Market RES

Minutes and recommendations of the expert workshop and follow-up stakeholder consultation process & stakeholder event allocated to work in WP2

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1.0	[2015-04-30]	EEG	Prepared draft
1.1	[2015-05-20]	EEG	Incorporated comments from Andrei Morch

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List of Abbreviations

AB	Advisory Board
ACER	The Agency for the Cooperation of Energy Regulators
CA	Consortium Agreement
CM	Consortium Meeting
CRM	Capacity Remuneration Mechanism
CWE	Central West European
DoW	Description of Work
EASME	Executive Agency for Small and Medium Size Enterprises
GA	Grant Agreement
IEE	Intelligent Energy Europe
KPI	Key Performance Indicator
NC	Network Code
SC	Stakeholder Consultation
SoS	Security of Supply
TM	Target Model
TSO	Transmission System Operator
WP	Work Package
WS	Workshop

List of partners in Market4RES project

01 SINTEF

02 EWEA

03 EEG

04 EPIA

05 3E

06 TECHNOFI

07 IIT-COMILLAS

08 RTE

09 IBERDROLA

10 APX

11 FOSG

1 WP2 Expert Workshop "Challenges Ahead in European Electricity Market Design"

Venue: Martin's Brussels EU Hotel, Boulevard Charlemagne 80, 1000 Brussels, BE

Date: 16.10.2014

1.1 Invitations to WP2 Expert Workshop

In the last decade, the European electricity market has been gradually developed. Although many achievements can be mentioned there are still many challenges ahead having to be solved to meet the EU policy goals up to 2020 and beyond.

Besides the continuous further development of the electricity markets in the different European countries also a continuously increasing shares of RES-E generation technologies has been achieved, not least thanks to favourable financial support instruments.

In the recent past, however, inherent lacks and distortions of electricity market design accompanied with high shares of RES-E generation increasingly have made apparent the challenges in so-called "energy-only" markets, meaning that a multitude of adverse effects has been occurring for many market participants as there are e.g.

- Partly negative wholesale electricity market prices
- Significantly reduced operation time of thermal power plans
- Interdependences with and adverse effect on the heat market in case of CHP-plants
- Lack of future investments into firm generation capacities
- Many others

This finally raises the question on how to amend the currently existing European electricity market design to guarantee sustainable framework conditions in the long-term for both market-compatible integration of further RES-E technologies and maintenance of adequate firm electricity generation capacities.

Several of the above mentioned challenges are addressed in the European IEE-project Market4RES. In this special expert workshop we'd like to address – together with your help and your inputs – the following questions in particular:

Long-term electricity market

- Is it reasonable to think that the implementation of the 'Target Model (TM)', as now devised, will result in strong enough incentives for investing in the new generation that the system will require?
- If this is not the case, how the TM should be complemented to achieve this?
- Do you think Capacity Remuneration Mechanisms are necessary?
    - What type of CRM is more suitable (capacity payments, mechanisms involving very long term contracts for RES generation and/or conventional generation, etc.)

- Do you think it is reasonable that demand response participates in CRMs?
- Is it necessary to regulate/coordinate national CRMs at a regional level?
- Can "neighbours" provide long-term security of supply? How?

Day-ahead electricity market

The target model comprises a well-defined design for day-ahead markets. As far as the functioning of this market is concerned:

- Do you think the day-ahead market (Price Coupling of Regions (PCR)), as now devised, is flexible enough for market agents to reflect in their bids their real operation costs and constraints?
- Should all cross-border capacity be allocated by the PCR?
- Are price areas considered in the Integrated European Market (IEM) of the EU reflecting accurately enough congestion in the European grid? If not, how these areas could be modified?

Very short-term electricity market

Regarding the definition of closer to real time markets than the day-ahead one:

- Do you think a continuous short-term market is preferable over a series of intra-day ones?
- Do you think it is possible to achieve in the 2020 time frame the integration of balancing markets? Which obstacles are there to achieve this?
  - How responsibilities for power imbalances should be settled?
  - Do you believe demand could participate in very-short term markets? Could RES generation provide regulation reserves?
  - Can "neighbours" provide real time operation services?
  - How this could be articulated?

To answer several of the questions above, the Market4RES Consortium continuously discusses and exchanges its ideas with European experts and associations in the field in order to comply also with the policy discussion to further develop the European electricity market.

1.2 List of Participants

Name	Organisation
Ahcin Peter	SINTEF Energi AS
Auer Hans	TU Wien
Burgholzer Bettina	TU Wien
Dourlens Sophie	TECHNOFI SA
Flament Aurore	3E NV
Guarrata Angela	Becker-Büttner-Held Rechtsanwälte-Wirtschaftsprüfer-Steuerberater
Hoeksema Joël	APX Group
Huertas Hernando Daniel	Entso-e
Joseph Pieter	3E NV
Kreusel Jochen	ABB AG
Kunze Christian	Swissgrid AG
Langer Yves	APX Power B.V.
Lantrain Aurore	EPEX SPOT SE
Lorenz Gunnar	Eurelectric
Loureiro Ricardo	REN/FOSG
Morch Andrei	SINTEF Energi AS
Olmos Luis	Universidad Pontificia Comillas
Papakonstantinou Athanasios	DTU Electrical Engineering
Pineda Iván	European Wind Energy Association-EWEA
Rekinger Manoël	European Photovoltaic Industry Association- EPIA
Rodilla Pablo	Universidad Pontificia Comillas
Thies Frauke	European Photovoltaic Industry Association- EPIA
van Wanrooij Esther	TenneT TSO B.V.
Wilczek Paul	European Wind Energy Association-EWEA

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Name	Organisation
Howard Richard	The Crown Estate
Graeber Dietmar	EnBW
Balke Joachim	DG ENER, Unit C.1 RES and CCS Policy

1.3 Final Agenda

10:00-10:15	*Welcome coffee*
10:15-11:30	**Introduction: Challenges in the European Electricity Market** Welcome from the Project Coordinator Andrei Morch, Sintef Keynote: ACER's Contribution toward a Single European Energy Market N.N. (ACER Representative to be nominated) Background of the Energy-Only Market Problem Hans Auer, EEG TU-Wien Brief Introduction to the Diagnosis of the European Target Model Luis Olmos, IIT-Comillas Introduction to the Group Work (Outline of major questions (see introduction) to be addressed in the next session) Hans Auer, EEG TU-Wien & Luis Olmos, IIT-Comillas
11:30-11:45	*Coffee break*
11:45-13:00	**Parallel Working Groups** Work in the Parallel Working Groups All Participants
13:00-13:45	*Lunch*
13:45-15:15	**Presentation of Working Group Results, General Discussion** Presentation of Working Group Results Representative of Each Working Group General Discussion All Participants Summary, Concluding Remarks Hans Auer, EEG TU-Wien
15:15	*End of Expert Workshop*

1.4 Introduction: Challenges in the European Electricity Market

Agenda point	*Conclusions and actions*
Introduction Andrei Morch, Sintef	Andrei Morch welcomed several of the participants and gave a brief introduction into the Market4RES project.
Keynote from ACER	Unfortunately, the foreseen speaker from ACER, Mr. Martin Povh, could not attend the workshop due to another short-term obligation at the same time. Therefore, ACER's keynote address was cancelled.
Background of the Energy-Only Market Problem Hans Auer, EEG	After the presentation of Hans Auer on the energy-only market background, the following major question was raised: How far did you consider the scarcity pricing? Price caps? Hans: Do customers need 100% supply in every hour? The implementation of scarcity pricing would trigger demand response! Ivan: It is very important to respect demand response in the project. Interconnection capacities are also important concerning countries with high generation capacities and neighbouring ones with less. Pablo: Price caps and the missing money problems are very important issues. The lowest price cap in Spain appears three times a year. One of the reasons could be that demand has not grown as expected. Only 5% are used of thermal capacity. At the moment there is the problem of too much capacity in Spain and each of them can't earn enough money to work profitable. Hans: In Spain there are many problems with existing gas fired power plants. At the moment it is not possible for the power plant operators to operate profitable without changing the system.
Brief Introduction to the Diagnosis of the European Target Model Luis Olmos, IIT Comillas	Question from Tennet: Network Code Hypothese. Do you give some directions for the implementation of the TM? Luis: In work package 2 the diagnosis of the European Target Model only comprises the search of lacks. Appropriate directions will be delivered by other work packages like in WP 3, 4 and 5. Question from Eurelectric: Are there Interviews with Stakeholders concerning TM Implementation planned? EUPHEMIA. Luis: Yes, e.g. at the WP 3 expert workshop, which will be in April 2015. Question from Eurelectric: How do you come to the Network Codes? Do you look at the process? Luis: Only focusing on regulation itself.
Introduction Group Work: Hans Auer, EEG	Question from Tennet: Generation adequacy is not only a long-term problem it's also a short-term problem, do you consider both? Hans: Yes, we will consider both and also the interdependencies.

Gunnar Lorenz from Eurelectric briefly summarized the official position of Eurelectric in this context and handed over the corresponding public document from his association: "Renewable energy and security of supply: Finding Market Solutions" Reference link: http://www.eurelectric.org/media/154655/res_report_140919_lr-2014-030-0569-01-e.pdf.

2 The WP2 Stakeholder Consultation "Challenges for RES-E deployment in the European electricity market" (combined with WP3 Expert Workshop)

Venue: Silken Berlaymont, Boulevard Charlemagne 11-19, 1000 Brussel, BE

Date: 16.10.2014

2.1 Invitation to WP2 Stakeholder Consultation "Challenges for RES-E deployment in the European electricity market"

Special focus of the Stakeholder Consultation will be on the implementation status and the market-focused diagnoses of the European Target Model. This will be underpinned by empirical analyses in selected European market regions (Nordel region, CWE region and Iberian region) emphasising the challenges in the very short-term, short-term and long-term electricity markets in Europe with high shares of RES-E penetration, which we would like to discuss with you. In detail this means that several findings of the written consultation process during WP2 (investigating the regulatory status of the Target Model) are discussed within this event to reach a common understanding among several experts. The outcomes of this discussions and conclusions will be fed into the further work.

In the last decade, the European electricity market has been gradually developed. Although many achievements can be mentioned there are still many challenges ahead having to be solved to meet the EU policy goals up to 2020 and beyond.

Besides the continuous further development of the electricity markets in the different European countries also continuously increasing shares of RES-E generation technologies have been achieved.

In the recent past, however, lacks of currently implemented electricity market designs in the developing context and distortions in system operation created by them have become apparent.

- Some major problems of current markets follow:
- Partly negative wholesale electricity market prices
- Significantly reduced operation time of thermal power plans
- Interdependences with and adverse effect on the heat market in case of CHP-plants
- Lack of future investments into firm generation capacity
- Insufficient development of transmission grids required
- Possible lack of flexibility in the system to absorb changes in power production from intermittent RES generation

Changes are to be made to the design of currently existing markets with the aim to overcome the above-mentioned problems. Thus, following the stakeholder consultation event, we have organised a special expert workshop where we would like to further discuss with you, experts in the field, possible market design options for future market developments and the assessment of

these options. This should allow us to keep up to date with latest developments concerning solutions implemented to the main problems of the functioning of existing markets. Attendees will be encouraged to contribute to live discussions organized on the strong and weak points of design options identified for market developments to be implemented. Besides, you will also be able to provide feedback on the assessment of design options explored using forms that will be made available to attendees.

Market developments to be discussed should concern both long term and short term markets. A list of most relevant pending market design issues that we would like to focus on, follows:

Long-term electricity market

- Possible use and design of Capacity Remuneration Mechanisms (CRMs)
- Long term support payments to RES generation
- Participation of demand in long term markets
- Long term cross-border products

Short, and very short, term electricity market

- Evolution of the network model considered in short term markets
- Timing of short term markets
- Bidding protocols and pricing
- Balancing market evolution
- Short term support payments to RES generation

2.2 List of Participants

First Name	Last Name	Company/Organisation
Peter	Ahcin	SINTEF Energi
Hans	Auer	EEG - University of Wien
Fontaine	Aurèle	RTE
Luca	Bragoli	ERG S.p.A
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Sonia	Clarena Baron	EUTurbines
Gerda	de Jong	TenneT TSO B.V.
Elena	Dufour	European Solar Thermal Electricity Association - ESTELA
Aurélie	Faure	IFRI
Aurore	Flament	3E
Georgios	Giannopoulos	Elia
Willi	Harz	EnBW AG
Maria	Hoeft	BWE
Jing	Hu	Copernicus Institute of Sustainable Development, Utrecht University
Uli Daniel	Kaim	Iberdrola
Yves	Langer	APX
Aurore	Lantrain	EPEX SPOT
Ricardo	Loureiro	REN
Andrei	Morch	SINTEF Energy Research
Luis	Olmos	IIT-Comillas
Mike	Parr	PWR Ltd
Iván	Pineda	European Wind Energy Association - EWEA
Nicola	Rega	Confederation of European Paper Industries
Manoël	Rekinger	European Photovoltaic Industry Association - EPIA
Frauke	Thies	European Photovoltaic Industry Association - EPIA

First Name	Last Name	Company/Organisation
Paul	Wilczek	European Wind Energy Association - EWEA
Sharon	Wokke	European Wind Energy Association - EWEA
Diletta	Zeni	European Wind Energy Association – EWEA
Carlos	Del Olmo	Abengoa
Verhaegen	Ruben	3E

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First Name	Last Name	Company/Organisation
Marcel	Bial	European Solar Thermal Electricity Association - ESTELA
George	Charalampous	University of Macedonia
Federico	d'Alberti	Enel S.p.A.
Sven	Frischemeier	E.ON SE
Tanja	Hickel	European Energy Exchange
Daniel	Huertas Hernando	ENTSO-E
Kimberley	Kilpatrick	Tew LLC
Pablo	Rodilla	University of Comillas
Hannes	Schumacher	EnBW Energie Baden-Württemberg AG
Natalia	Timofte	Power Engineering Institute of ASM
Andrea	Villa	Enel S.p.A.
Judit	Zegnál	Bruxinfo - Hungarian News Agency

2.3 Final Agenda

9:30-10:00	*Welcome coffee*
10:00	Welcome from the Project Coordinator Andrei Morch, Sintef **Introduction to Stakeholder Consultation Event "Challenges for RES-E deployment in the European electricity market"** Implementation status and market-focused diagnoses of the European Target Model Luis Olmos, IIT-Comillas Outline of the empirical case study analyses emphasising the challenges in the very short-term, short-term and long-term electricity markets in Europe Aurore Flament, 3E Brief Discussion All Participants
11:15-11:45	*Coffee break*
11:45	**Introduction to the Expert Workshop on the "Assessment of options for the design of pending market developments"** Objectives and methodology for the assessment of market design options Luis Olmos, IIT-Comillas Market design options defined so far and assessment criteria considered Pablo Rodilla, IIT-Comillas Brief Discussion All Participants Outline of major issues to be addressed in the working group session on the assessment of market design options Luis Olmos, IIT-Comillas
13:00-13:45	*Lunch*

13:45	**Parallel Working Group discussion of market design options** Parallel Working Groups – each working group shall discuss main pending market developments related to a certain time frame (long, short, or very short term) as far as the supply of main required products (adequacy, clean energy, and flexibility) is concerned All Participants
15:15-15:30	*Coffee break*
15:30	**General Discussion on the choice of most efficient design options for market developments** Conclusions on the selection of most efficient design options by Working Groups Representative of Each Working Group General Discussion on the market developments to implement and their optimal design All Participants Summary, Concluding Remarks Pablo Rodilla, IIT-Comillas
17:15	*End of Stakeholder Consultation & Expert Workshop*

2.4 Introduction to Stakeholder Consultation Event "Challenges for RES-E deployment in the European electricity market"

Agenda point	Conclusions and actions
Welcome from the Project Coordinator Andrei Morch, Sintef	Andrei Morch welcomed all attendees of the Stakeholder Consultation and introduced the Market4RES project. He gave an overview of current developments in Denmark 2014, especially the deployment of wind power and PV installations. He showed the expected Danish need for balancing in 2035, which will be 1 GW. He pointed out the project objectives, the consortium partners and the division into work packages. In addition, Anrei Morch mentioned the main targets for several work packages.
Implementation status and market-focused diagnoses of the EU TM Luis Olmos, IIT-Comillas	Luis Olmos presented the main issues of task 2.2 and the according deliverable D2.2. Therefore, he explained the European Target Model, including the Market Network Codes and the Assessment Framework. In addition, he showed the division into long-, short- and very short-term markets. He pointed out that the TM does not consider the creation of a capacity market or Capacity Remuneration Mechanisms (CRMs). Additionally, it does not consider the creation of clean energy markets for achieving low emissions. Luis Olmos pointed out several requirements for clean energy markets. After long-term markets he focused on short-term ones, like day-ahead and intraday markets. He mentioned several possible adjustments concerning short term markets, like flow-based vs. coordinated NTC, bidding zone configuration, timing of markets, etc. Finally, he showed the basic diagnosis of the very short-term markets. Luis Olmos explained the model for balancing market integration and the requirements to achieve a common balancing market, e.g. procurement of balancing services, access to cross-zonal capacity, imbalance settlement and pricing, etc. At the end of the presentation Luis Olmos summarized the presentation. One of the participants asked what he meant with the interfering of the long-term market on the short-term. Clean generation may not be competitive against conventional one even in the long term, does he believe this? Luis Olmos said, he only stated it as a reminder; that everybody has to be prepared for this.

Agenda point	Conclusions and actions
Outline of the empirical case study analyses emphasising the challenges in the very short-, short- and long-term electricity markets in Europe Aurore Flament, 3E	First, Aurore Flament showed an overview of the presentation including what they were doing in the case study analysis. She explained the methodology, which comprised selection of countries, gathering of historical data and empirical case study and sensitivity analysis of short-term and long-term markets. She explained the considered cases for the short-term, e.g. falling electricity prices/RES-E increase, negative prices, RES-E curtailment, CWE market coupling, price volatility, interconnection capacity and price stability and nuclear shutdown. She showed a multi-country example on negative prices of the 15 June 2013. Afterwards, she explained the considered cases for the long term, e.g. falling futures electricity prices and relationship with the RES-E share, impact of CWE market coupling, impact of interconnection capacity, impact of the announcement of nuclear shutdowns in Belgium and Germany, and the impact on monthly futures prices when generation facilities fail. Finally, Aurore Flament presented her conclusions and some solutions. Her last slide comprised best practices on international market designs, which have been divided into environmental policy, economical efficiency and security of supply. Hans Auer asked if they filtered out the net effect of market coupling in CWE region from the overall changes including merit order effect. She negated the question, the reason was that there were not enough time to make an in depth analysis. Another question was what about DR; it has not been mentioned in the presentation. Aurore Flament said that they were more looking at the supply side not on the demand side.

3 Recommendations

The two events, which are summarised in this report, provided the interaction with the relevant stakeholders who are active in the issues addressed in work package 2, which focuses mainly on opportunities, challenges and risks for RES-E deployment in a fully integrated European electricity market. Electricity markets design is a highly debated topic across different sectors, especially for governments, international institutions and private investors. To this end, there is a strong need to engage with policy makers, regulators and power companies to acquire a broader spectrum:

Expert-Workshop: included a focused interaction with regulators (ACER and national regulators) and policy makers (DG Energy, ENTSO-E) about market failures, distortions, challenges and benefits in the European electricity market with increasing shares of RES-E generation and lack of demand side management implementation.

Consultation Process & Stakeholder-Event: included a consultation of findings of task 2.2 focused on the specific assessment of the regulatory status of the Target Model targeted to all stakeholders involved in the implementation of the Target Model. This consultation process was also included in the Expert-Workshop event in October 2014. The findings of the consultation process were discussed and wrapped-up in the final stakeholder-event in April 2015.

In the following section the major outcomes of the group works of the Expert-Workshop are summarised.

3.1 Major Outcomes from the Group Work at the Expert Workshop

3.1.1 Long-term electricity market

		Justification	Example
Target Model (TM): enough incentives for generation adequacy?	Yes? Why?	Let's talk about System Adequacy (SA); including both Generation Adequacy (GA) and Transmission Adequacy (TA); TM does not address this question; TM assumes that given infrastructure is sufficient; Scope of TM is narrow (existing assets); Overcapacity in some regions (no need to think about additional capacities); No risk (price) signals towards customers	Some European Countries Spain (but profitability problem)
	No? Why not?	It relies on the energy—only market; Priority dispatch of RES-E; Negative prices	Some European countries

		Justification	Example
Capacity Remuneration Mechanisms (CRM)	Types: o Capacity payments o Long-term contracts •for Conv. generation •for RES generation o Decentralized approach o Others	Reluctance in terms of centralised planning approach; Rather decentralised: Balancing responsible party has to take care and the risk (correct price signals); DSM very important (see below); See also Forward-Market discussion	
	CRM implementation details for the different (preferable) types above: • Involved actors/market participants • Who shall do what? • …	No centralised planning in a country of a few national experts only	
Participation of demand response in CRMs reasonable?	Yes? Why? How? Barriers?	Yes, definitely! Long-term contracts could impose it (but market intervention).	
	No? Why not? Barriers?	-	
Regulation/Coordination of national CRMs at …	…regional, national or international level? What are the dependent factors?	At least national	
Can „neighbours" provide long-term security of supply?	Neighbouring generation adequacy? How? Cross-border transmission adequacy? How?	Yes, although it is expected that each country wants to maintain a certain share of self-generation; Cross-Border Transmission Capacity shall be a scarce good	
	Others? How?	-	
Alternative solutions: Forward market	How to design it? Contract for Differences (long-term contracts; financial products)? You can offer what you want!	Generators and Demand to participate!	
Security of Supply	100% security of supply?	Also national issue. Degree of freedom that customers decide security of supply. How to announce this (no mainstream political/policy opinion).	

3.1.2 Day-ahead electricity market

		Justification

		Justification
Price Coupling of Regions (PCR)	Product design of bids flexible enough for market participants to reflect in their bids their real cost and constraint? Yes? Why? No? Why not?	There is a trade-off between the inclusion of constraints of all types (flexibility) and liquidity. A limited set of products should probably be defined in order to achieve a high enough level of flexibility.
How much cross-border transmission capacity should be allocated by PCR?	100% or <100% or 0%? Why? Please explain....	In general, it shall be 0% to foster the forces of the free market.
	Physical rights possible? Yes or No? Why? Please explain... In case yes, do you see any concerns/ implications with the existing policy documents of ACER? In case of no, how can be long-term cross-border supply contracts implemented?	Physical products may result in an exacerbation of the level of market power exercised. Financial products could solve problems in the long term, included the cross-border provision of term.
	What are the implications for cross-border balancing market opening in case of 0-100% transmission capacity allocation by PCR?	Balancing markets could be celebrated after the outcome of the energy market has been computed.
	(When) is flow-based capacity allocation supposed to be ready for implementation? Experience so far in the CWE-region test sites?	Not foreseeable.
Timing of electricity markets	Appropriate sequence of markets (with versus without physical rights)?	Some argue that providing as many markets in as many time frames as possible would allow agents more freely to choose where to trade their energy. Others are worried about liquidity problems in some close to real time markets if markets in all time-frames are open. One option would be to get day-ahead closer to real time. The TSO should provide information on their best forecast of system conditions (RES output, demand).
Integrated European Market (IEM)	Do wholesale market price areas in Europe reflect grid congestion adequate enough (please refer also to the bidding zone review of ACER and ENTSO-E)? If yes, why? If no, why not and how to	There may be some losses of efficiency related to the use of current market price areas, since they are quite big and may not reflect network congestion. However, price areas defined should not be small (nodal or similar), because this would negatively affect the liquidity of the market. The relevant market area may get very much reduced.

		Justification
	modify?	
Demand response	How to integrate demand response?	No answer yet

3.1.3 Very-short term electricity market

		Justification	Example
Continuous short-term market?	Preferable over a series of intra-day markets? If yes, why? If no, why not?	TSO's intraday market and tertiary market can be combined in one single platform. Hydropower as very flexible asset flexible. Why yes: Continuous short term market gives an opportunity to correct their imbalances it can be relevant in some countries. (This is a trade-off) It is preferable option in sense of encouraging the trade. Gate closure 30 minutes. Why not: considering liquidity as an important issue on a market.	Switzerland Spain
Integration of balancing markets until 2020 possible?	Which obstacles exist to achieve this?	Potential conflict of interests, conflict of different products among countries and transmission capacity allocation.	One integrated platform in DE, CH and AT.
	How to settle responsibilities for power imbalances?	Two views: • TSO cannot guarantee the system stability along and prefer to delegate balancing of parts of the system, which might be a suboptimal system solution. • One actor balancing the system may have an advantage.	

		Justification	Example
	Can demand participate? Are currently existing prequalification criteria discriminatory? If yes, why?	Yes, provided that the participants meet the prerequisites: for example activation time and min capacity, allowing aggregation and design of products should be adapted. Not discriminatory	Predictability of the reserves, depending on the type of consumers. Necessary to have mechanisms for resolution of potential conflicts between transmission and distribution.
Integration of balancing markets until 2020 possible?	What about barriers for RES participation? Are currently existing prequalification criteria discriminatory? If yes, why?	• The whole costs for introduction of RES and imbalances are distributed in the system. • "Must run" power plants (Wind and PV); difficult to have customers, increasing demand. • Symmetry of the balancing up- and downward regulation is required: asymmetry should be allowed. • Reliability demands for participation: decreasing with few percent (confidence interval) would increase the availability of bids significantly. • Pricing of imbalance: if the service is not delivered, what price to be used? • Potential possibility for gambling on the balancing market.	Switzerland

		Justification	Example
	How can cross-border balancing markets work and how can „neighbours“ provide real-time operation services? • How to allocate necessary cross-border transmission capacity? • How to handle the different merit-order list and guarantee redundancy in case of cross-border transmission congestion? • Imbalance netting implementation between control zones: voluntary or mandatory?	Understanding that this is related to primary regulation. How to allocate interconnectors' capacity? - Fixed share according to season - Use it or lose it principle (UIOLI) Understanding preparation to possible technical downfalls in the transmission capacity. Having a safety margin is a solution, but how big should it be? Enough but not blocking the transmission. Monitoring and probability-based calculations (historical perspective/temperature and empirical data). Voluntary	