

Business Area Markets

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Facts and figures – Business Area Markets

Our Mission

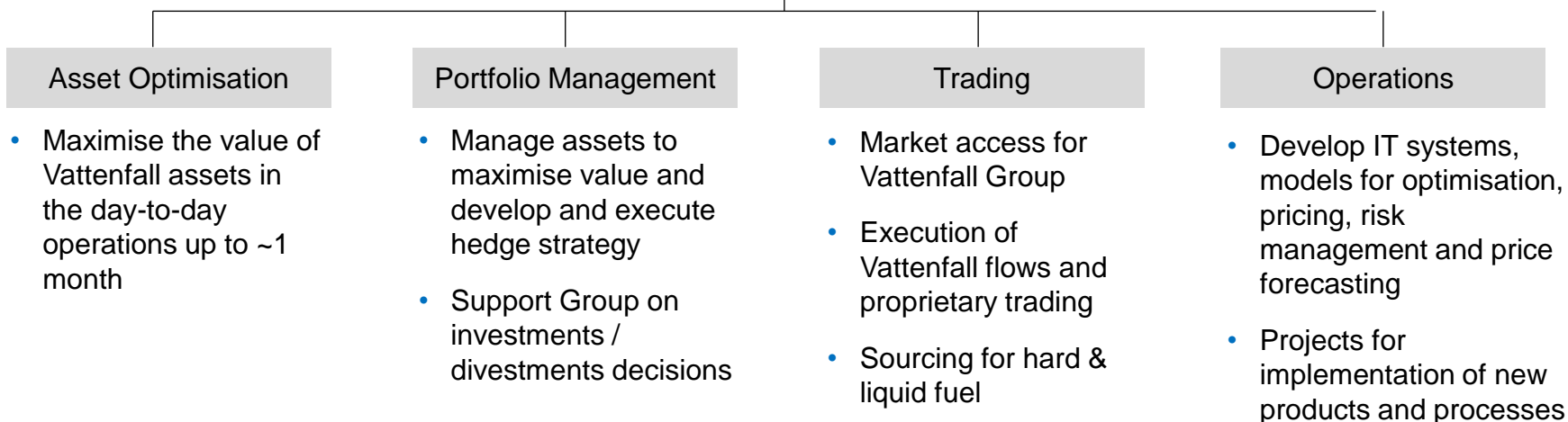
We commercially optimise Vattenfall's and our customers' portfolios and create value in energy trading in a responsible manner, readily adapting to the evolving market landscape.

Trading volume 2014 (external)

Electricity (TWh)	2,411
CO ₂ (EUA and CER), mt	1,040
Gas (TWh)	275
Coal (Swaps and FFA), mt	178
Number of counterparts	~750
Transactions per day	>2,000

BA Markets

Number of employees (FTE) ~700



Vattenfall's hedge strategy

The hedge strategy is optimised on Group level with the purpose of supporting the financial targets of the owner

Group Level

Support achieving owner's financial targets and own ambition to maintain single A rating

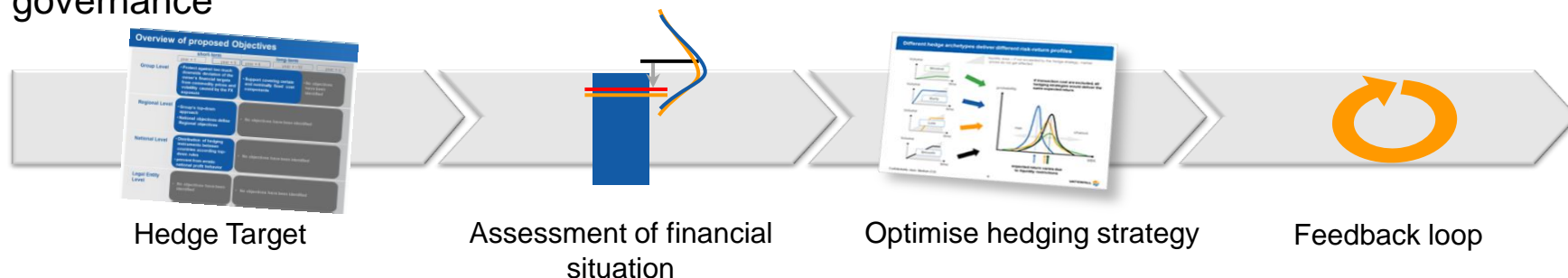


FFO / Adjusted Net Debt remains as main financial indicator for hedging



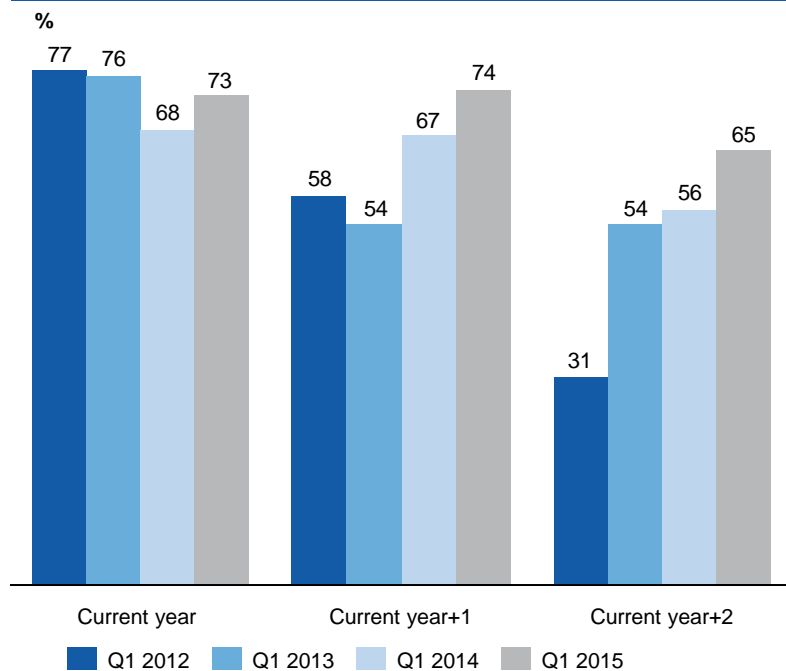
FFO / Adjusted Net Debt (as defined by Vattenfall) > 22 %

The development and execution of the hedging strategy follow a clear process description and governance



Hedge levels and prices

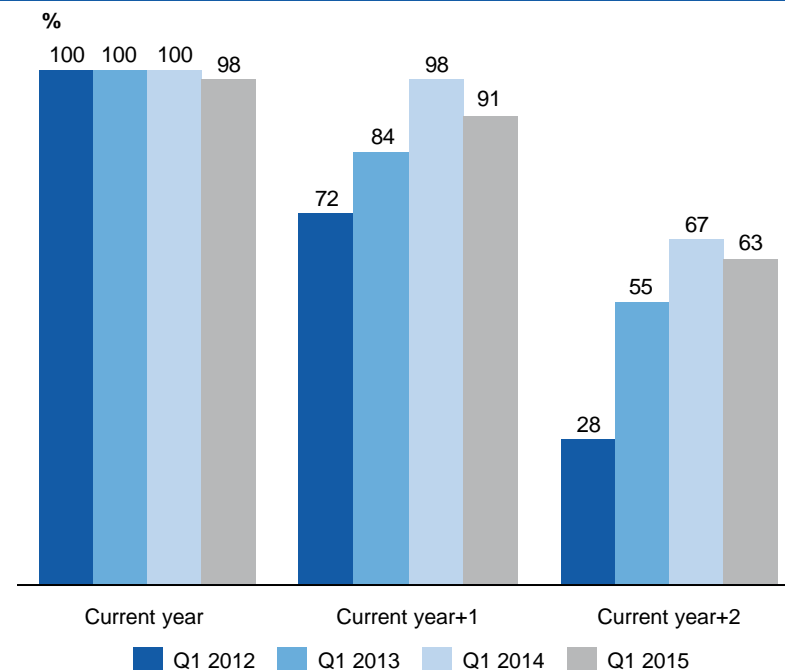
Hedging level at the end of each Q1 - Nordic



	Current year			Current year +1			Current year +2		
	Ratio	Price	Year	Ratio	Price	Year	Ratio	Price	Year
Q1 2012	77%	45	2012	58%	46	2013	31%	43	2014
Q1 2013	76%	46	2013	54%	43	2014	54%	42	2015
Q1 2014	68%	40	2014	67%	38	2015	56%	36	2016
Q1 2015	73%	37	2015	74%	34	2016	65%	32	2017

Note: hedge levels (ratios) in % and prices in EUR/MWh

Hedging level at the end of each Q1 – Continental/UK

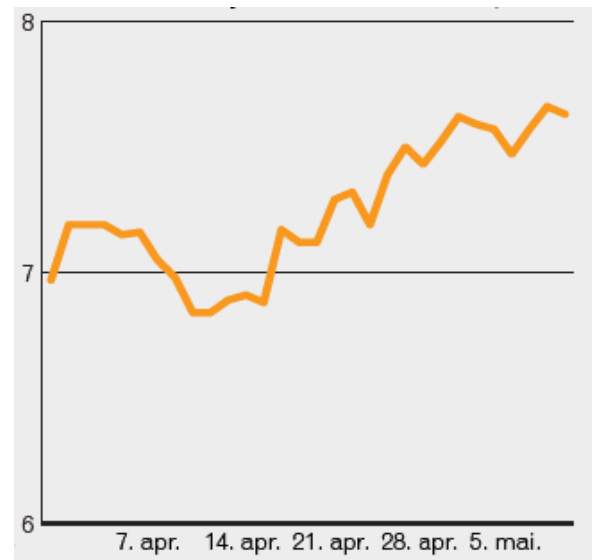


	Current year			Current year +1			Current year +2		
	Ratio	Price	Year	Ratio	Price	Year	Ratio	Price	Year
Q1 2012	100%	55	2012	72%	56	2013	28%	56	2014
Q1 2013	100%	55	2013	84%	51	2014	55%	49	2015
Q1 2014	100%	50	2014	98%	44	2015	67%	39	2016
Q1 2015	98%	45	2015	91%	39	2016	63%	36	2017

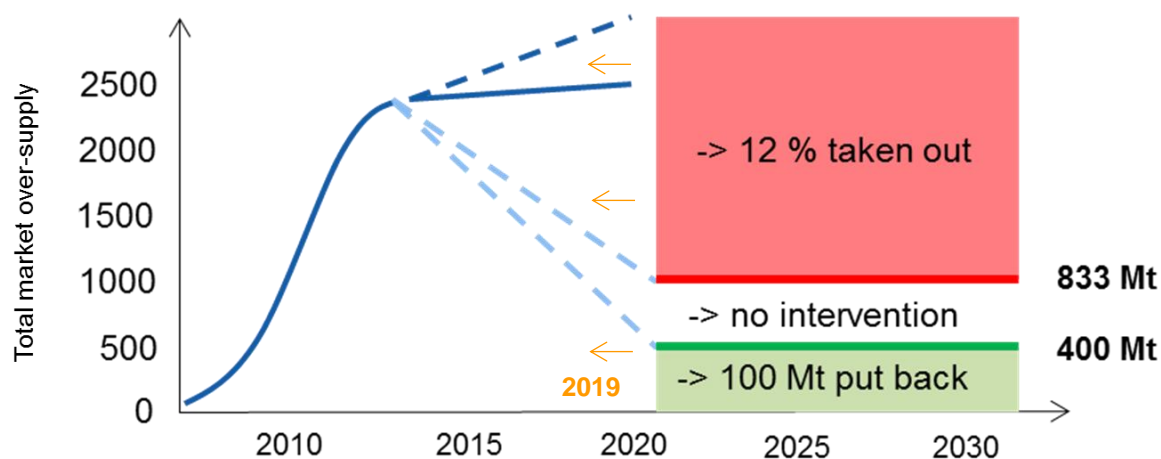
Vattenfall welcomes the decision on the EU ETS Market Stability Reserve (MSR)

Political agreement reached on 5 May 2015

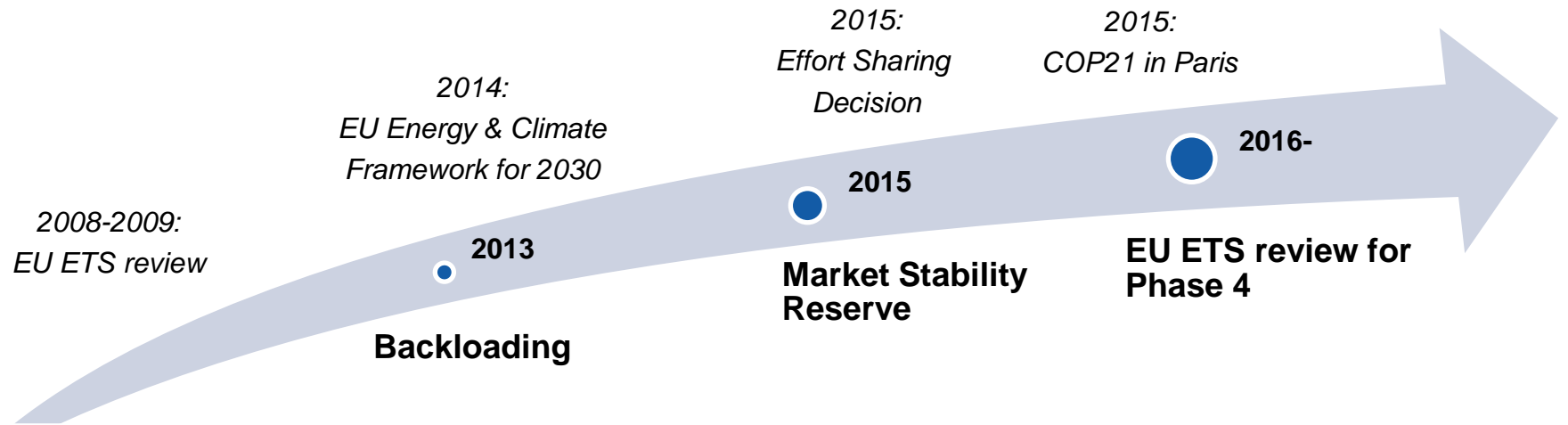
- Start date: 1 January 2019 (instead of 2021)
- Direct transfer of the “backloaded” volume of EUAs into the MSR (instead of reinjecting them into the EU ETS market in 2019-2020)
- Direct transfer of “unallocated” EUAs from Phase 3 into the MSR (future usage to be considered in the upcoming ETS review)
- Shortening of the MSR’s reaction time.



- MSR’s two main benefits:
 - address the massive over-supply of EUAs short-term.
 - contribute to a more robust CO₂ price signal long-term.
- By 2020, the amount of EUAs set-aside in the MSR could reach up to 2 billion.



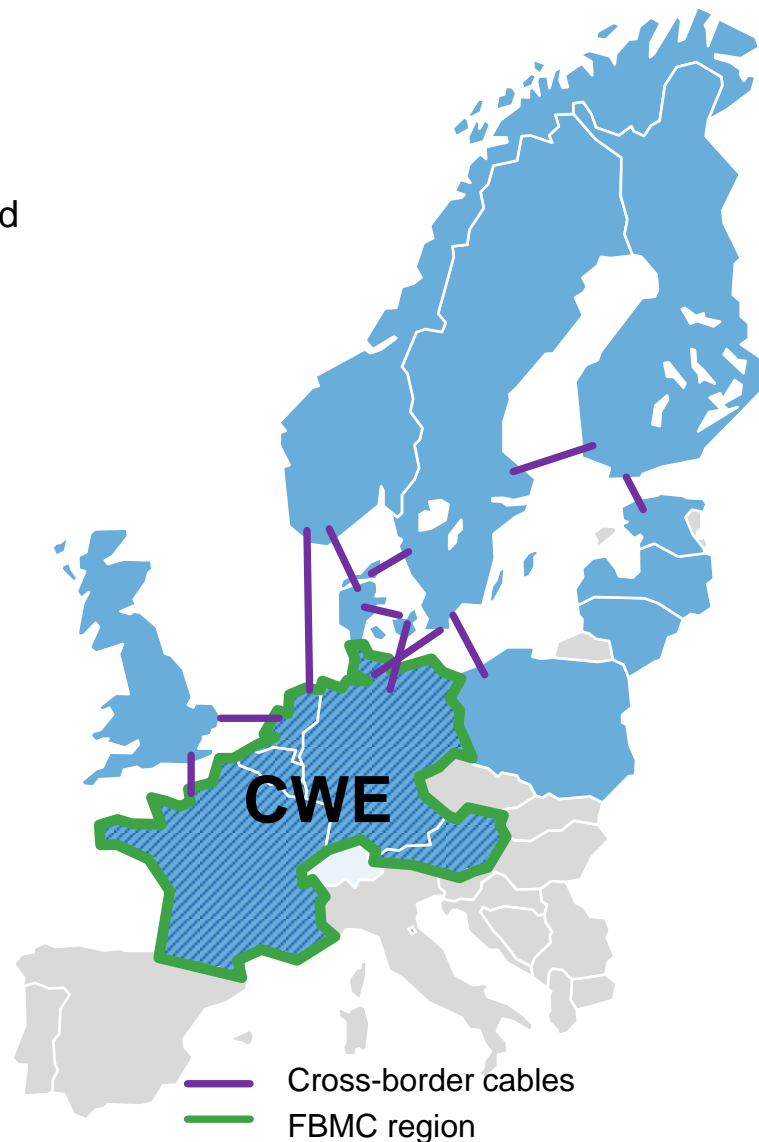
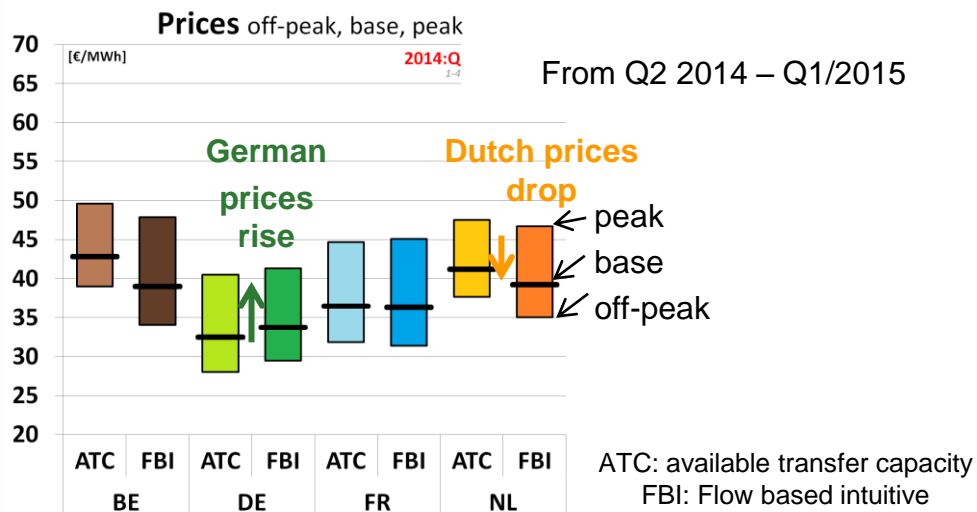
The EU ETS is being structurally reformed, step by step



	Backloading	MSR	EU ETS review
Political process	July 2012 – Jan. 2014	Jan. 2014 – May 2015	Summer 2015 –
Content of decision	<ul style="list-style-type: none"> Adjustm. of EUA auction volumes within Phase 3: <ul style="list-style-type: none"> 2014: -400 M 2015: -300 M 2016: -200 M 2019: +300 M 2020: +600 M ← 	<ul style="list-style-type: none"> Market Stability Reserve established and operative as from 1 January 2019 Rule-based mechanism to address the over-supply & make CO₂ price robust The backloaded and unallocated EUAs directly placed into the Reserve 	<ul style="list-style-type: none"> Revision of the Linear Reduction Factor (LRF) in line with the EU's 2030 climate target Phase 4 allocation rules. CO₂ leakage measures and competitiveness Expansion of the EU ETS to other sectors, etc
Status			In preparation..

European market integration is proceeding

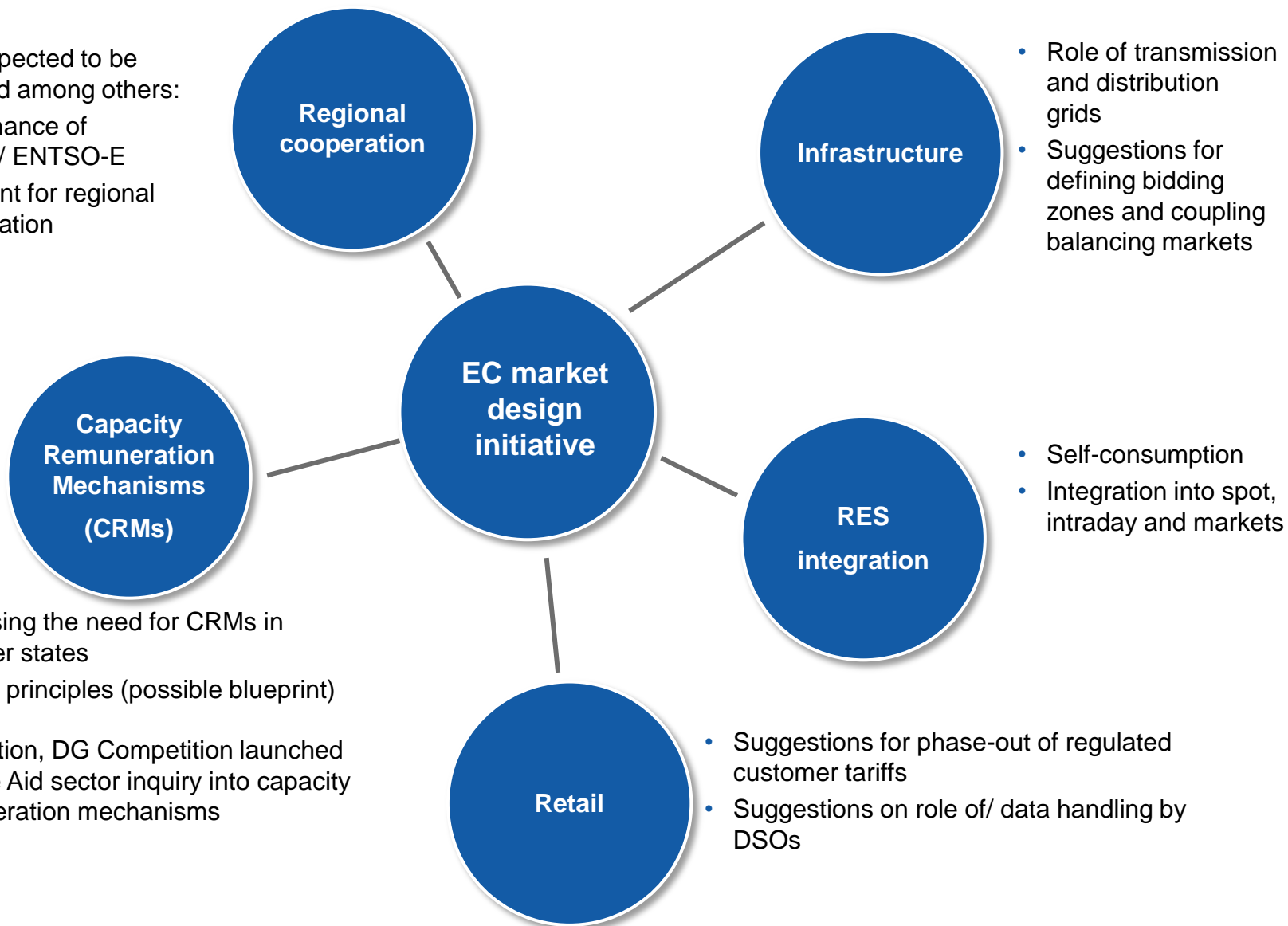
- Introduction of flow based market coupling (FBMC) in Central Western Europe on 20 May is a further step towards an integrated European energy market.
 - Change of algorithm at power exchange to better reflect physical flows: Capacity calculation and allocation is performed together with market clearing.
- ⇒ More transmission capacity is made available to transport electricity across borders. This leads to price convergence, better integration of renewables, security of supply and lower costs for consumers.



EC's initiative – towards an improved market design

Topics expected to be addressed among others:

- Governance of ACER / ENTSO-E
- Blueprint for regional cooperation



Vattenfall's view: No need for CRMs in a situation of fundamental oversupply

- **Currently, there is no capacity shortage**
 - Low prices and mothballing of capacity are signals of overcapacity
 - Allow prices and capacity to adjust until a new equilibrium is reached
- **Before introducing CRMs, strengthen the existing market**
 - Enable prices to freely fluctuate. Interpret high prices as signals for investment in desired capacity and storage solutions
 - Integrate renewable energy into the European power system by e.g. moving gate closure times closer to real-time
 - Increase flexibility in the power system by e.g. demand side management, coupling of sectors and network as well as investment into interconnection
- **Regional cooperation reduces the need for national generation adequacy measures**
 - Think regionally. Conducting regional supply adequacy assessments (that take cross-border contributions into account) and judging the capacity situation against nationally desired security of supply levels, allows for more efficient use of resources
 - If the target supply adequacy level is in danger, the TSO should be allowed to procure a strategic reserve. Regional solutions for the strategic reserve should be sought

Focus areas

...a trusted provider of wholesale market services, and responsible trader

Challenges/Opportunities	Focus areas
<ul style="list-style-type: none">• A New Energy Landscape is evolving• Markets increasingly global and interconnected• Rising share of intermittent production• Liquidity stable, but low volatility offering fewer opportunities• Uncertain regulation	<ul style="list-style-type: none">• Increase focus on asset backed and physical trading activities to generate more value from Vattenfall's portfolio• Expand BA Markets platform by repositioning trading & origination to growing value pools - products, commodities, geographies• Expand our activities in the New Energy Landscape