Forum ElCom 2014
“Le marché de gros de l’électricité en mouvement”

ITALIAN EXPERIENCE WITH CAPACITY SUPPORT MECHANISMS

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Palais des Congres Biel/Bienne, November 14th 2014
SUMMARY

• Why is generation capacity an issue?
• Italian CRM model: aims and tools
• Italian CRM model: expected benefits
• Milestones
• Structure of contracts
• Yearly auctions
• Contract parameters
• Adequacy target
WHY IS GENERATION ADEQUACY AN ISSUE?

Theory says
- Potential missing money problem
- Low price elasticity of demand
- Lack of storage
- Transmission + Generation investments coordination failure

RES generation may
- Change price profiles
- Reduce price levels
- Increase price volatility
- Worsen the use and profitability of conventional generation
WHY IS GENERATION ADEQUACY AN ISSUE?/2

Boom and bust cycles of investments

• Due to: generation mix, incumbent changes in pricing strategy, RES growth, lack of grid development, bad functioning of permitting procedures and RES support systems, Italy experienced a boom in generation capacity which is now over and is followed by a bust period under course. In the long term, the generation overcapacity will likely be absorbed.
WHY IS GENERATION ADEQUACY AN ISSUE?

Maturity of energy storage technologies
(Source: “Technology Roadmap - Energy storage” IEA 2014)
Investments coordination failure

• Investment in generation (and transmission) capacity are not coordinated by a central entity anymore.

• In a pure energy-only market design, decisions on new capacity are made independently and with information asymmetry (strategic uncertainty).

• Bad functioning of permitting procedures

• Network and generation development do not run on parallel tracks
ITALIAN CRM MODEL: AIMS AND TOOLS

Aims

• To ensure system adequacy at the minimum cost for the system as a whole (medium and long term) by:
• Fostering the coordinated development of generation and transmission network → risk hedging for private investors
• Promoting competition on a long term perspective → efficient long term price signals

Tools

• The auctioned product is a “reliability option contract”
ITALIAN CRM MODEL: EXPECTED BENEFITS

Expected Benefits

• Italian CRM model combines security requirements with market objectives
• The model was designed to favour:
  • Consumers, protected by a form of insurance that promotes stability and predictability of prices
  • Renewable sources, giving them, apart from incentives, a market remuneration for fixed costs, facilitating their integration into market mechanism in order to achieve safety and cost-effectiveness of the system
  • Thermoelectric operators, giving them a supplemental segment of market to compete in
MAILSTONES TOWARDS THE IT CRM

- Definition of principles by the law: competition, transparency, no discrimination, no market distortions 2003
- Criteria proposed by AEEGSI: publicly consulted through five consecutive consultation documents, including a close examination of international experiences (New England, PJM and Spain) 2005 to 2010
- AEEGSI defines criteria to be followed by the TSO in developing detailed proposal 2011
- Detailed proposal by the TSO for public consultation 2012/13
- AEEGSI positive of its compliance to the criteria 2014 1st semester
- Ministry of Economic Development final approval 2015
- Auctions 2018 - 2019
- Delivery period
STRUCTURE OF CONTRACTS

- Contract structure: reliability call option (1-way CfD)
- Real option - Sellers are obliged to submit offers in Day Ahead, Ancillary Services and Balancing Markets

Premium payment
Payment of the difference between Spot (S) and strike prices (K) (if > 0)

Buyers (TSO)
Sellers (awarded producers)
YEARYL AUCTIONS

- Organized by Terna (TSO)
- Participation is voluntary
- Sellers submit their portfolio offers during a descending clock auction
- Both new (planned or under construction) and existing resources (generators and loads) are admitted to the CRM as long as these are:
  - programmable [for instance: thermal (fossil, biomass, solar), pumping storage, conventional hydro etc.]
  - not subject to any type of investment incentive scheme
  - not subject to any dismantling measures approved by competent authorities
## CONTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td>Planning period</td>
<td>4 years</td>
<td>To promote competition between existing and new capacity</td>
</tr>
<tr>
<td>Delivery period</td>
<td>3 years + floor to stabilize 3 years revenue</td>
<td>To mitigate sellers investment risks</td>
</tr>
<tr>
<td>Location</td>
<td>Grid area where the resource is located</td>
<td>To give proper locational signals</td>
</tr>
<tr>
<td>Strike price</td>
<td>Standard variable cost of an efficient peak plant</td>
<td>To be efficient and non distortive with respect to the generation mix</td>
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</tbody>
</table>
Terna (TSO) defines, on annual basis, the adequacy target as a function of VOLL, LOLP, Variable Cost marginal technologies. An elastic yearly demand curve is defined for any relevant area (areas to be identified according to transmission limits).
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Italian experience with capacity support mechanisms

THANK YOU!

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