



**Panel Discussion:
Current situation and development of
system services as an opportunity for
final customers**

ELES

Matjaž Dolinar,
Vienna, 15.10.2019

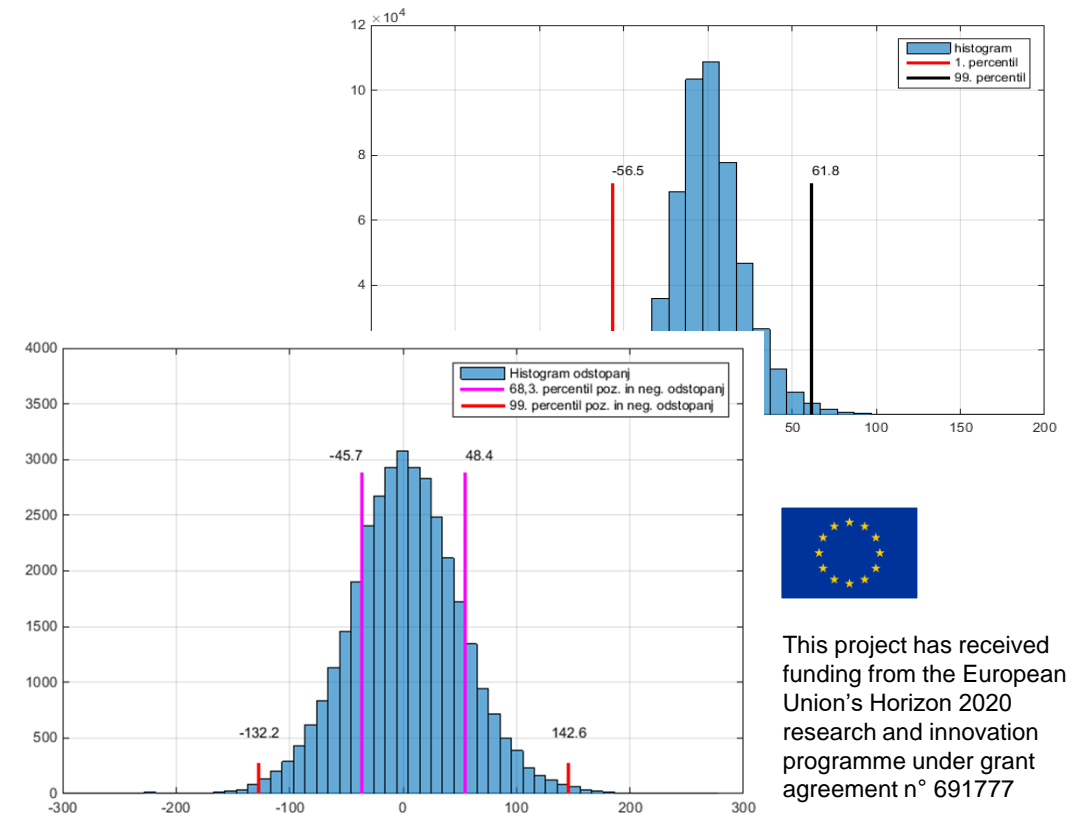


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 691777

About system services in Slovenia

- System services:
 - FCR (prev. primary control)
 - aFRR (prev. secondary control)
 - mFRR (prev. tertiary control)
 - RR not used
 - other services (voltage control, black start, etc.)
- About developments in reserve dimensioning (trends)
- About development of ancillary service market in Slovenia
 - Where we were and where we are going
 - Major milestones:
 - guideline on electricity balancing (EBGL) in 2017
 - NRA approval of new Terms& Conditions in 2019
 - update of Slovenian Energy Law (EZ-1) in 2019
- Implementation of changes in 2020
- International cooperation (MARI, PICASSO)

FCR and FRR capacity in 2019		
FCR	aFRR	mFRR
• 14-18 MW	• +/- 60 MW	• + 250 MW • - 71 MW

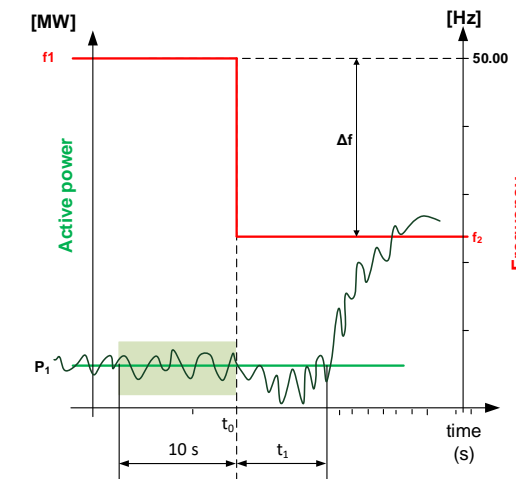
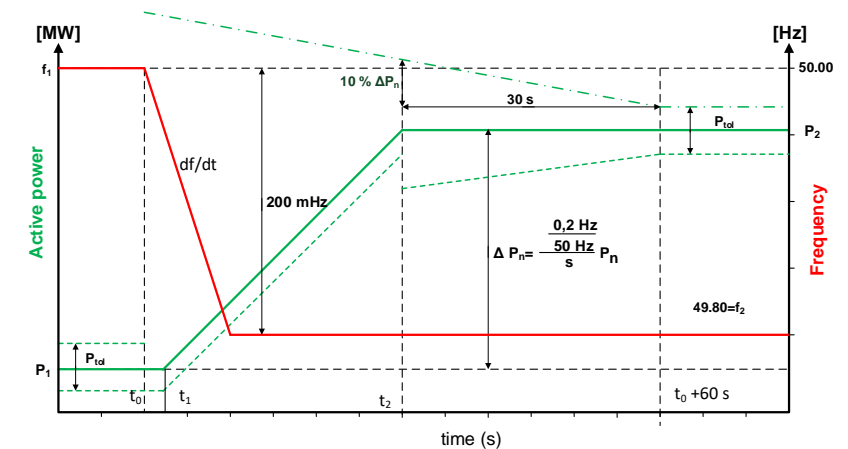


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 691777

Ancillary services market development - FCR

- Major change: from obligatory to market based

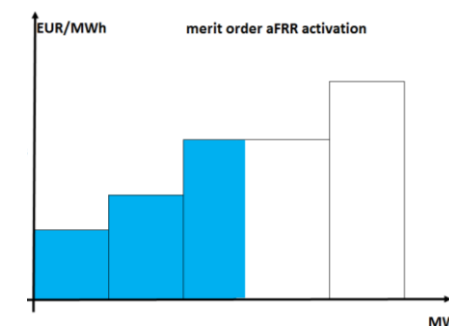
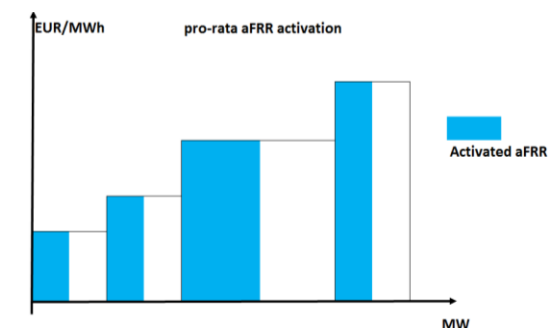
	In 2015	2020	2020+
Procurement of capacity	obligatory for all generators	market based (local market)	market based (FCR cooperation)
Procurement of energy	/	/	/
Payment	none	pay as bid	marginal pricing
Reserve offered by	all available generators	3 already qualified BSPs	inclusion of batteries and DR/DG
Qualification	during commissioning	every 5 years / after any change	every 5 years / after any change
Monitoring	/	on-line monitoring	on-line monitoring



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 691777

Ancillary services market development - aFRR

	In 2015	2020	2020+
Procurement of capacity	2 BSPs, yearly negotiations	market based (3-4 BSPs exp.)	market based
Procurement of energy	yearly bid	daily bids	daily bids
Payment	pay as bid	pay as bid	marginal pricing
Reserve offered by	classical producers	classical producers batteries (exp. 10 %) DR/DG (exp. 5 %)	classical producers ↓ batteries ↑↑↑ DR/DG ↑
Activation	pro-rata (gradient), activation per unit	MOL (FAT 5) portfolio activation	PICASSO MOL (FAT 5) portfolio activation
Qualification	tested only during commissioning	every 5 years / after any change	every 5 years / after any change
Monitoring	basic on-line / post-festum monitoring	on-line / post-festum monitoring	on-line / post-festum monitoring



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 691777

Ancillary services market development - mFRR

	In 2015	2020	2020+
Procurement of capacity	market based	market based	market based
Procurement of energy	yearly bid	daily bids	daily bids
Payment	pay as bid	pay as bid	marginal pricing
Reserve offered by	mostly classical producers DR/DG (<5%)	classical producers DR/DG (exp. 20 %) Batteries (<5%)	classical producers ↓↓ batteries ↑↑ DR/DG ↑↑↑
Activation	MOL (FAT 15) activated by phone	MOL (FAT 12.5) automated activation	MARI MOL (FAT 12.5) automated activation
Qualification	certificates by external institution	every 5 years / after any change	every 5 years / after any change
Monitoring	limited post festum monitoring	on line / post festum monitoring	on line / post festum monitoring





Thank you



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 691777