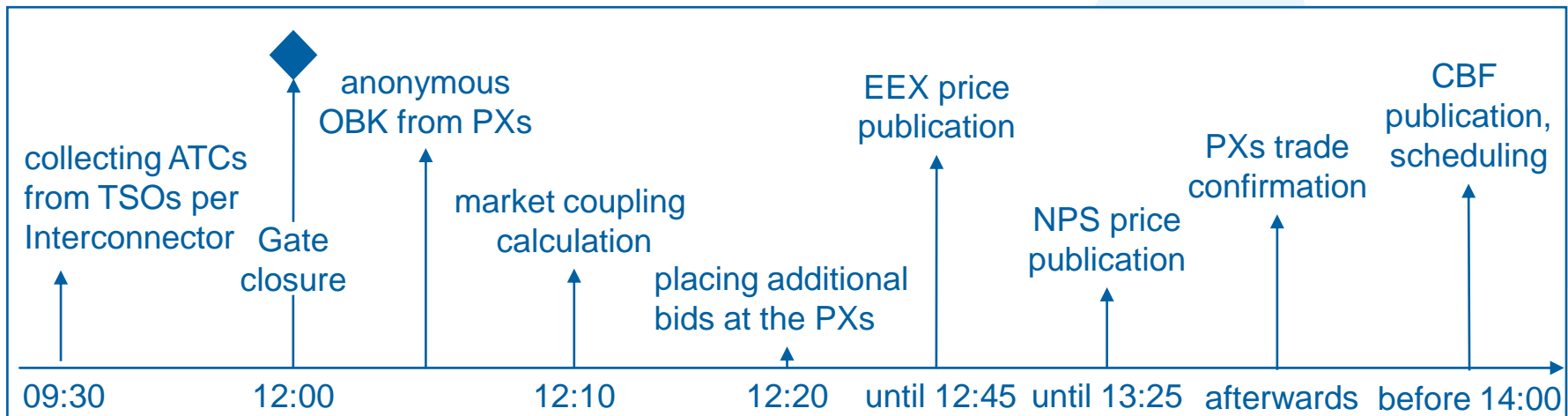
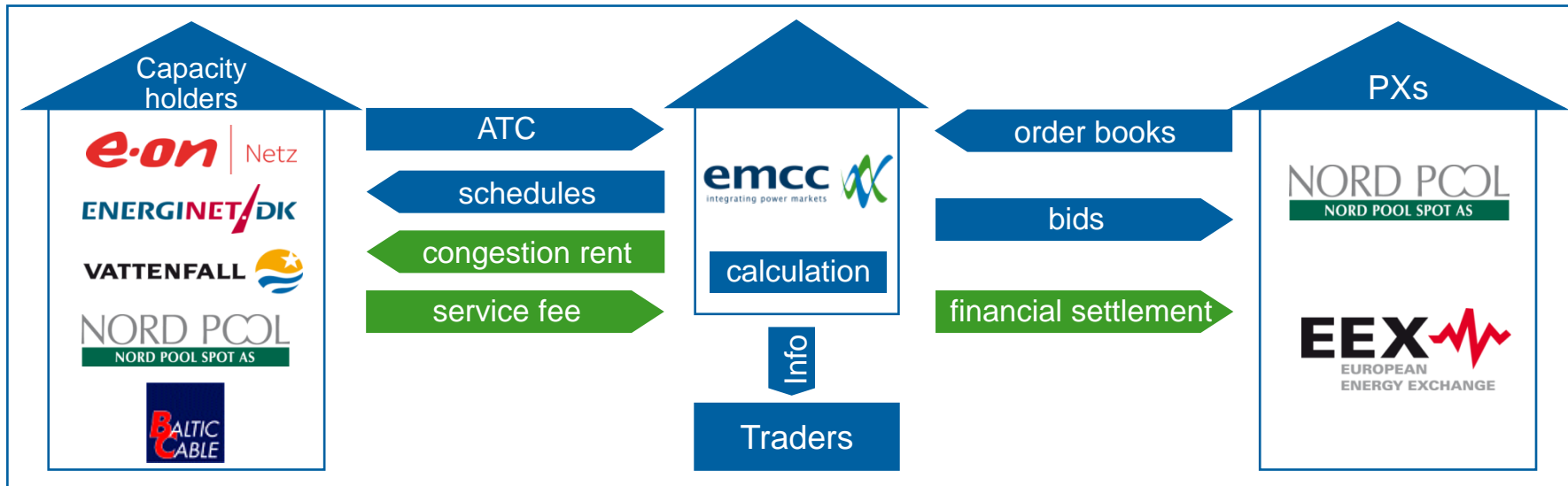


### Current scope of EMCC:

- 1** **Interconnector** between DK West - Germany (NTC: 950/1,500 MW)  
Capacity holder: E.ON Netz, Energinet.dk
- 2** **KONTEK** between DK East - Germany (NTC: 550 MW)  
Capacity holder: Energinet.dk, Vattenfall AB, Vattenfall Europe Transmission
- 3** **Baltic Cable** between Sweden and Germany (NTC: 600 MW)  
Capacity holder: E.ON Sverige, Statkraft

**Baltic Cable will be included in EMCC`s activities after a successful relaunch of market coupling.**

## EMCC daily operational flow



## The analysis after the suspension of market coupling was successful

Phenomena	Reasons	Identified
<p>Adverse flows</p> <p>Unused capacity despite price difference</p>	<ul style="list-style-type: none"> <li>• Price determination and capacity utilisation for neighbouring areas</li> </ul>	<p>✓</p>
	<ul style="list-style-type: none"> <li>• Price determination and capacity utilisation in case of vertical parallel and overlapping curves</li> </ul>	<p>✓</p>
	<ul style="list-style-type: none"> <li>• Different handling in the Block Bid Selection</li> </ul>	<p>✓</p>
	<ul style="list-style-type: none"> <li>• Different handling in the Block Bid Conversion functional rule</li> </ul>	<p>✓</p>

→ The phenomena had occurred during the testing and simulation period occasionally, but were fixed.

→ The analysis showed that the combination of these four reasons are due to a different interpretation (solving methodology) of the economic welfare criterion and not implemented constraints respectively.

→ These minor differences had major impacts on the market, especially on DK1.

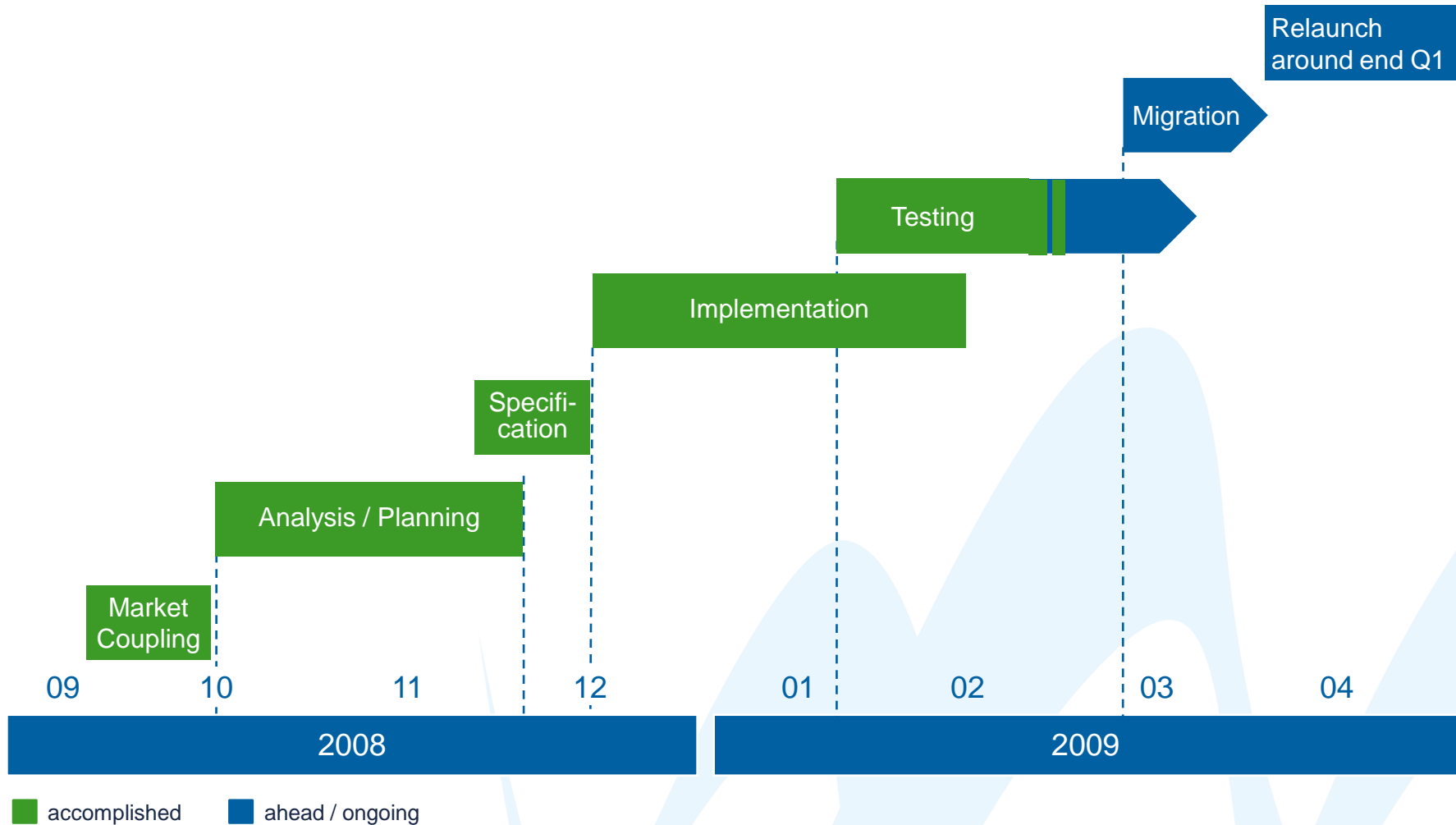
## Based on the analysis, the system algorithm was improved (1/2)

Changes	Relevance
<p><b>Control of flow direction</b></p>	<p>The EMCC IT-Service Calculation Engine will be enhanced. A flow control will prevent power from flowing from a high price area to a low price area, except from cases where negative prices or ATC values require this.</p>
<p><b>Block bid conversion</b></p>	<p>In future, the system will include a function for the conversion of block bids. If required, block bid conversion can be active and a converted block bid will then result in an hourly bid curve.</p>
<p><b>Price selection</b></p>	<p>In case of vertical overlapping curves, the minimum price will be selected if the cable to the neighbouring area is congested. If not, the price of the neighbouring area will be selected (this is the NPS selection method).</p>

## Based on the analysis, the system algorithm was improved (2/2)

Changes	Relevance
<p><b>Block Bid selection</b></p>	<p>The algorithm is divided into 2 phases. The problem is approximated by solving a linearised MILP, i.e. the social welfare is approximated by as piecewise linear function. The approximation includes all ATC and ramping constraints, as well as block and flexible bid price conditions and block linked conditions. The results serves as an approximation.</p> <p>Using the above selection, a QP without block and flexible bid price constraints is solved. If an included block or flexible bid is incompatible with the calculated prices, it is removed from the selection, and the problem is resolved. This is repeated until all included block and flexible bids are compatible with the market prices. The step returns a valid solution in the sense that all capacity and price conditions are satisfied.</p>

## Our relaunch plans are in time!



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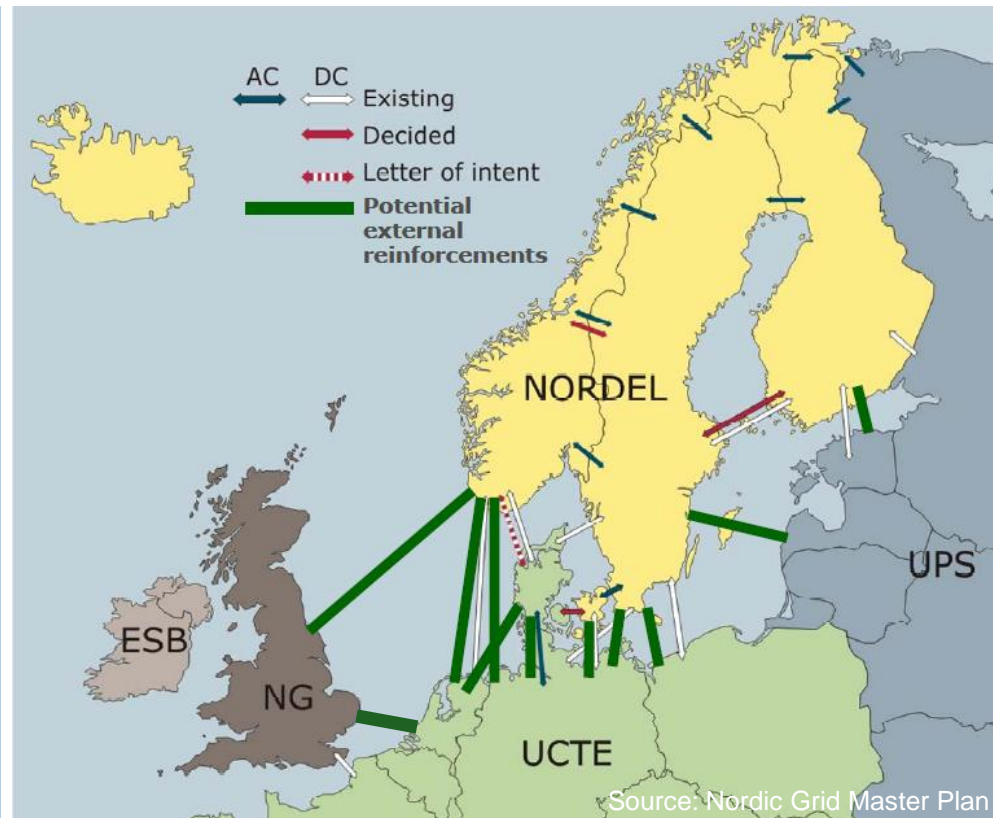
## EMCC`s general future scope

The Nordic Grid Master Plan foresees several reinforcements :

- Nordic-Continent
- Nordic-UK

EMCC`s business focuses on these existing and potential interconnectors, and markets.

EMCC considers itself as the central auction office for market coupling between the north of the continent and the Nordic countries as well as a potential dome coupler.



**EMCC is designed to allow the extension of its services to other interconnectors or markets.**

## EMCC`s business opportunities in the near future



### Future opportunities:

- ←--→ **4 NorNed** between Norway and The Netherlands  
(NTC: 700 MW)  
Capacity holders: Statnett and TenneT
- ←--→ **5 SwePol** between Sweden and Poland  
(NTC: 600 MW)  
Capacity holders: Svenska Kraftnät, Vattenfall, Polish Power Grid Company

## Implications for NorNed

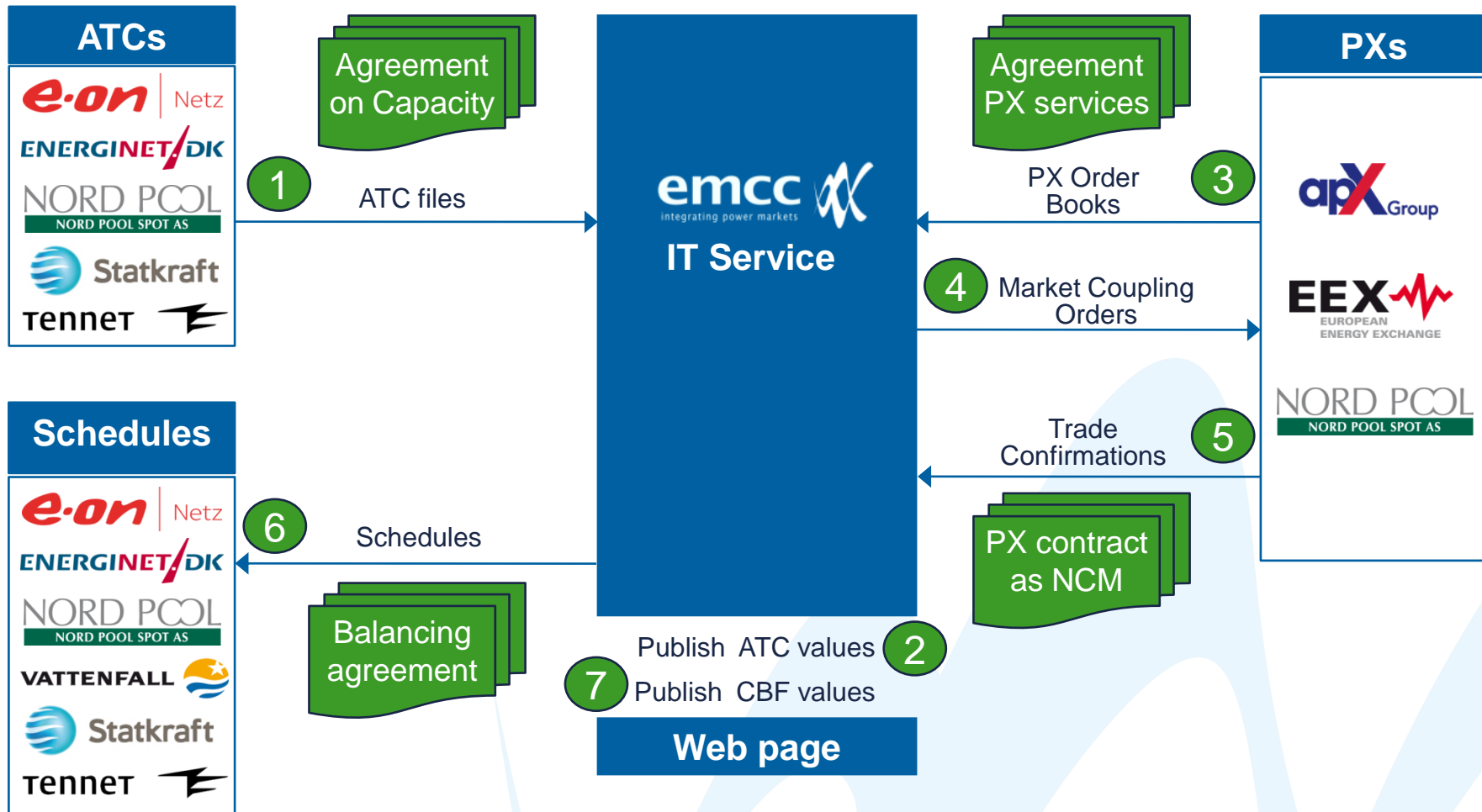


Prerequisites	Fulfilled
• Extension of operator license of OED for explicit auctions	✓
• Grid code change in The Netherlands	x
• Launch 12:00 hrs gate closure time	x
• Technical integration of the APX rules	x
• Resolution of governance issues	x
• Discussion on contractual issues	x
• Simulation of tests environments	x
• Communication of results to the market	x

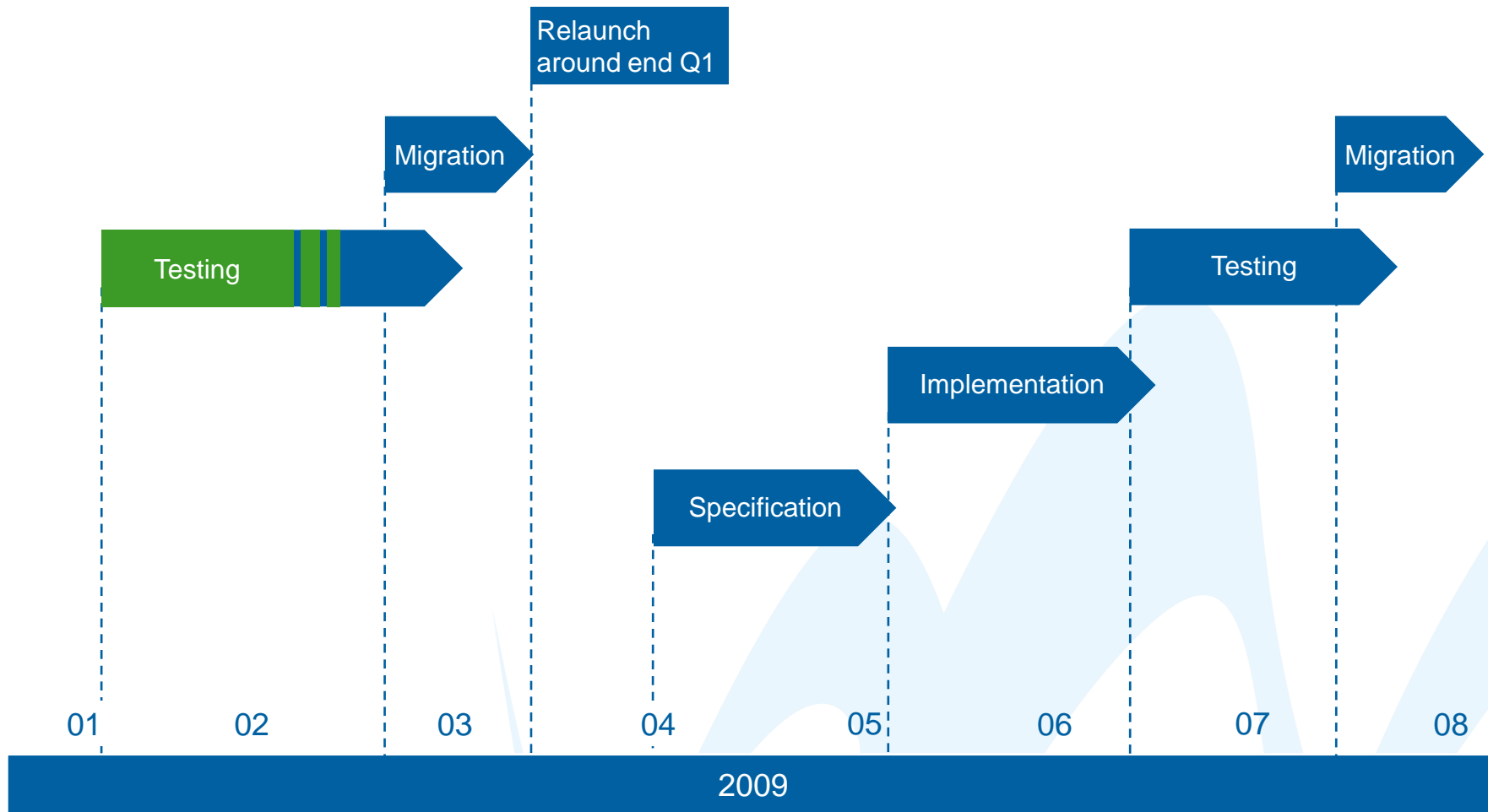
**Market coupling with EMCC will be advantageous for the NorNed parties:**

- Coupling can be implemented relatively quickly
- It can be a potential enduring solution

## Interfaces and contracts for MC services to NorNed



## Schedule proposal for NorNed: system readiness by Q3 2009



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## Our aims for the relaunch



### ...with regards to our system

- Eliminating adverse flows unless capacity constraints require this, e.g. ramping
- Delivering quality, i.e.
  - The reliability of the system and its results are our priority
  - The readiness of our system will be certified by an external analyst
- Communicating the exact relaunch date in time so that the market can prepare

### ...with regards to market coupling

- Maximising of the social economic welfare
- Maximising the utilisation of the given capacity
- Promoting the integration of the European power market
- Becoming the preferred choice for exchanges and cable owners to coordinate market coupling

## Contact

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