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**HYDRO POWER AND ENERGY
PLANNING PROJECT (HPEP)**

INTRODUCTION TO THE BALANCING MARKET AND BALANCING GROUP MODEL

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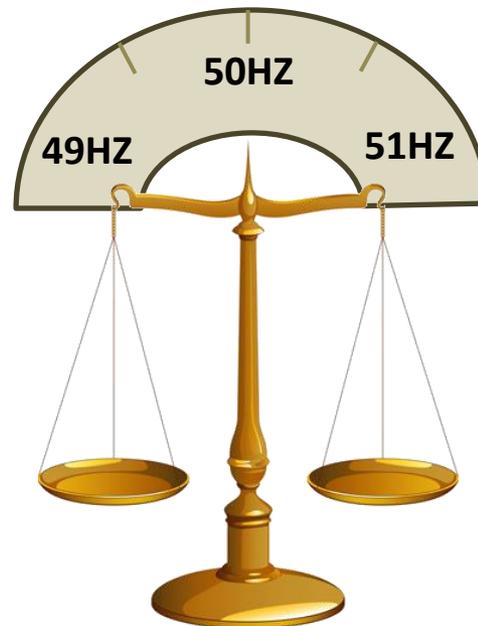
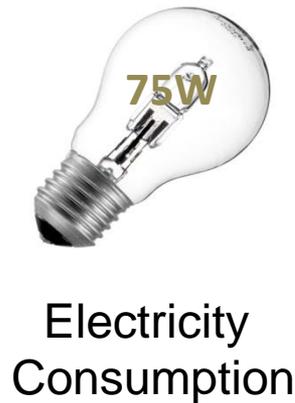
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BALANCE ENERGY

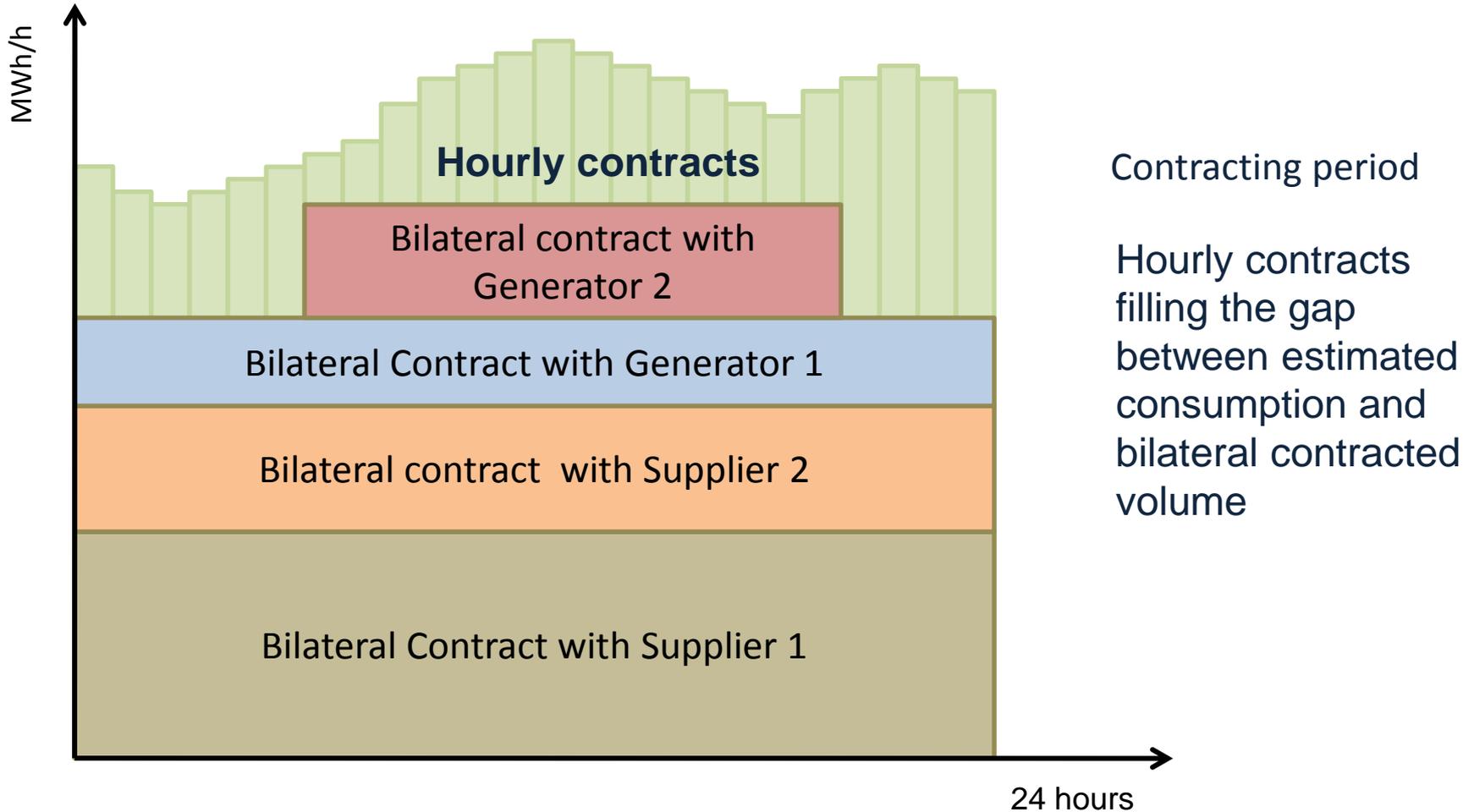
Definition:

“Volume of electricity required for each billing unit to balance the difference between effective delivery according to metered values and the delivery, according the schedule for a particular time unit in order to create zero balance billing unit for the control area”



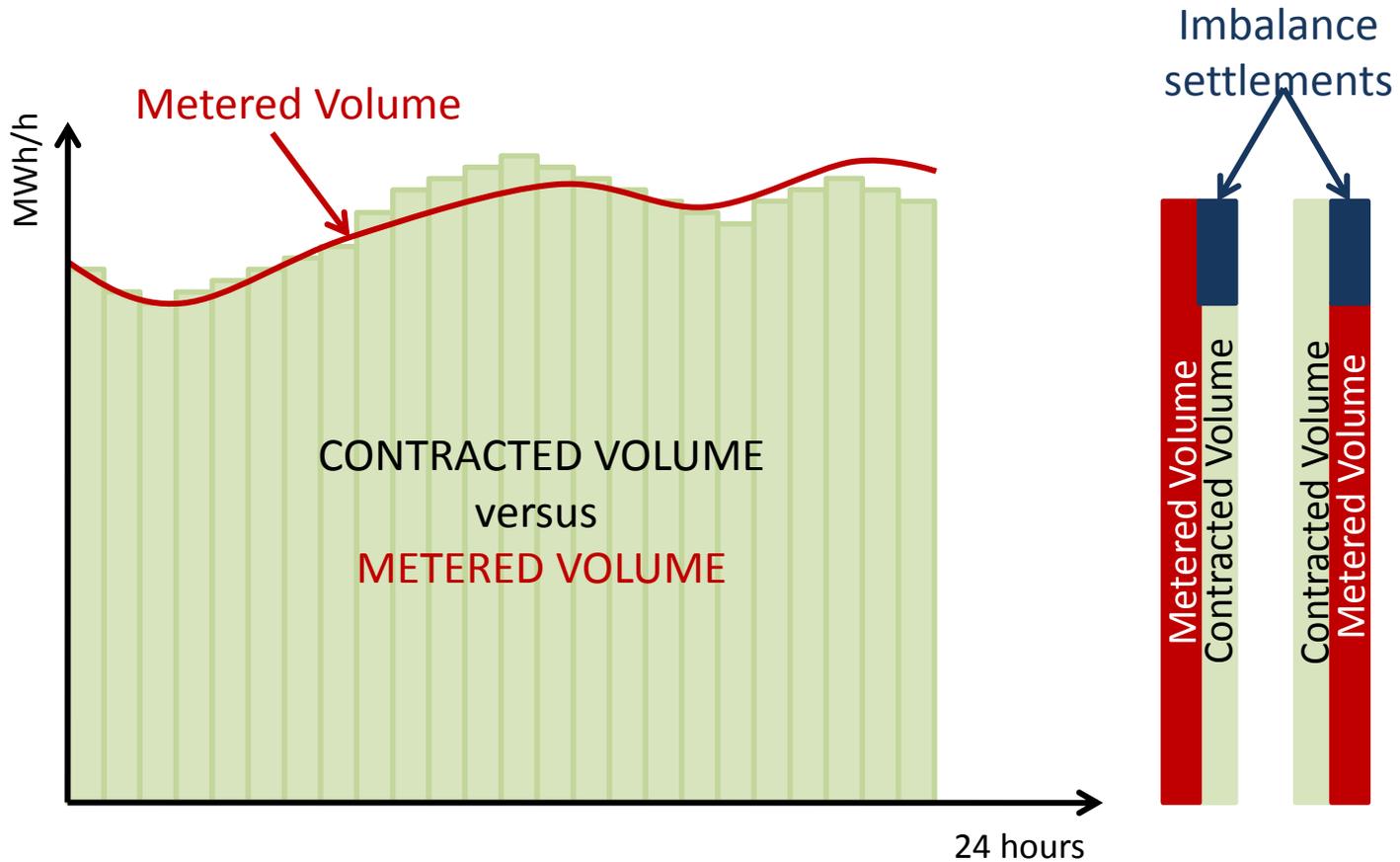


BALANCING RESPONSIBILITIES





BALANCING RESPONSIBLE PARTIES – IMBALANCE SETTLEMENTS





BALANCING GROUP MODEL

- Definition of Balancing Group:

“Virtual group of suppliers and customers within which the amounts of electric energy procured and supplied are balanced”

- The Balance Group is a commercial unification of consumers and producers within a Control Area.
- The Balance Group Representative represents the balance group in its dealing with other market players.
- National legislation is defining the obligations for participation in the balancing groups.
- In some countries participation in balancing groups is mandatory and every market participant (consumer, producer, supplier, trader) must be member of a Balance Group that is registered in the control area.
- The balancing regulations defining the market timing units from 15 minutes to 1 hour.
- In some countries it requires Balance Group to create in every 15 minutes a balance between production and consumption of electricity.
- The discrepancy of this balance is calculated as the balance energy.



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LEGAL AND REGULATORY REQUIREMENTS FOR INTRODUCION OF BALANCING GROUP MODEL

- Requirements in primary and secondary legislation
- Requirements of Market rules
- Requirements of Grid Codes
- Clearing and Settlement Rules
- Independence of the Regulator, of the TSO, and of the MO
- Transparency of the process
- Unbundling of production, transportation of electricity and supply
- Creation of TSO and MO
- Licensing requirements
- Supplier switching rules and procedures



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TYPES OF BALANCING GROUPS

- Main Types of commercial balancing groups:
 - Trading Balancing Groups
 - Supplier Balancing Groups (Mainly used to supply customers)
 - Combined Balancing Groups (used for trading and supplying customers)
- Special Balancing Groups:
 - Balancing Groups can also be used for other purposes:
 - Balancing Groups for Network losses
 - Balancing Groups for Green Energy
 - Balancing Groups for Energy Exchange
 - Cogeneration
 - Balancing Groups for organizing compensation programs



ROLE OF THE CLEARING AND SETTLEMENT AGENT

- The Clearing & Settlement Agent has a very important role in the system
- The Clearing & Settlement Agent is the „key player“ between the Management of the Control Area and the Balance Group Representatives
- The Clearing & Settlement Agent is a company which is NOT an electricity company (grid operator, supplier etc),
- Clearing & Settlement Agent is INDEPENDENT from electricity companies.
- In Austria the the Clearing & Settlement Agent is a joint-stock company.
- Stock is held by several electricity companies, banks, the Stock Exchange, a computer company, which avoids dominant influence of one shareholder/owner.



TECHNICAL REQUIREMENTS AND ORGANIZATION OF MANAGEMENT OF THE BALANCING GROUPS

- Gate closure times
- Market time unit – 1 hour vs 15 minutes
- Imbalance pricing and settlement
- Balance responsibility and defining the BRP
- Mandatory participation
- Reserve capacity determination and nomination of providers of reserve capacity
- Treatment of losses and ancillary services market
- Measurement requirements
- Hardware and software requirements
- Data protection requirements



ROMANIAN BALANCING GROUP MODEL

- According to the Romanian Commercial Code the **TSO is responsible** for balancing. The TSO also acts as Balancing Market Operator, responsible for:
 - registration of balancing market participants,
 - collecting and verification of offers,
 - calculating the quantities necessary for the settlement of transaction afferent to the balancing market.
- Balancing energy is provided via auctions for which pay as bid is used for price determination.
- All generators have the obligation to participate in the central balancing market that includes all Balancing Responsible Parties consisting of dispatchable units of producers and suppliers of consumers.
- According ANRE order No. 36/2005 Balancing Responsible Parties may form a balancing group if:
 - forecast of annual production does not exceed 30% of net injected electricity of the previous year
 - forecast for annual consumption does not exceeds 30% of net consumption of the previous year



HUNGARIAN BALANCING GROUP MODEL

- The balancing market is operated by the TSO.
- Participation is mandatory for all Electricity Traders:
 - either directly (by concluding an agreement with the TSO)
 - becoming a member of a balancing group and assigning the balancing obligation to a balancing party.
- Non-domestic Electricity Traders tend to manage their balancing obligation and enter directly into a balancing agreement with the TSO.
- The balancing market is regulated in detail by both the Electricity Act 2007 and the Commercial Code of the TSO.
- The balancing party must deposit a financial guarantee with the TSO to ensure the safe settlement of the transactions.
- The basis of the financial guarantee is the amount paid to the TSO on average for the three preceding settlement periods.



SLOVENIAN BALANCING GROUP MODEL

- According to Slovenian legislation the TSO (ELES) is responsible for balancing.
- Market Operator operate the Balancing Market.
- The market organization is based on balancing groups.
 - For the establishment of a balancing group the submission of an application to the Market Operator and fulfilment of all required conditions is mandatory.
 - Anybody who fulfils the criteria published at the Market Operator's homepage could lead a balancing group.
 - The leader of a balancing group also acts as Balancing Responsible Party of this group.
 - No Slovenian license or branch office registered in Slovenia is needed.
 - There is no legal obligation for generators to provide balancing energy, except the participation of units larger than 10 MW in primary frequency control.
- According to the Slovenian Market Rules a balancing party failing to fulfil the schedules pays additional costs for the imbalanced energy, or receives lower payment for the energy supplied above the schedules.
- The Market Operator is responsible for calculation of these payments – on the basis of data provided by the TSO – as well as for the whole settlement procedures in this process.



SLOVENIAN BALANCING GROUP MODEL Cont.

- Balance groups can use balancing energy **abroad** by using capacity allocated via auctions.
- Reserving of capacity in advance for balancing purposes is in principle not possible.
- Only the TSO can use the reliability margin for using the balancing energy contracted via auctions for tertiary reserve outside the Slovenian power system.



CHALLENGES IN INTRODUCING BALANCING GROUP MODEL IN GEORGIA

Legal challenges:

- Independence of the Regulator, of the TSO, and of the MO
- Transparency of the process
- Unbundling
- Creation of TSO and MO
- Licensing requirements
- Clearing and settlement
- Supplier switching process

Technical challenges:

- Gate closure times
- Market time unit – 1 hour vs 15 minutes
- Imbalance pricing and settlement
- Balance responsibility and defining the BRP
- Mandatory participation
- Reserve capacity determination and nomination of providers of reserve capacity
- Treatment of losses and ancillary services market



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