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Flexible Nordic Energy Systems



# **Regulatory barriers for activating flexibility on the Nordic-Baltic electricity market**

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## Framework Conditions for flexibility in the Electricity Sector

Nordic and Baltic Countries

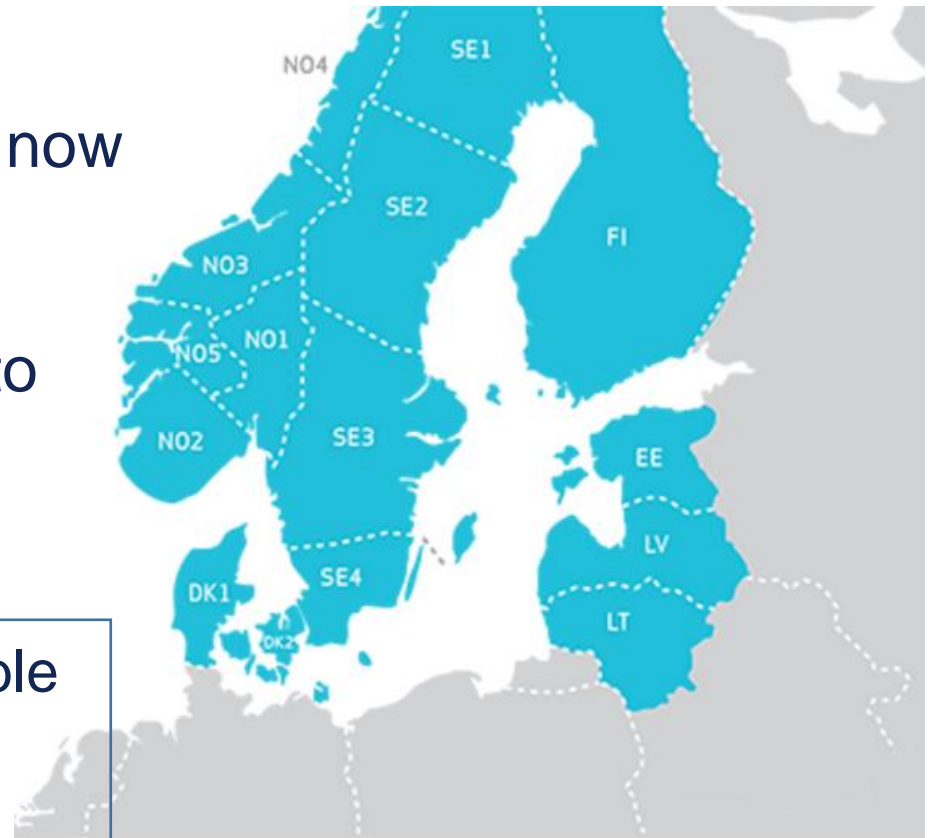
2016-09-23



- Main results
- How to move forward

- The scope of the study is the Nordic-Baltic countries
- Flexibility is not an issue right now
- But this situation is expected to change in the next decades

How to handle less and less flexible power systems with increasing amounts of variable energies?



- State of the art
  - Identification of flexibility resources
  - Designation of framework conditions

	Market-based	Regulatory-based			
	Market design	Direct regulation	Fiscal policies	RES support scheme	Regulatory regime
Generation	√	√	√	√	
Demand	√	√	√		
Power grids		√			√

- Collection of qualitative data



# Key findings

- In itself the Nord Pool markets are a driver for flexibility...

	DK	EE	Fi	LA	LI	NO	SW
Common day-ahead market	Green	Green	Green	Green	Green	Green	Green
Common intraday	Green	Green	Green	Green	Green	Green	Green
Common regulating power	Green	Orange	Green	Orange	Orange	Green	Green
Common cross-border allocation	Green	Green	Green	Green	Green	Green	Green

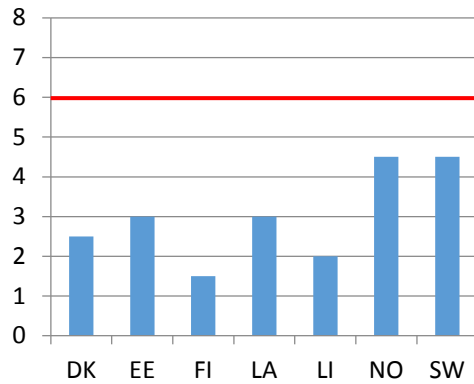
- ...But the handling of imbalances still differs with respect to VRE's balancing responsibility

# Key findings

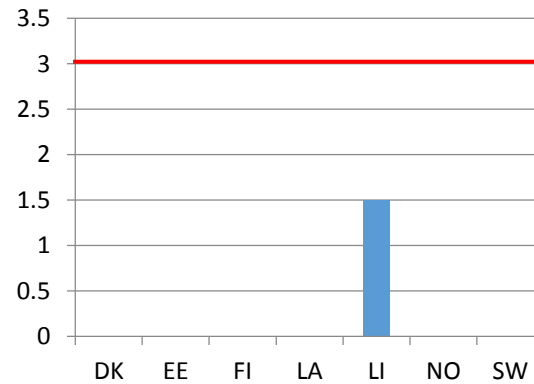


## Sum of the barriers for the flexibility resources

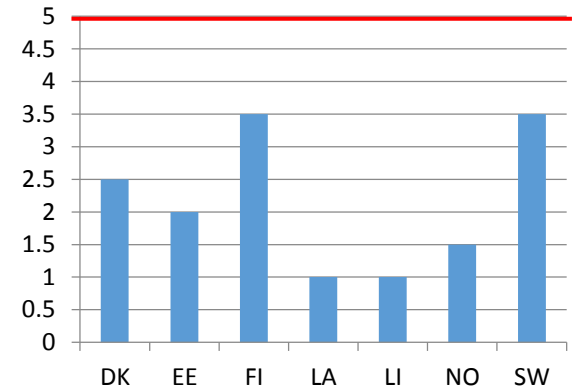
### Supply-side



### Demand-side



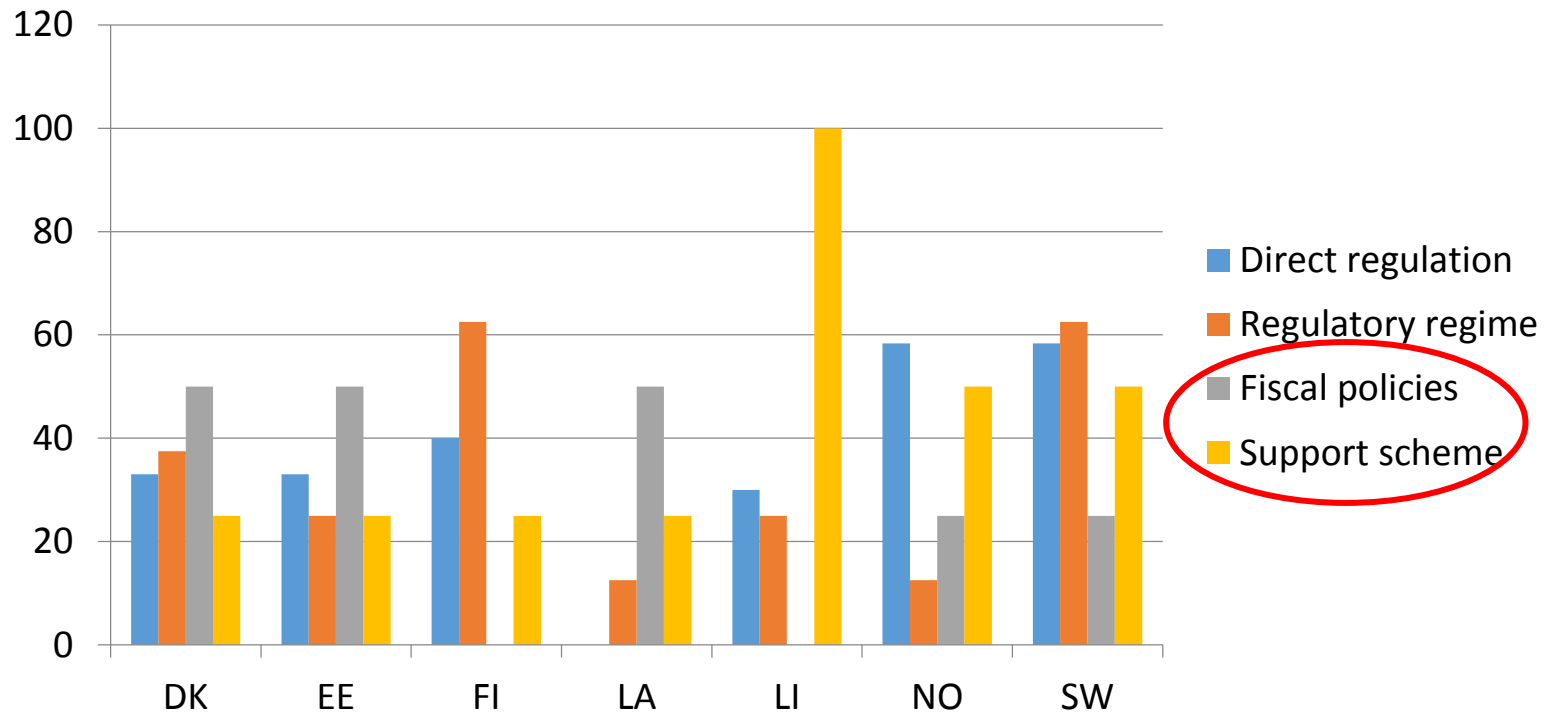
### Electricity grid



# Key findings



Sum of the barriers for the flexibility resources



# Next steps

## The link with WP3 in Flex4RES

- 1- Flexibility-oriented RES support schemes
- 2- Introduction of time varying tariffs







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Category	Relevant technology/ actor	Framework condition	DK	EE	FI	LA	LI	NO	SW
<b>Market</b>									
MD		Common day-ahead market							
MD		Common intraday							
MD		Common regulating power							
MD		Common cross-border allocation							
<b>Supply-side</b>									
FP	Conventional plants	Presence of tax reduction / subsidy							
DR	Fossil	Absence of restrictions							
	Hydro	Absence of restrictions	n/r	n/r					
SS	RES	Market-based support							
		Support during negative price periods							
<b>Demand-side</b>									
FP	Industrial	Fiscal measures & subsidies							
DR	Consumers	Roll-out of smart meters							
DR	Prosumers	Net metering							
<b>Grid infrastructures</b>									
RR	TSO	Elimination of investment risks							
RR		Flexibility-friendly performance targets							
DR		European funding							
RR	DSO	Elimination of investment risks							
RR		Flexibility-friendly performance targets							