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**Hydropower Investment
Promotion Project (HIPP)**

GEMM 2015

Supply and Demand Planning

July 2013



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Key Issues

- Electricity supply and demand in GEMM 2015
- Lessons learned in competitive markets
- Planning time scale
- EU Requirements
- Modes of Adding Capacity
- Suggestions for Georgia



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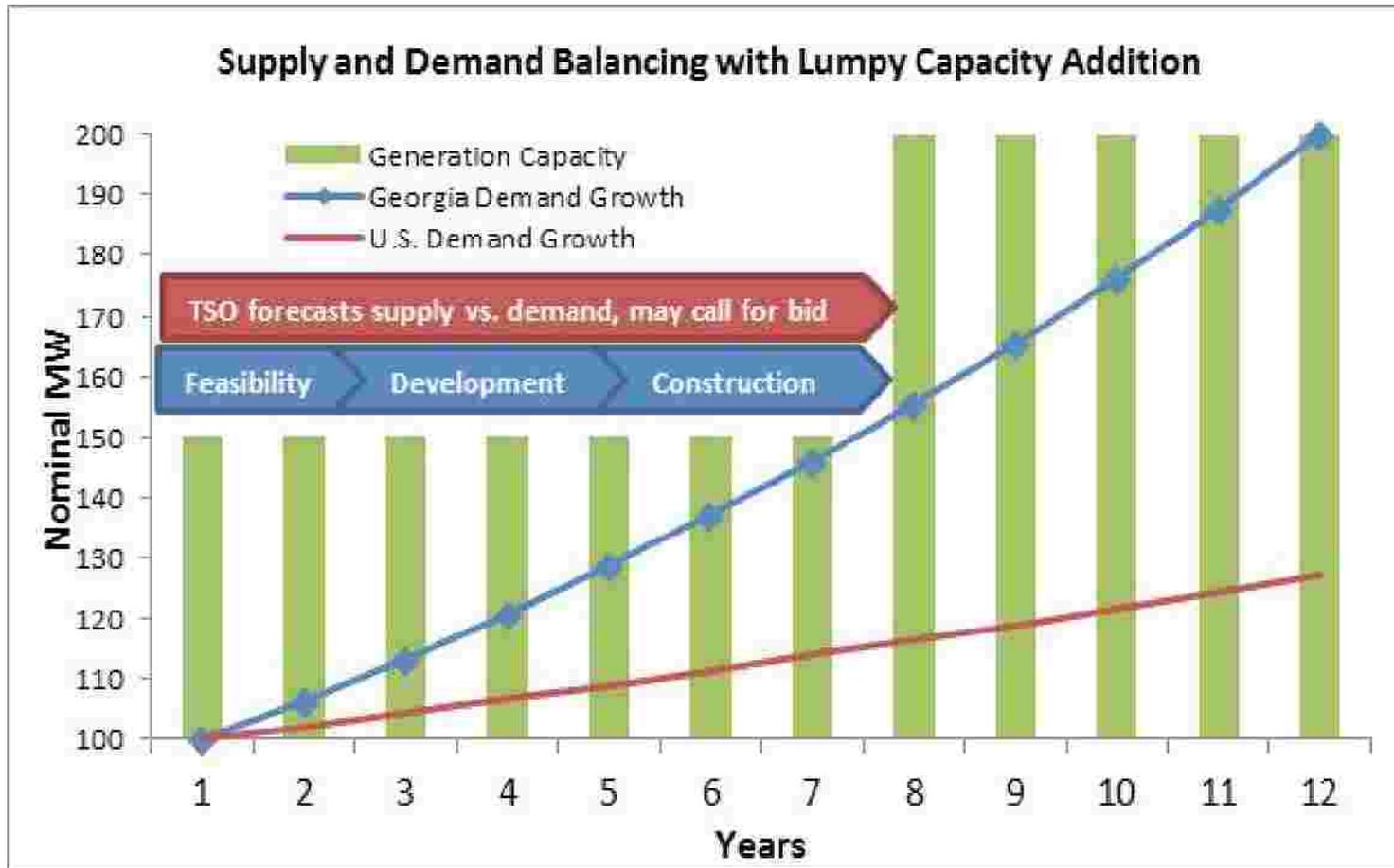
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Electricity Supply and Demand in GEMM 2015

- Purpose of GEMM 2015
 - To secure domestic power supply for Georgia's population and industry
 - To avail significant private investment for export-oriented hydropower plants located in Georgia
 - To engage in beneficial electricity trade with Georgia's immediate neighbors: Turkey, Azerbaijan, and Armenia
 - To harmonize and connect with the European Union for mutually beneficial electricity trade
- Supply and demand balanced by the market, domestically and vis-à-vis the EU

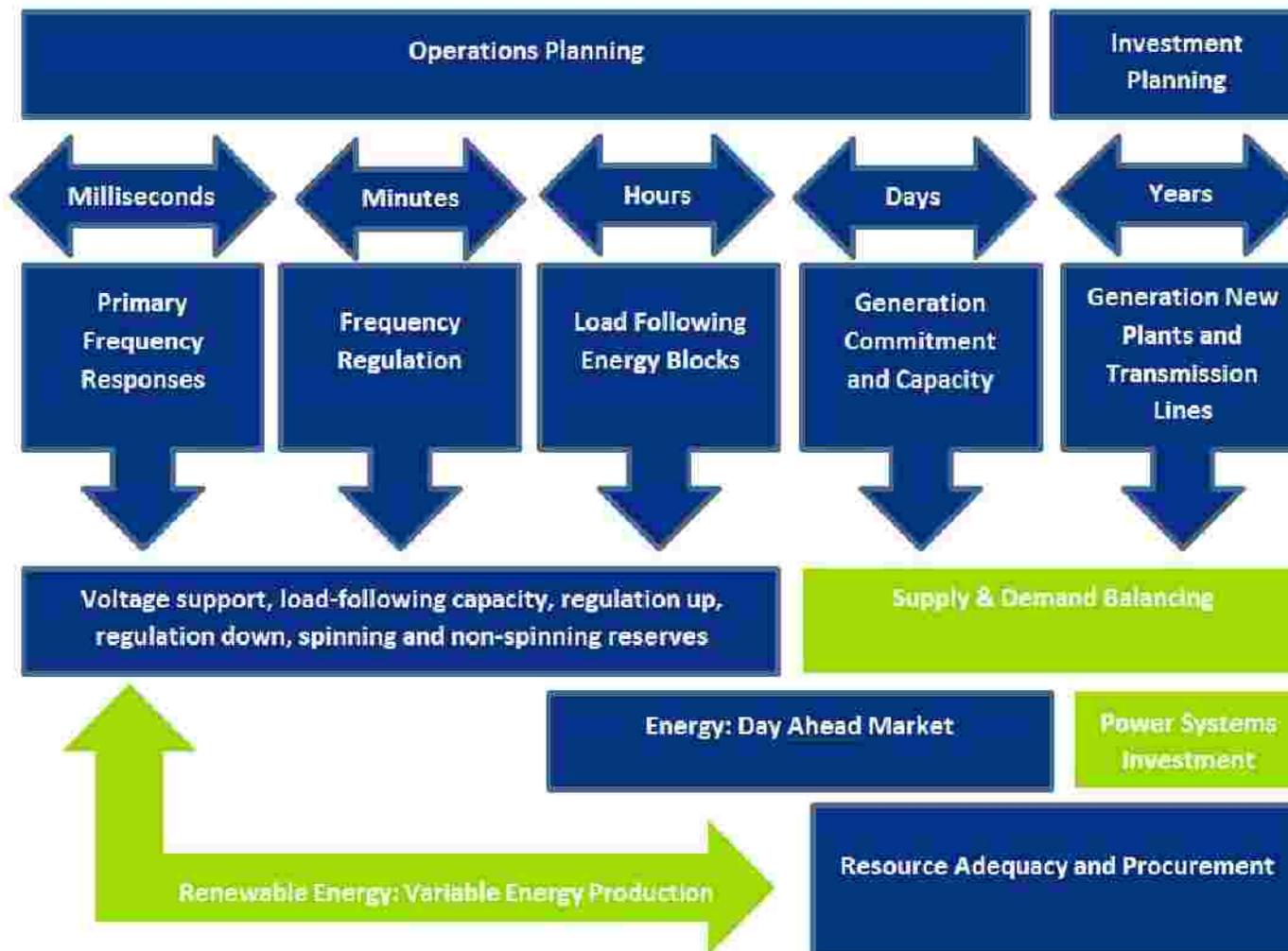


Lessons learned in competitive markets: Slow growth markets allow more time to react





Planning time scale





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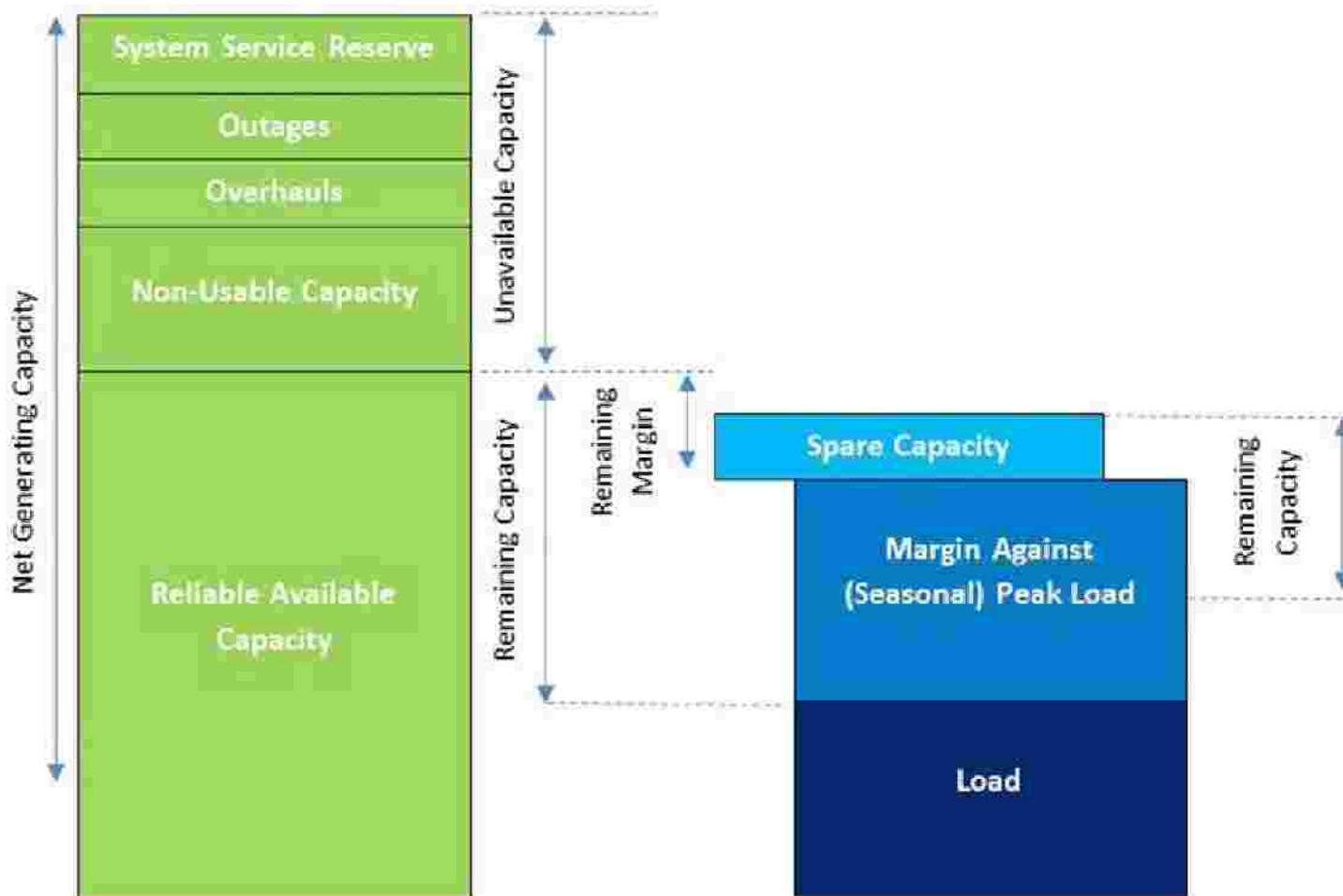
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Issues in Supply and Demand Balancing

- TSO usually responsible for long-term balancing supply and demand, with responsibilities for:
 - Demand forecasting = f (economics)
 - Supply forecasting
 - Country / immediate cross-border/ regional / larger area
 - Load flow analysis
- Issues for the TSO and the TO:
 - Adequacy of generation capacity
 - Capability and reliability of transmission network to link generation capacity with demand
 - The process for causing more generation to be built
 - The process for causing demand reduction measures to be implemented instead of more generation to be built



ENTSO-e Schema for Electricity Reserves





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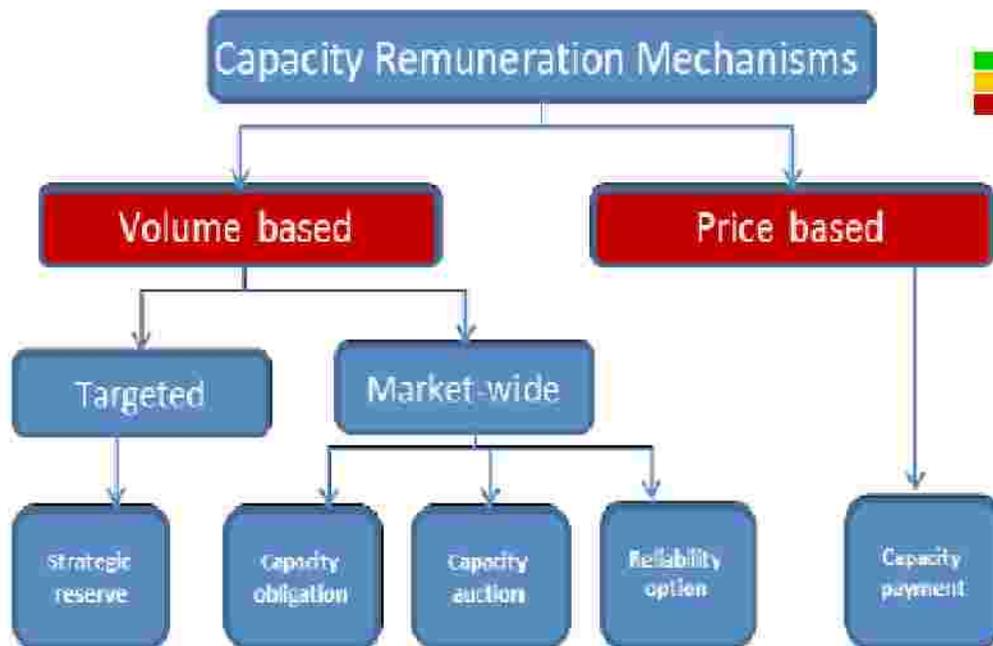
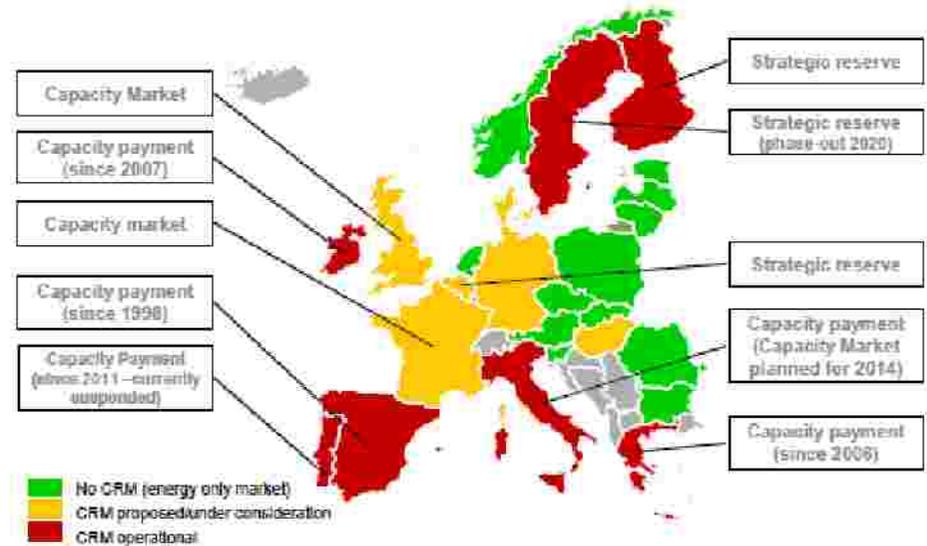
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EU Requirements

- EU Directive 2009/72
 - National energy action plans for long-term ability to meet reasonable demand through investment planning.
 - Monitor security of supply and produce bi-annual reports about the security of supply.
 - Tendering for new capacity
- Regulation 714/2009
 - Access to the Network for Cross-Border Exchanges in Electricity. In particular,
 - 10-year investment plan including generation adequacy.
- Directive 2005/89/EC requires transmission system operators to ensure appropriate level of generation



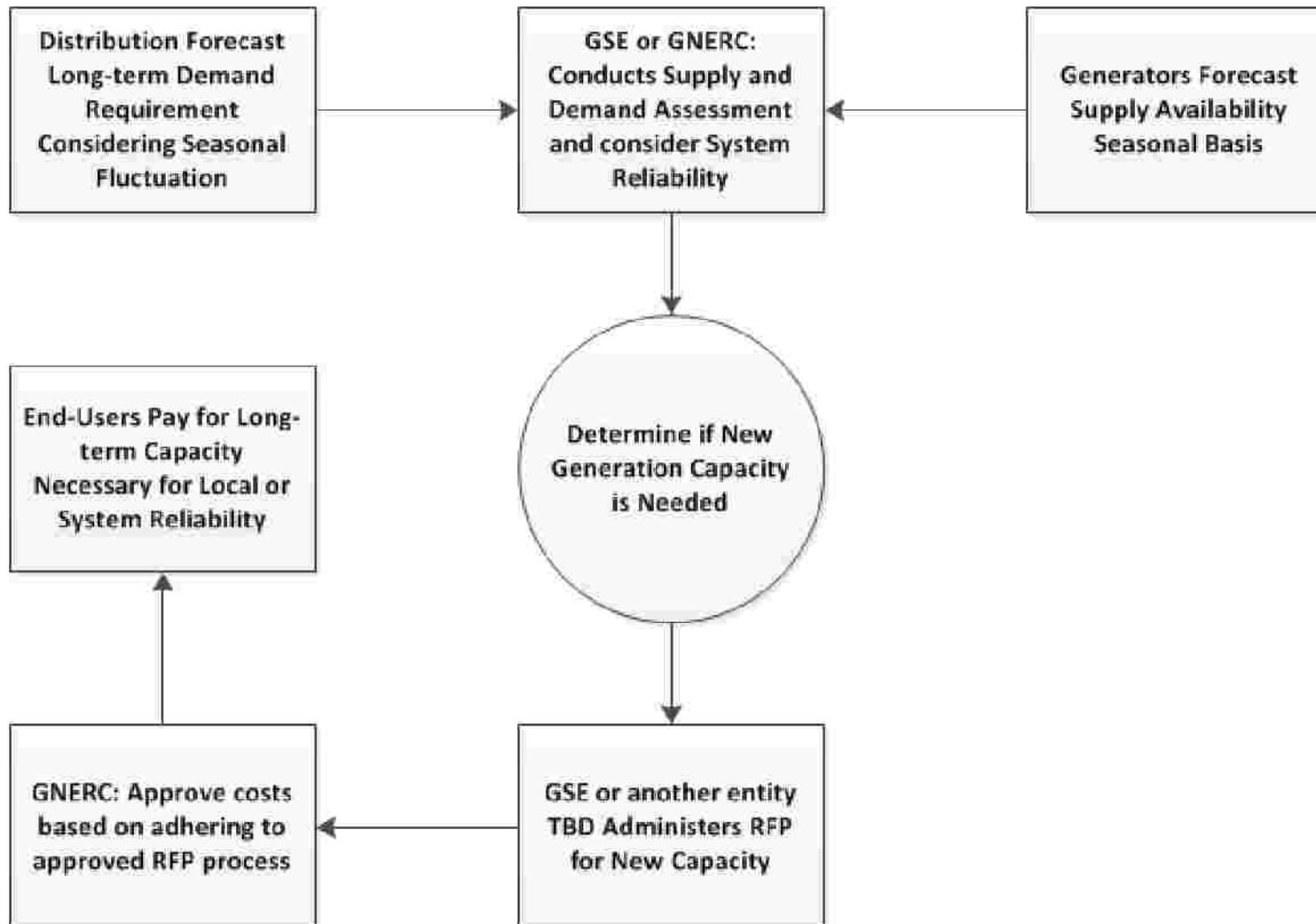
Modes of Adding Capacity



Source: ACER Report July 2013



Suggested Supply and Demand Procurement





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