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4th Future Trading Arrangements Forum

04/07/2014

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Agenda

Chair: Mark Copley - *Associate Partner, Electricity Wholesale and EU Co-ordination, Ofgem*

12.00 – 12.45	*Arrival and lunch*
12.45 – 13.00	**1. Welcome and introductions**
13.00 – 13.30	**2. Reintroduction to Future Trading Arrangements** • Bidding Zones Workstream • Longer Term Workstream • Other Workstreams
13.30 – 14:30	**3. Focus on the bidding zones workstream, Ofgem's Bidding Zones Literature Review and discussion on potential impacts**
14.30 – 14.45	*Coffee break*
14.45 – 15.45	**4. Tentative thoughts on bidding zones assessment methodologies** • Market Report • Technical Report • Bidding Zones Review
15.45– 16.00	**5. Concluding remarks and next steps**

1

Welcome and introductions

Aims for today's Forum

- Begin to share knowledge related to bidding zones issues and gather your views on the variety of impacts on the market
- Exploring our tentative thoughts on developing a framework to consider the configuration of bidding zones in GB
- Feeding in your expertise to shape the subsequent development of a bidding zones analytical framework
- Asking for views on the other aspects of the Future Trading Arrangements programme and discussing the priorities for these going forward

2

Reintroduction to Future Trading Arrangements

Future Trading Arrangements

- The FTA programme looks to consider how fit-for-purpose GB trading arrangements are given the wide range of changes currently impacting on the electricity wholesale market.
- Our open letter published in February 2014, outlined our plans for a priority workstream, further exploring the bidding zones issue.
- The FTA Forum previously identified the bidding zones issue as a priority.
- The open letter also outlined three other potential workstreams – to be further discussed...


Update on the Future Trading Arrangements Process

Publication date 19th February 2014

Information type Open letters & correspondence

Policy area(s) Electricity - wholesale markets

Dear Colleagues,

This letter sets out our plans over the next six months for the work on fu
electricity trading arrangements. We plan to hold the next Future Tradi
Arrangements Forum in the summer.

The three other FTA workstreams

- Previously, industry feedback was that resources were stretched and BZC was of the highest importance
- Developments this year include EBSCR Decision, EMR implementation, Supplier of Last Resort proposals and State of the Market assessment
- We intend to come back to the Forum at the end of the year with our proposals on how to take forward the **Managing Intermittency** workstream and the **Wider Balancing/ Reserves** workstream
- Progress has been made on developing our approach on **Longer Term Market Arrangements** workstream…

Longer Term Market Arrangements workstream

Motivation	• Electricity markets are changing rapidly (EMR, EU integration, technology changes etc). • What stresses will the existing market arrangements (MA) face in future and will they remain fit for purpose as we head to 2025 and beyond? • How do we ensure that a consideration of the long-term horizon feeds into our short-medium term policy work to ensure consistency.
Benefits	• Provide direction to our short-medium term policy work in order to for it to be in the long term interest of consumers ('future-proofing'). • Help Ofgem work with policy-makers (Europe, DECC etc) to ensure MAs remain in the interest of current and future GB consumers.
Outputs	• Analysis of future challenges to the MA under different scenarios (2025+) and consider whether MA need to change to remain effective. • Write up this and our previous work • No resulting policy work expected for 2014.

Discussion on LTMA

Which aspects of the current Market Arrangements might have issues in the future?

When will these issues arise?

What future energy developments would cause issues for current MAs? eg storage, increased intermittency, embedded generation

3

Focus on the bidding zones workstream, Ofgem's Bidding Zones Literature Review and discussion on potential impacts

How do we specifically define a bidding zone?

" the largest geographical area within which market participants are able to exchange energy without capacity allocation "

As defined in the Transparency Regulation (543/2013)

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Context for considering bidding zone issues

- CACM is not yet agreed – the negotiations are anticipated to conclude in the Autumn of 2014
- The CACM text on bidding zones is a part that does not yet have broad agreement - in particular the roles of governments and regulators in relation to bidding zone reviews are still being discussed
- It is important that we begin work on CACM implementation now – but nothing is set in stone until it is agreed
- The purpose of this work is only to establish the methodology and an assessment framework for a review which may have to be undertaken at some point
- No steps beyond this until they are necessary – we do not expect to make decisions (one way or the other) for some years, if at all

Objectives of the workstream

1. To produce analytical frameworks in preparation for the expected requirements of the European Network Code on Capacity Allocation and Congestion Management

2. Early, transparent stakeholder engagement to consider the complex issue of bidding zones

3. To provide greater certainty for GB stakeholders in regards to how Ofgem would consider the bidding zones issue

4. To improve Ofgem's ability to influence the ongoing European developments in this area and ensure GB-specific considerations are taken into account

What guidance is in CACM*?

* Still draft text, not yet finalised

"Does the current situation indicate problems that warrant further assessment?" If yes,

"What is the current situation?"

"How do we best solve the problem?"

Market Report

The Market report shall consider the influence of current BZC on **market efficiency**

Technical Report

The technical report on current BZC shall include, at least:

1) a **list of congestions**, including the location and frequency

2) analysis of the expected **evolution or removal of these congestions** due to network investments or significant changes in generation/ consumption patterns

3) Analysis (where appropriate) of the share of **power flows that do not result from the capacity allocation mechanism**

4) details of **congestion incomes and firmness costs**

Bidding Zones Review

Criteria to review the efficiency of alternative BZCs shall at least include:

1. Network security:
(i) the ability of BZCs to ensure operational security and security of supply; (ii) the uncertainty of cross-BZ capacity calculation.

2. Market efficiency:
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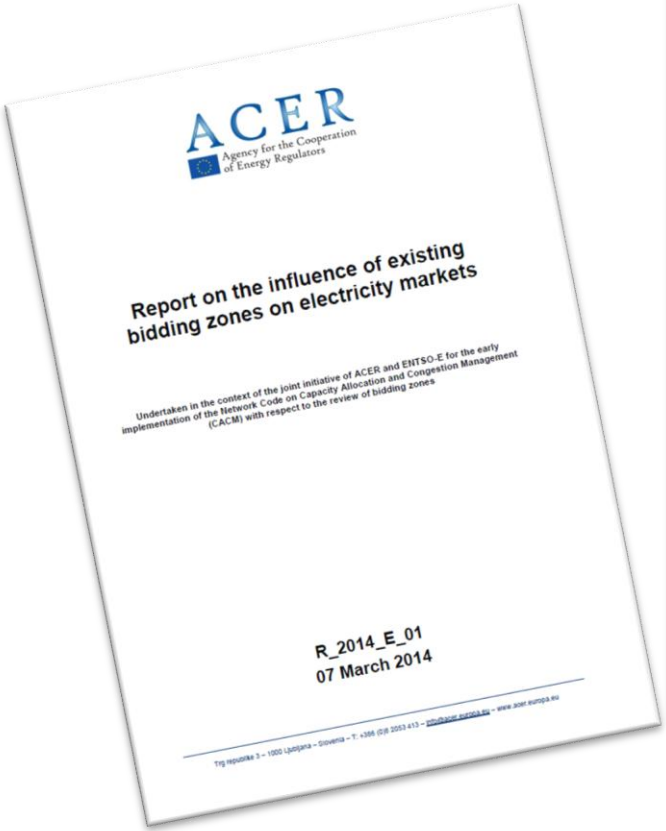
3. Stability of BZs:
(i) the need for stability over time; (ii) consistency with all capacity calculation timeframes; (iii) the need for generation/ load units to belong to only one BZ for each Market Time Unit; (iv) location and frequency of congestion, taking into account future investments.

These provide a 'snapshot' assessment of the current market and technical situation (and form the counterfactual if a Bidding Zones Review is launched)

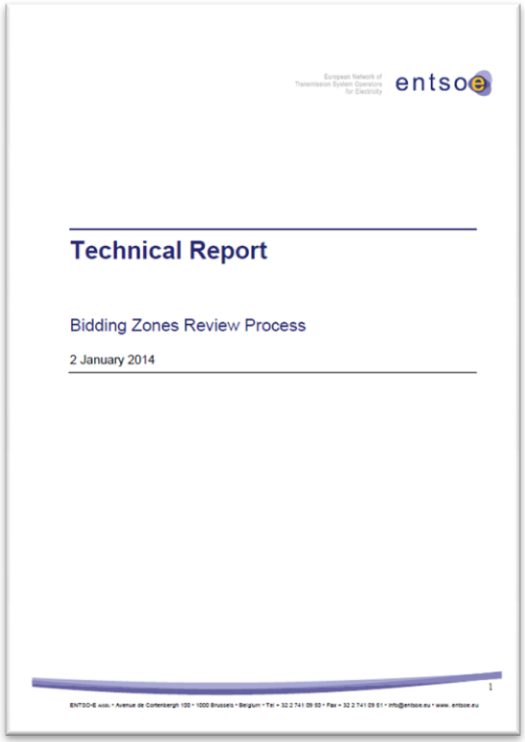
Launch of the Bidding Zones Review is dependent on the findings of Market and Technical Reports

Recent papers

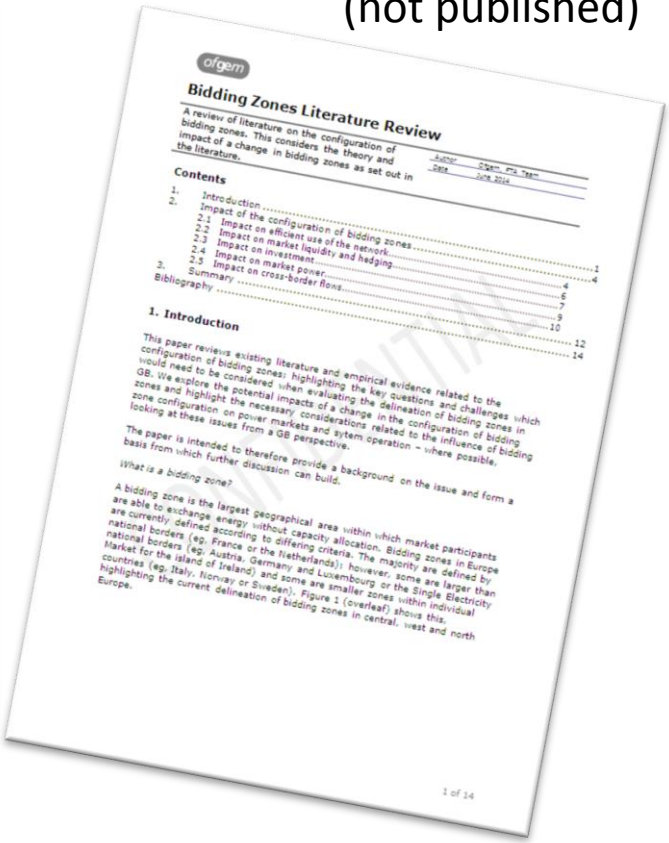
ACER pilot Market Report



ENTSO-E pilot Technical Report



Ofgem literature review (not published)



Ofgem's Literature Review

- Review of a variety of GB and EU focussed literature relating to bidding zones.
- Sought to highlight the interrelated impacts and trade-offs that may be influenced by the configuration of bidding zones.
- Uncover the wide reaching effects that the configuration of bidding zones may have on incentives for the system operator, generators, market access, locational signals, competition levels and market liquidity.
- Distill these into core themes to begin to construct a framework for the assessment methodologies.
- Raise questions to generate debate and understand further the complex issues that need to be considered.

The literature review uncovered **five key areas of impact** that are considered to be central to this debate and form the basis of the assessment framework.

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Literature Review – Impacts of the configuration of bidding zones

1. Liquidity and hedging

- Liquidity is likely to decrease as the number of zones increases.
- The strength of this relationship is questioned in different timeframes.
- Lower liquidity will likely affect hedging.
- There have been some successes though, ie the use of CfDs in the Nordic market.

2. Investment

- Long run signals may affect location decisions for generation and network investment.
- The relative influence of price signals is widely debated, with investment decisions affected by many other factors: network tariffs, subsidies, taxes, factors of production, etc.

3. Efficient use of the network

- Short run signals influence utilisation of existing network capacity, with implications for system operation and the efficiency of the system.
- Generation dispatch decisions are influenced by the configuration of bidding zones, which in turn have implications for the volume and cost of re-dispatch actions taken by the SO.
- The subsequent effect on market efficiency depends on the efficiency of re-dispatch actions.

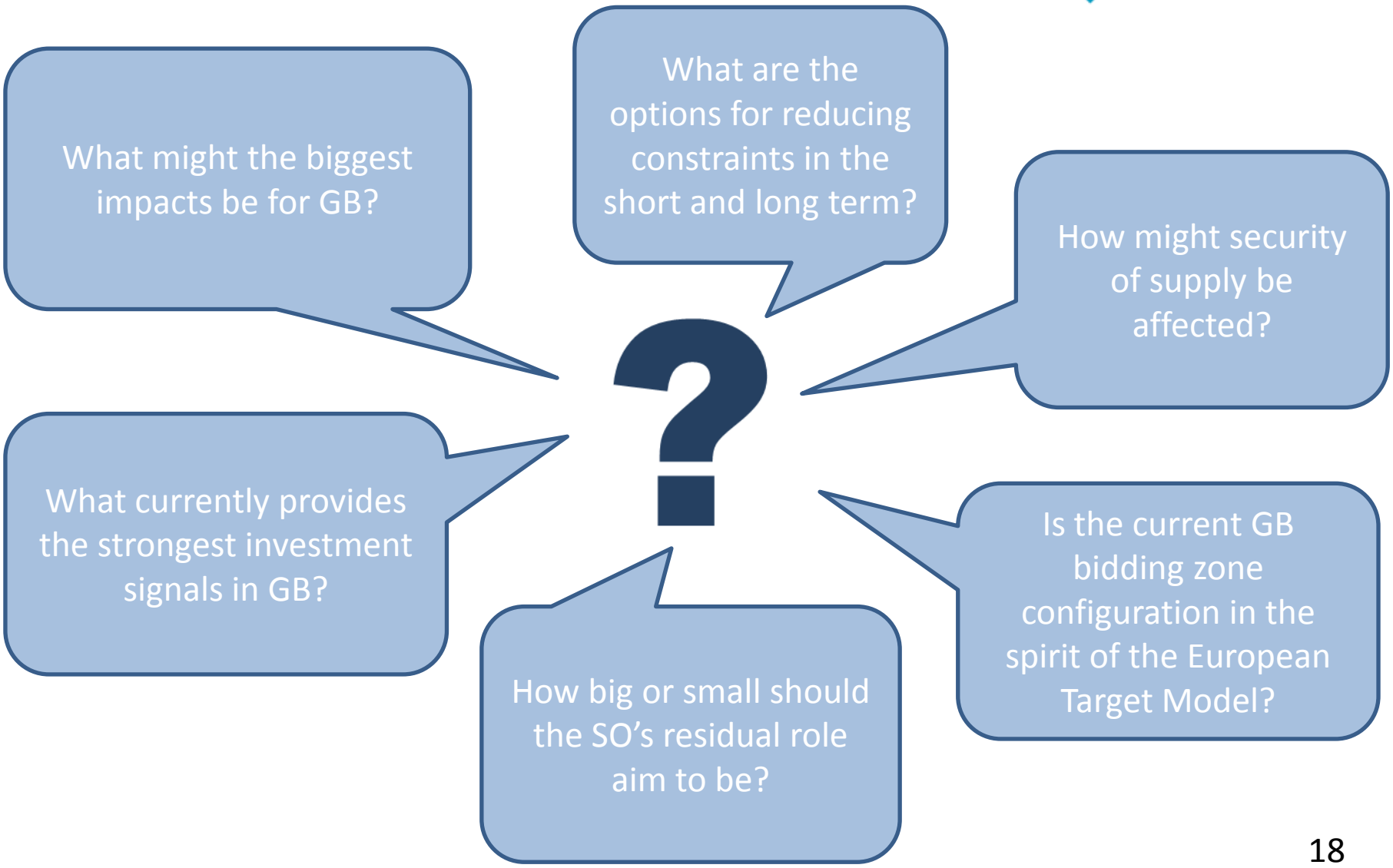
4. Market power

- Potential consequences for market power, related to changes in market size and the number of market players.
- These changes affect liquidity, which may provide scope for market players to exert market power in wholesale markets.
- These effects may be different (conflicting) for energy dispatch and re-dispatch markets, implying a trade-off.

5. Cross-zonal flows

- Price signals for interconnector flows are influenced by prices within bidding zones.
- The efficient use of interconnection capacity therefore depends on the local accuracy of these price signals.

Discussion on impacts



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Tentative thoughts on bidding zones assessment methodologies

The Market Report

"Does the current situation indicate problems that warrant further assessment?" If yes,

"What is the current situation?"

"How do we best solve the problem?"

Market Report

The Market report shall consider the influence of current BZC on **market efficiency**

Although not explicitly included in CACM, the ACER pilot report assessment criteria included:

- *Efficient use of infrastructure (preventive and curative congestion management)*
- *Liquidity and hedging*
- *Market power*
- *Investment incentives*

Technical Report

The technical report on current BZC shall include, at least:

1) a **list of congestions**, including the location and frequency

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4) details of c**ongestion incomes and firmness costs**

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These provide a 'snapshot' assessment of the current market and technical situation, and form the counterfactual if a Bidding Zones Review is launched

Launch of Bidding Zones Review dependent on outcome of Market and Technical Reports

Market Report: overview

Identified **4 key themes** from our own analysis that we consider to indicate the impact that the configuration of bidding zones has on market efficiency.

Broadly similar to those outlined in the ACER Market Report, with some differences in order to address GB-specific issues.

- **Theme 1: Investment**
- **Theme 2: Liquidity and hedging**
- **Theme 3: Efficient system operation**
- **Theme 4: Market power**

- Indicators to be measured over at a minimum of the previous a 3-5 years; potentially further where possible
- Where possible, indicators to be compared against benchmarks (eg. other countries)

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Market Report: Themes

- Theme 1: Investment

Indicator 1a) The state of the market for investment (within zones and between zones)
Indicator 1b) The geographical distribution of investment relative to demand
Indicator 1c) The relative influence of price signals compared with other factors

How could this be measured?

- Geographical location of new investment in generation and interconnection
- Quantity (MW and £) of generation and interconnection investment

- Theme 2: Liquidity and Hedging

Indicator 2a) The levels of liquidity in markets of all timeframes
Indicator 2b) The ability of market players to hedge against uncertainty

How could this be measured?

- Churn (the number of times electricity which is generated is subsequently traded)
- Bid-offer spreads (the difference between the prices quoted to buy and sell on wholesale markets)
- Number of active power exchange members
- Volume of trade in markets of different timeframes

Market Report: Themes

Theme 3: Efficient system operation

Indicator 3a) The costs of SO redispatch actions
Indicator 3b) The total costs of system-wide dispatch
Indicator 3C) The size of the SO's residual role

How could this be measured?

- Redispatch volumes and costs (if not included in the Technical Report)
- Volumes of reserves procured in advance
- System-wide total dispatch costs
- Volume of SO system and energy actions (and relative to total GB market actions)

Theme 4: Market Power

Indicator 4a) The number of market players and degree of market power in electricity markets
Indicator 4b) Market power in redispatch market

How could this be measured?

- Concentration ratio (measure of market share)
- HHI Index (measure of competition)
- Pivotality (if any given generator is needed to meet demand at any time)
- Residual Supplier Index (the degree to which a generator is needed to meet demand at any time)
- Analysis of bidding behaviour

The Technical Report

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nationalgrid

FTA Forum - Technical Report

Ian Moss

nationalgrid

Technical Report - Process

Who?

- Prepared by ENTSO-E
- Each TSO to provide data and analysis to allow the preparation of the report in a timely manner

When?

- To be delivered to the Agency nine months after initiation of the process

What?

- To include, at least:
  - Major congestions;
  - Expected evolution of congestion;
  - Power flows not resulting from capacity allocation; and
  - Congestion income and firmness costs.
- Backward and forward looking elements

Technical Report – CACM Requirements (1)

Backward looking – 3 years

1. **(Location and frequency of) structural congestions and other major physical congestions**
   - SO constraint costs to be presented for each major system boundary
   - Data required for **previous three calendar years**

➔ Constraint costs already published each month for Scotland, Cheviot and England & Wales

2. **An analysis of the expected removal of congestions due to network investment / changes in generation or demand patterns**
   - Information from NGET's Electricity Ten Year Statement to be employed
   - Network Development policy uses a 'least regret' approach to investment planning

➔ Established mechanism to show evolution of constraint costs

Forward looking – 10 years

Technical Report – CACM Requirements (2)

3. Power flows not resulting from capacity allocation

- Difference between an 'allocated flow' and a 'physical flow' on the interconnectors

⇨ Information is extractable from NGET databases

4. Congestion income and firmness (physical and financial) costs

- Interconnector revenue and compensation costs

⇨ Information to be provided by the interconnector owners

Interconnector-related information

The Bidding Zones Review

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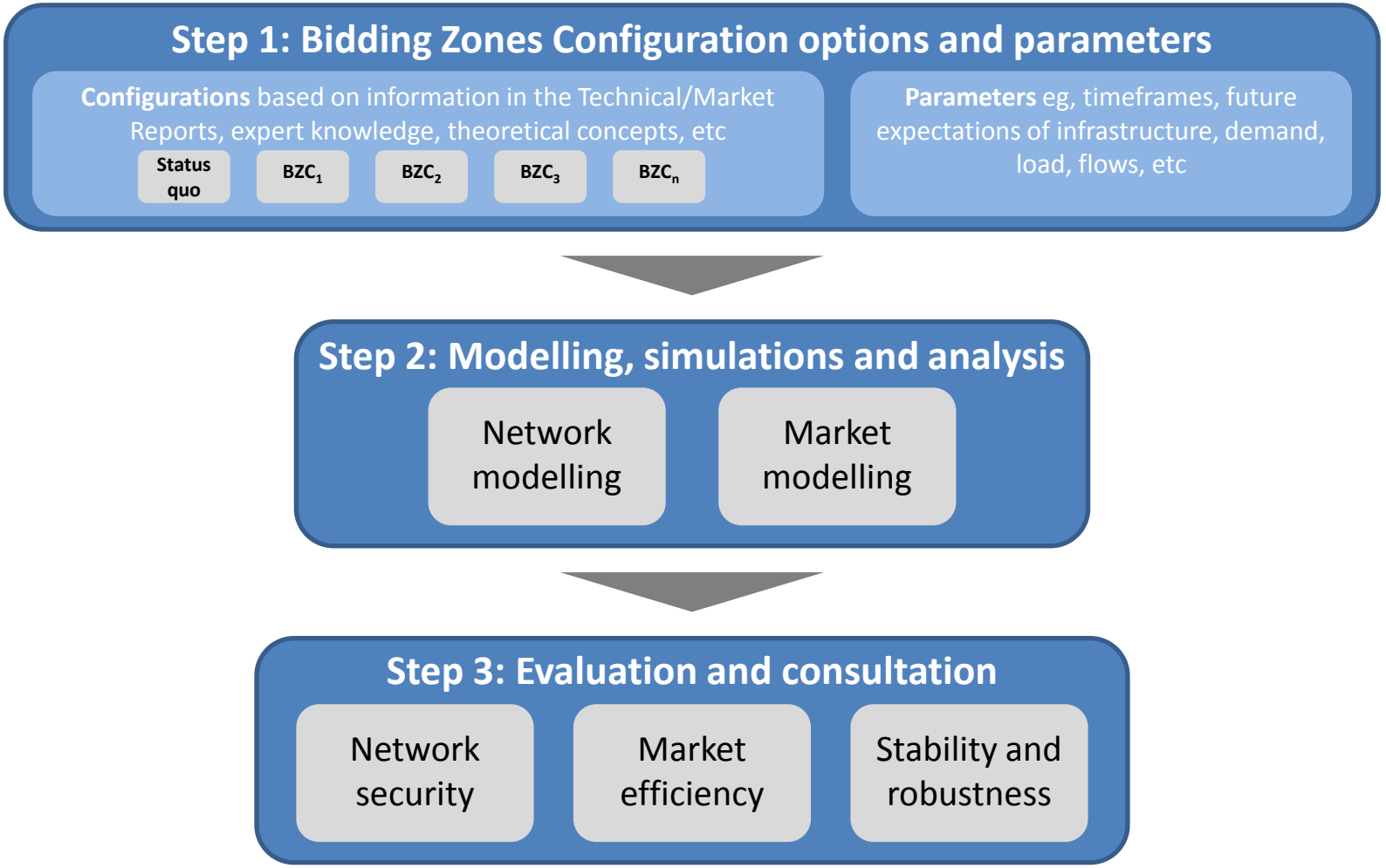
BZR: Potential approach



[Very similar to the approach recently outlined by ENTSO-E]

BZR: Questions for the evaluation

For each BZC...

Network security

System operation and security of supply

- What is the impact in terms of operational security/ security of supply?
- How does the configuration impact on the overall costs to the SO in managing the system (inc. costs congestion management costs)

Market efficiency

Price signals

- What is the impact on short term signals for efficient use of network capacity?
- What is the impact on the location and volume of investments?
- What is the impact on the efficiency of interconnector flows?
- What is the impact on prices?

Liquidity and hedging

- What is the impact on liquidity?
- What is the impact on the ability of market players to hedge against uncertainty?

Market power and competition

- Is there sufficient competition in each zone?
- What are the levels of competition for providing redispatch services (if required)?

Complexity/costs of implementation

- How much would the change in configuration cost to implement and who would bear the cost of these changes?
- How complex would the implementation/ required changes be?
- Is the new configuration more cost effective than investment in transmission infrastructure?

Stability and robustness

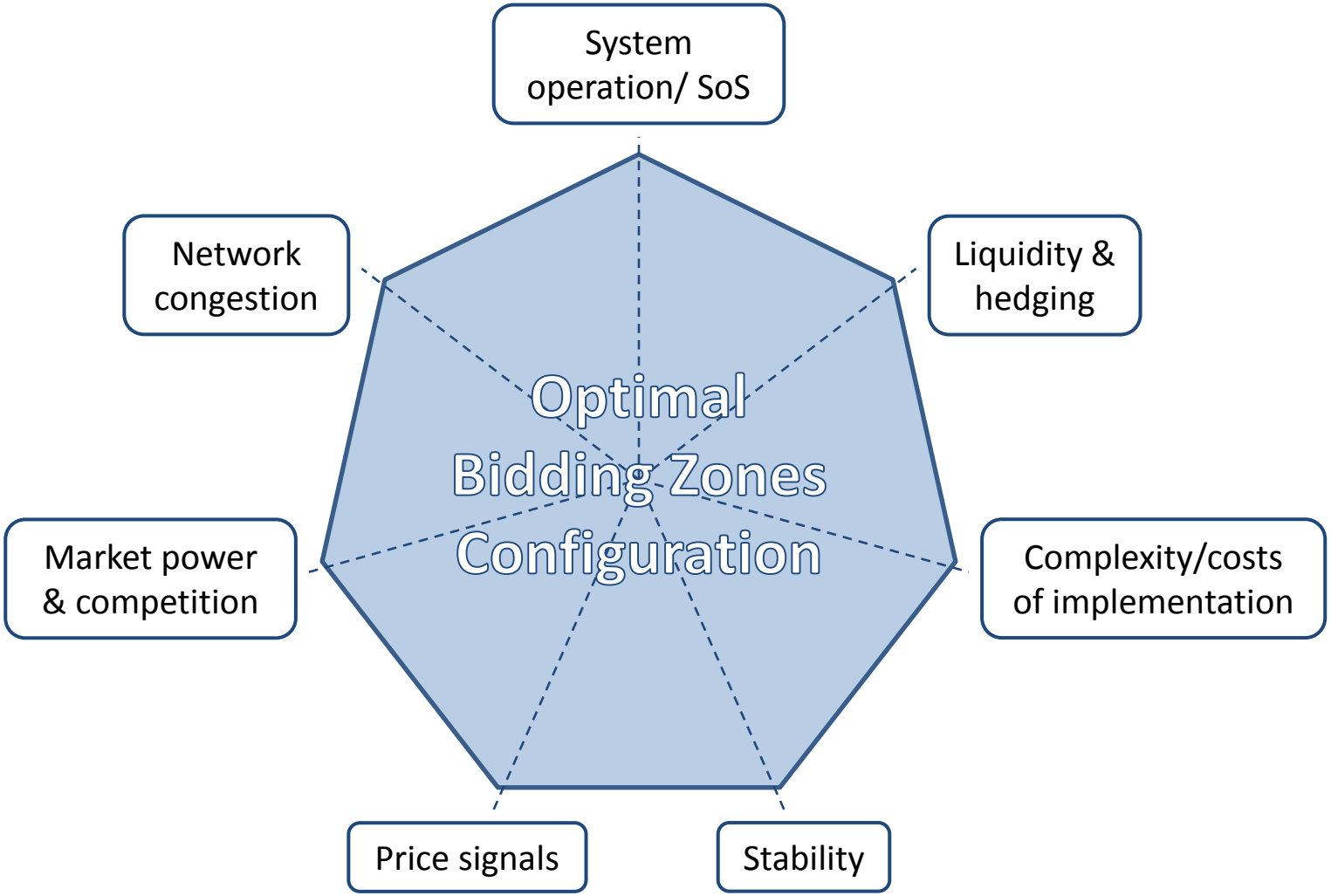
Network congestion

- How would the location and frequency of network congestions evolve over time?
- What network investment would still be needed to alleviate congestion?

Stability

- Is the configuration likely to be robust/ stable given the expected evolution of infrastructure, generation and load?
- How frequently would the configuration require a review?

BZR: Potential evaluation framework



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Concluding remarks and next steps

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Next steps

- Continue to build the methodology framework for the three reports on bidding zones, using the input from Forum members today.
- Progress the Long Term Market Arrangements workstream and monitor the case for progressing other workstreams.
- Report back to the FTA Forum with an update on the development of these two workstreams.

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Ofgem is the Office of Gas and Electricity Markets.

Our priority is to protect and to make a positive difference for all energy consumers. We work to promote value for money, security of supply and sustainability for present and future generations. We do this through the supervision and development of markets, regulation and the delivery of government schemes.

We work effectively with, but independently of, government, the energy industry and other stakeholders. We do so within a legal framework determined by the UK government and the European Union.

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