Electricity SoS

- Electricity security of supply has implications along the whole chain:

  - Generation
  - Transmission
  - Distribution
  - Demand
Generation adequacy

- Necessity to ensure adequacy of the generation system, i.e. its capability to keep the supply/demand balance (taking into account network constraints)

- Need for a sufficient reserve margin and for a generation set well adapted to the load and to intermittent sources

- Electricity market price signals are not sufficient to ensure adequacy, neither in time nor in space

- Risk of boom-and-bust cycles, with security of supply at risk during capacity bust periods

Generation – policy recommendations

- Implement regulatory instruments (tendering procedures, capacity payments, capacity markets/obligations, call options, etc.) to push investors to pursue the “optimal” development of the generation set

- Rely only on “market based” mechanisms able to get the most efficient solution through competitive procedures

- TSOs should support the implementation of the adequacy instruments providing a technical evaluation of how much new generation capacity of the different types is needed, when and where (the location in the network is very important)

- It is desirable that this process be coordinated and harmonized at the EU level to increase its effectiveness and to avoid market distortions
Primary sources security of supply

- An *adequate* generation set is not secure if primary sources supply is not secure
- Therefore a sufficient *diversification of primary sources* in the generation set must be pursued, according to targets set by the political levels responsible for energy planning
- Apart from RES, supported by specific incentive schemes, this objective can be reached using the same above mentioned regulatory instruments concerning capacity adequacy
- In this case TSOs can only play the role of consultants for technical aspects concerning the implementation of the objective and its impact on system adequacy

Transmission – policy recommendations

- Necessary to *reduce uncertainties for investors* (TSOs / merchant) due to:
  - complex and long permitting procedures involving different authorities, with different administrative levels (European, national, local) that may differ from one country to another
  - lack of social acceptance
  - difficulties in predicting the long-term location, amount and type of generation and load
Transmission – permitting procedures

- **Rationalize** the procedures
  - **reduce** the number of entities involved, the number of phases, ...
  - **centralize** at one (national) level the procedures for strategic infrastructure projects (e.g. cross-border lines)
  - **use** simplified and **shorter** procedures for upgrading of existing transmission lines
  - **set** reasonable **maximum time limits** for the completion

- **Harmonize** the procedures and criteria for authorization at the EU level, through **binding guidelines**

- **Designate an “arbiter” / “facilitator”** promoting compromises, dealing with controversies and speeding up the realization of strategic projects in trans-national cases

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Transmission – social acceptance

- **Provide a clear and objective vision of benefits and costs**, as well as of the **costs for the society** deriving from **inaction**

- **Clarify the relationship between RES integration, security of supply and grid development**

- **Clarify the costs of different technical solutions** (e.g. overhead lines vs. underground cables)

- **Open a discussion on a clear and sound scientific basis with the help of independent and competent bodies, in order to allow for an informed comparison between the (perceived) “cons” and the “pros” of the projects**

- **Promote a thorough evaluation of property value**, so as to bring about a **fair compensation** (including “immaterial” aspects) that can be agreed by all the parties
Transmission – social acceptance

- Combat the nimby effect by letting people know that the realization of network projects will reduce their electricity bills (by imports of cheaper energy, direct compensations, congestion reduction …)

- Provide “locational signals”, i.e. the spatial (zonal/nodal) differentiation of electricity prices and of transmission charges, to optimize short-term operation and long-term siting, thus harmonizing generation and transmission development.

Transmission – long term scenarios

- Difficulties in predicting the long-term location, amount and type of generation and load can be effectively tackled by carrying out adequate scenario analyses (as called for by ENTSO-E).

- Generation companies should be discouraged (with economic penalties) from initiating permitting procedures if they are not strongly committed to realize the investments.

- Scenario analyses should also be the basis upon which to define the optimal set of network developments at the EU level, and no longer only at the national level (as called for by ENTSO-E).
Distribution – towards active and smarter networks

- Encourage cooperation among standardization bodies, regulatory authorities, grid operators and manufacturers to set open standards to ensure interoperability of smart grid devices and systems so as to avoid any technical barrier to their deployment.

- Support DSOs’ investments in “smartness” through incentive / minimum requirements regulation based on the quantification of their effects and benefits, through appropriate indicators.

Demand – policy recommendations

- Encourage demand response
  - support rapid and extensive deployment of enabling technologies, such as smart metering, following best practices (e.g. Italy).
  - design Demand Response programs so as to provide strong (i.e. able to ensure a substantial economic convenience in case of response) signals, as well as simple and easily understandable by consumers.

- Promote higher end-use energy efficiency, with fiscal incentives together with obligation schemes, such as White Certificates, and minimum standard requirements, in order to overcome possible financial and cultural barriers.
Thank you for your attention