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Requirements EB GL

Settlement prices

Balancing energy prices Art 30

- By one year after the entry into force of this Regulation, all TSOs shall develop a proposal for a pricing method applicable to activate balancing energy for frequency restoration reserves and replacement reserves. Such pricing method shall:
 - be based on marginal pricing (pay-as-cleared);
 - define how the activation of balancing energy bids activated for purposes other than balancing affects the balancing energy price, while also ensuring that at least balancing energy bids activated for internal congestion management shall not set the marginal price of balancing energy;
 - establish at least one price of balancing energy for each imbalance settlement period;

Balancing energy bid prices

- On the relative injection side the price the BSP wishes to receive (at least) from the TSO to inject more, respectively withdraw less energy.
- On the relative withdrawal side the price the BSP wishes to pay (at most) to the TSO to withdraw more, respectively inject less energy. With a negative price the BSP receives both energy and money from the TSO.

Balancing energy prices

- The price, be it positive, zero or negative, of the activated volume of balancing energy for the frequency restoration process shall be defined for each direction ... Art 47(2)
- The rules pursuant to ... shall include a definition of the value of avoided activation of balancing energy from frequency restoration reserves or replacement reserves. Art 55(2)

prices balancing energy

	BSP		
ISP	€/MWh		
	injection	avoided activation	withdrawal
1			
2			
...			
96			

Options avoided activation price

Base value avoided activation	Pro	Con
Day Ahead	Liquid market Single value/ISP Public coupling results	Reflects expected conditions OTC values not public
IntraDay	Reflects actual conditions	Less liquid market Single value/ISP not guaranteed: <ul style="list-style-type: none"> • No values/ISP • Multiple values/ISP OTC values not public
Merit Order	Liquidity guaranteed by TSO Single value/ISP Reflects actual conditions Public results Robust	<i>Requires late balancing energy GCT</i> <i>Results in dynamic (C)MOL</i>

Imbalance prices Art 55(3, 4)

- Each TSO shall determine the imbalance price for:
 - each imbalance settlement period;
 - each imbalance price area;
 - each imbalance direction.
- The imbalance price for shortage shall not be less than:
 - the weighted average price for positive activated balancing energy for frequency restoration reserves and replacement reserves;
 - in the event that no activation of balancing energy in either direction has occurred during the imbalance settlement period, the value of the avoided activation of balancing energy for frequency restoration reserves or replacement reserves
- Reverse requirement for imbalance price for surplus

Prices balancing energy & imbalance

	BSP			BRP	
ISP	€/MWh				
	injection	avoided activation	withdrawal	surplus	shortage
1					
2					
...					
96					

Imbalance prices

- On the surplus side the price the BRP receives from the TSO for injecting more, respectively withdrawing less energy in its allocated volume than according to its commercial trade schedules. With a negative price the BRP has to pay the TSO for dumping its surplus into the system.
- On the shortage side the price the BRP has to pay the TSO to withdraw more, respectively inject less energy. With a negative price the BRP receives both energy and money from the TSO.
- Comparing the imbalance transaction with the TSO to the same transaction on the commodity market (base value) will determine whether the BRP wins or loses.

Gains & losses

BSP			BRP	
€/MWh				
injection	withdrawal	avoided activation	surplus	shortage
gain	gain	base value	gain loss	gain loss

Winners & losers

BSP	BRP	
reducing system imbalance	reducing system imbalance	aggravating system imbalance
winner	winner loser	not winner loser

Strategic options BSP

- No incentive to bid:
 - Balancing energy prices $<$ base value
 - Balancing energy gain $<$ imbalance loss
- No incentive to deliver:
 - Balancing energy gain $>$ imbalance loss

Dual pricing

BSP	BRP	
reducing system imbalance	reducing system imbalance	aggravating system imbalance
winner	not winner loser	loser

Single pricing

BSP	BRP	
reducing system imbalance	reducing system imbalance	aggravating system imbalance
winner	winner	loser

Strategic options BRP

Dual pricing:

- Incentive to each BRP to reduce individual imbalance
 - Requires real time knowledge of individual imbalance
 - No level playing field
 - Incentive strength proportional to expected loss
 - Risk of counteracting BRP flexibilities

Single pricing:

- Incentive to all BRPs to reduce joint imbalance
 - Requires real time knowledge of joint imbalance
 - Level playing field
 - Incentive strength proportional to expected gain/loss
 - Risk of overshooting: winners become losers and vice versa

Pricing consistencies NL

- Portfolio management on equal conditions for all BRPs:
 - no portfolio requirements
 - no exemptions
 - same imbalance pricing
- Balancing energy bid prices on equal conditions for all BSPs
 - no discrimination contracted/free bids
 - bids/bid price per ISP
- Balancing energy/ISP from frequency restoration process only
 - no other processes (RR)
 - no distinction between aFRR and mFRR
 - per direction at one price
- Imbalance price equal to balancing energy price