Ancillary Services and Balancing in the Wholesale Market of Bosnia-Herzegovina

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Role of Ancillary Services

- Wholesale electricity market focuses on delivery of electric power and energy to consumers
- But consumers also require safe and reliable power supply within predefined standards (security, quality)
- This requires the provision of so-called system and ANCILLARY SERVICES by respectively to the system operator

*System Control*  
*Frequency Control & Energy Balancing*  
*Network Control*  
*Emergency & Restoration Services*

*Reserves & Balancing Services*  
*Energy System*  
*Frequency Control*  
*Voltage / Reactive Power Control*  
*Black Start Island / House load Operation*
European Developments

• Increasingly, European countries rely on market-based methods for the procurement and use of ancillary services
• Traditionally, the arrangements for the procurement of ancillary services used to be limited to the local market
• But the new EU Framework Guidelines and Network Code on Electricity Balancing require an increasing level of regional integration and cross-border exchange of balancing services
Status Quo - Observations and Issues (1)

• Technically, BiH has sufficient resources for balancing
• However, present arrangements have led to an artificial shortage of ancillary services:
  – EPs typically provide significantly less (secondary) reserves to ISO than required under their obligations as set by SERC
  – As a result, ISO is often unable to operate the BiH power system within internationally agreed standards
  – Resulting deviations are currently compensated by other European TSOs, but there is increasing pressure on BiH to resolve this issue
• Tariff consumers have to pay for the full cost of ancillary services even if these are not provided by the EPs
• All three EPs complain about:
  – Lack of transparency and ‘fairness’ in settlement of their deviations
  – Insufficient remuneration of ancillary services
Status Quo - Observations and Issues (2)

• **Problems are mainly related to the following key issues:**
  – Current arrangements do not fairly remunerate service providers for the (opportunity) costs of ancillary services
  – Ineffective penalties in case service providers fail to comply with their obligations
    => Insufficient incentives on EPs to provide ancillary services
  – ISO has no means of downward regulation beyond secondary control
  – Lack of effective incentives on EPs to avoid and/or minimize their deviations
  – Provision of incomplete / inconsistent metering data by TransCo

• **In addition, effectiveness and efficiency are further impaired by:**
  – Sub-optimal allocation of ancillary services obligations to individual EPs
  – Inconsistency between regulatory framework at state and entity level
Proposal for future framework

- In order to resolve the issues previously identified, we suggest changes in four different areas:

  - Secondary control reserves
  - Tertiary control reserves
  - Metering & imbalance settlement

Financial Settlement
Secondary reserves - Reserve capacity

- **Overall concept built on 3 modules, in order to ensure availability of sufficient reserves:**
  - Initial reserve obligations serve to provide for fair distribution of overall reserve requirements to EPs
  - Secondary market provides for additional flexibility and efficiency by allowing EPs to 'trade' their obligations between each other
  - As a back-up solution, the ISO procures outstanding volumes from other EPs (at a higher price)

- **Additional steps to improve pricing and allocation of secondary reserves:**
  - Procurement on a monthly basis
  - Separately for different time periods (e.g. weekday peak / off-peak, weekends)
Secondary reserves – Pricing

• **Mix of regulated prices and penalties aims at:**
  – Ensuring a fair remuneration (i.e. reflect the market value of reserves)
  – Providing strong incentives for complying with reserve obligations
  – Facilitating the ‘trade’ of secondary control reserves among the EPs

• **Additional measures related to activation of balancing energy**
  – Financial settlement of balancing energy, i.e. EPs will earn ‘real money’
  – Proposed pricing rules aim at ‘mimicking‘ competition in a functioning market
Tertiary reserves

• In line with common European practice, we recommend introducing a market-based solution:
  – Procurement of reserve capacities by monthly tenders
  – Introduction of daily balancing mechanism with free energy offers
  – Activation of balancing energy by merit order
  – Financial settlement of balancing energy

• Flexibility further improved by voluntary offers and introduction of new product
Metering

- Availability of sufficient metering data is absolutely essential for settlement of balancing energy and imbalances
- All necessary metering infrastructure is in place
- But TransCo must provide all necessary metering data to ISO (in line with provisions of Market Rules)

<table>
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<th>When is the data provided?</th>
<th>Type of data</th>
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<th>Distribution</th>
<th>Cross border lines</th>
<th>Eligible customers</th>
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<td>Preliminary metering data</td>
<td>Hourly</td>
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<tr>
<td>Month after (M+1)</td>
<td>Final metering data</td>
<td>Hourly</td>
<td>Hourly</td>
<td>Hourly</td>
<td>Hourly</td>
</tr>
</tbody>
</table>
Imbalance settlement

- In line with international practice, we recommend transition to financial settlement of imbalances
- Proposed pricing rules focus on ensuring strong incentives on EPs to avoid and/or correct their own imbalances
- Imbalance price to be based on price of balancing energy, as a means to promote the efficiency of the balancing process
- Suggest use of additional incentive component to be paid by EPs in situations where insufficient reserves are available
  - Additional element to promote availability of reserves
  - Additional safeguard to limit system deviations in corresponding situations
Financial settlement

- Settlement should be financially only
- Introduction of market-based elements requires (gradual) transition to centralized settlement by ISO
- ISO to establish separate accounts for financial settlement of each service
- Propose monthly neutralization of all deviations between total costs and revenues
Benefits for market participants

• The ISO will:
  – Get access to sufficient ancillary services
  – Be enabled to operate the BiH power system in a safe, reliable and efficient manner.

• The EPs will:
  – Benefit from fair and transparent processes
  – Be fairly remunerated for the services they provide to the system
  – Be protected against abuse of market power by their competitors

• Consumers will:
  – Only pay for the services that are actually provided
  – Be protected against abuse of market power

• In addition, the BiH power sector will benefit from
  – More economic use of ancillary services
  – Improving regulation quality
  – Improve credibility as a result of fair and transparent processes
Evolution towards a regional solution

- Proposed concept principally focuses on the local market
- However, it also aims at resolving the problems within the joint control block that are currently caused by BiH
- The concept is principally open for the cross-border exchange of operating reserves and balancing energy at a later stage
- Moreover, it introduces key features of the EU Framework Guidelines on Electricity Balancing

- Overall, the proposal serves to improve the present situation in the region but also paves the way for increasing cooperation in the future
Next steps and required changes

• **As far as possible, the proposed solutions build upon current practices and existing systems**
• **All necessary systems and facilities for control, communication and metering are already in place and do not need to be changed**
• **Consequently, the necessary changes are limited to:**
  – Development / Revision of necessary rules and methodologies by SERC
  – Revision of Market Rules and Grid Code (preferably)
• **In addition, the ISO will need to implement new and/or update existing internal processes for:**
  – Monthly tendering of tertiary control
  – Daily balancing mechanism,
  – Performance monitoring of ancillary services
  – Financial settlement
• **We believe that all changes can be implemented within several months and at limited costs**
Key features of the proposed concept

- Fair and transparent allocation of reserve obligations to EPs
- Use and/or 'mimicking' of market-based elements where possible
- Strong incentives to provide contracted reserves (EPs are obliged to either provide or pay for ancillary services)
- Clear incentives to minimize deviations
- Fair to those who provide ancillary services and who cause imbalances
- Gradual implementation (starting from status quo)
- Pragmatic solution that is based on international practice but tailored to local situation
- Facilitation of future transition to regional / European solution
Thank you for your attention!

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