ENTSO-E Pilot Projects on Cross Border Balancing
3rd Stakeholder Workshop

Pilot Project 2: Cross-border Market for FCR based on TSO-TSO Model

17 December 2014 - Brussels

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Swissgrid - TSO Markets Development Group
Outline

- Introduction
- Phase 1
  - Project Overview
  - Details
  - Implementation
  - Experiences and lessons learnt, SWOT Analysis
- Phase 2
  - Project Details
  - Project Timeframe
- Conclusion
Introduction

- Single FCR-focused Pilot Project
- Based on the TSO-TSO model, in accordance to framework guidelines and NC EB
- Complete merging of two national markets, not occasional collaboration
- Cross-border FCR market for AT-CH, implemented within 1 year
- Successful start and good development in the market
- Organizational design and system framework allow an easy and quick extension to other TSO-members
- Extension to TSOs of Germany, Netherlands and Denmark foreseen for 2015
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Cooperation is based on a TSO-TSO-model:
- Suppliers only have contractual relationship with the connecting TSO

Joint project between APG and swissgrid

Market properties:
- Demand (2014)
  - AT = 71MW
  - CH = 46MW out of 71MW
- Weekly auctions
- Not harmonised products
  - Divisible bids in AT
  - Non-divisible and conditional bids in CH
**Auction Process**

- Suppliers bid in the national platforms
- The CCS calculates the market clearing
- The results are sent to the national platforms and the operators verify and accept the results

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**Project Details – Phase 1**

- **Phase 1**
  - Pilot projects
  - Stakeholder workshop
    - 17 December 2014, Brussels
Common Optimization Principle

- Minimize the total procurement costs for CH-AT
- Subject to the following constraints
  - Total amount auctioned for FCR: 117 MW for 2014
    (46 MW for Swissgrid and 71 MW for APG)
  - Maximum exchanged amount for neighboring areas (ENTSO-E rule)
  - Core value of 30%
  - Special Market Rules
    - Block Bids, Conditional Bids (CH)
    - Divisible Bids (AT)
- Common Clearing Function: mixed integer linear programming
Settlement principle

- Settlement scheme: pay-as-bid due to exchange of reserves
- Each TSO may profit from the cheaper remaining bids of the other TSO, without resulting in a disadvantage for the second
- Principle that guarantees profits for all involved parties, avoiding cross-subsidizing
- Approved by NRAs
### Fulfillment of tasks – Phase 1

- **Project Plan**

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- Tasks fulfilled on time
- Project completed in less than 1 year
- First common auction on 3rd July 2013 for KW 28
Experience and lessons learnt – Phase 1

- **Price development**

![Graph showing price development over time with data points for May 13 to November 14 for different countries: CH, AT, XB. The graph includes months from May 13 to November 14 with corresponding price values.]
Experience and lessons learnt – Phase 1

- Exchange of reserves

![Bar chart showing MW exchange over Calendar Week 2014](chart.png)

- AT -> CH
- CH -> AT
SWOT Analysis – Phase 1

**Strengths**
- Pioneer example of a clear TSO-TSO Model
- Fair governance
- Modern and flexible Software and System architecture
- Ability to consider different types of bids

**Weaknesses**
- Obstacles encountered in implementation were faced in timely manner
- Cooperation project implemented in small markets with similar characteristics

**Opportunities**
- High liquidity and competition in the market leads to lower FCR procurement costs
- Applicability to different Ancillary Services Products
- Easy to extend the cooperation with participation of other TSOs

**Threats**
- Back-up systems to be defined
- Computation can be forwarded to individual systems
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Meeting of NRAs of AT, CH and DE in August 2013 in Vienna. Encouragement to establish a collaboration based on the TSO-TSO principle and close to the AT-CH-model.

First meeting with TSOs from Germany on 15.10.2013 in Zurich.

Feasibility studies conducted. Results presented in December 2013 in Vienna.
- Business case
- Harmonization needs
- System architecture
- Settlement principles

March 2014: decision for extending the collaborations with TSOs from Germany, Netherlands and Denmark.

Project plan approved with expected GoLive end of Q1 2015.
## Project time plan - phase 2

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<td>Concept and process definition</td>
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### Concluding remarks

#### General
- Cross-border FCR market for AT-CH, implemented within 1 year
- Based on the TSO-TSO model, in accordance to Framework Guidelines and NC EB

#### Risks or legal/regulatory issue
- Regulatory Risk: Participation of Denmark not yet supported by German NRA due to concerns about lack of cross-border capacity

#### Project Co-ordination and Merging
- Organizational design and system framework allow an easy and quick extension to other TSO-members
- March 2014: decision for extending the collaborations with TSOs from Germany, Netherlands and Denmark
- Extension foreseen to GoLive end of Q1 2015
Thank you for your attention

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