TEMPLATE B: IGCC VALUES OF AFRR AVOIDED ACTIVATION TEMPLATE

Basic Information	
IGCC Participating Member(s)	Slovenská elektrizačná prenosova sustava, a.s. (SEPS)
Invoicing Task Operator	TenneT TSO GmbH

Summarized Information on aFRR energy pricing	
aFRR activation methodology? (pro-rata/ merit-order-list)	merit-order-list
Pricing of aFRR energy? (pay-as-bid/ marginal pricing/ fixed price/ other)	pay-as-bid
Accounting period for aFRR energy? (15min/ 60min)	15 min.
Netting of positive and negative aFRR energy deliveries over accounting period? (yes/no)	no
Separate pricing of positive and negative aFRR energy (yes or no)	yes
Negative prices for positive aFRR energy possible?	yes
Negative prices for negative aFRR energy possible?	yes
Usual determination of IGCC Values of avoided aFRR? (D+1/ following month/ etc.)	D+1
Final amounts (not possible to change them) of aFRR energy deliveries are known? (Month following the delivery/ etc.)	M+2

Calculation of IGCC Values of avoided aFRR

The IGCC Values of avoided upward and downward aFRR activations are determined separately for IGCC import and IGCC export deliveries by the activated aFRR energy in the respected direction. The IGCC Values of avoided aFRR for both IGCC import and IGCC export are determined as the quantity-weighted average of aFRR energy costs billed for the respected direction within the settlement period in Slovakia.

If there was no aFRR energy activation in negative or positive direction, the aFRR energy price that would have been paid for the first activated bid in the Slovak merit order list in the respective direction is taken as the IGCC Values of avoided aFRR.

$$C_{i,IMP} = \frac{M_{aFRR\_pos,i}}{aFRR_{pos,i}}$$

$$C_{i,EXP} = \frac{M_{aFRR\_neg,i}}{aFRR_{neg,i}}$$

Variable	Description	Unit	Sign
$aFRR_{pos,\ i}$	Amount of activated positive aFRR energy for the IGCC settlement period$_i$.	[MWh]	Always positive.
$aFRR_{neg,\ i}$	Amount of activated negative aFRR energy for the IGCC settlement period$_i$.	[MWh]	Always positive.
$C_{i,Imp}$	Resulting IGCC Value of avoided aFRR of SEPS for IGCC import for the IGCC settlement period $_i$.	[€/MWh]	Positive values means SEPS pays for activation of positive aFRR energy. Negative value means SEPS is paid for activation of positive aFRR energy.
$C_{i,Exp}$	Resulting IGCC Value of avoided aFRR of SEPS for IGCC export for the IGCC settlement period$_i$.	[€/MWh]	Positive value means SEPS is paid for activation of negative aFRR energy. Negative value means SEPS pays for activation of negative aFRR energy.
$M_{aFRR\_pos,\ i}$	Total costs for positive aFRR energy deliveries of SEPS for the IGCC settlement period$_i$.	[€]	Positive value means SEPS has costs. Negative value means SEPS receives payment.
$M_{aFRR\_neg,\ i}$	Total costs for negative aFRR energy deliveries of SEPS for the IGCC settlement period$_i$.	[€]	Positive value means SEPS receives payment. Negative value means SEPS has costs.

Examples for calculation of IGCC Values of avoided aFRR

Example for one IGCC settlement period of a day:

Example for IGCC Value of avoided aFRR for import			
	aFRR activated energy amount in MWh	Price in €/MWh	Costs in €
Bid 1	20	80	1 600
Bid 2	30	90	2 700
Bid 3	5	100	500
Sum ($aFRR_{pos}$ and M_{aFRR_pos})	55		4 800

IGCC Value of avoided aFRR €/MWh	87,273

Example for IGCC Value of avoided aFRR for export			
	aFRR energy amount in MWh	Price in €/MWh	Revenues[1] in €
Bid 1	15	-30,00	-450
Bid 2	20	-32,00	-640
Bid 3	5	-40,00	-200
Sum ($aFRR_{neg}$ and M_{aFRR_neg})	40		-1290

IGCC Value of avoided aFRR €/MWh	-32,250

[1] Negative revenues are costs.