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FACTS AND FIGURES - BA MARKETS

Trading volumes 2015

Power, TWh	2,193
CO ₂ (EUA and CER), mt	974
Gas, bcm	342
Hard coal (Swaps), mt	300
Oil, kt	10,805

Other key figures 2015

Counterparts & customers	~1050
Transactions (daily)	~2000

Sourcing volumes 2015

Hard coal, mt	10
Gas , bcm	8
Biomass in kt	434

TO BE A LEADING PROVIDER OF WHOLESALE MARKET SERVICES

Business Area Markets creates value by optimising and trading Vattenfall's portfolio, and providing related services externally

Secure our current business

- Deliver on business transformation, secure business continuity in core activities
- Return to higher level of profitability in trading
- Further strengthen weather capabilities
- Establish a culture of continuous improvement

Expand our current business

- Secure effective sales force steering and strengthen sales of existing B2B & wholesale customer offerings
- Deliver on identified PPA and market access services opportunities
- Further strengthen digital capabilities

Open up new business segments

- Identify and pursue decentral and other emerging business segments with good capability fit
- Further strengthen scalability and partnering capabilities

ROLES & RESPONSIBILITIES

BU Customers

- Grow renewable **PPA** business and **improve optimisation of RES and flexibility**
- Grow **aggregator** business (demand response, batteries)
- Grow **B2B sales and other customer** business

BU Assets

- Improve optimization of Vattenfall's conventional **assets**
- **Hedge** Vattenfall's portfolio (assets, customers)
- **Dispatch** of all assets

BU Trading

- **Market access** and trading services for all commodities
- **Risk** taking to support Vattenfall's portfolio
- Fuel **sourcing**

OU Operations

- Enable business to benefit from **technological** developments
- **Rationalise** BA Markets **infrastructure** (systems, models, market data contracts)
- Lead the drive to maintain a culture of **continuous improvement** throughout BAM

GROWTH IN RENEWABLES PPAS

Ambition

Wind/PV PPAs

- We are now 6th largest PPA player in Germany
- We want to be a top 3 player by 2020

Batteries marketing

- We have now 13 MW under management in Germany – ~30% market share of batteries marketed to Primary Reserve (FCR)
- We expect ~300 MW batteries in the market in 3 years and want to keep strong position

1) Source: E&M survey

2) Aggregation, Optimization, Management

Market share Wind/PV PPAs in Germany¹

Player	MS 2015	Rank 2015	MS 2014	Rank 2014
Statkraft	17%	1	18%	1
Danske Comm.	9%	2	10%	2
MVV	8%	3	6%	9
Neas	8%	4	6%	6
Trianel/Gesy	8%	5	6%	7
Vattenfall	7%	6	6%	10
energy2 market	6%	7	7%	4
Clean Eng'ySourc.	6%	8	7%	3
RWE	5%	9	5%	13
Grundgrün	5%	10	6%	5
EnBW	4%	11	2%	14
E.ON	4%	12	4%	11
EWE	4%	13	6%	8
Next Kraftwerke	3%	14	3%	12
Others	7%	15	7%	15

IMPACT OF LIGNITE DIVESTMENT

Vattenfall's divestment of its German Lignite Operations to EPH is expected to take effect with the transfer of shares to the new owner at the end of the month, subject to EU Commission clearance

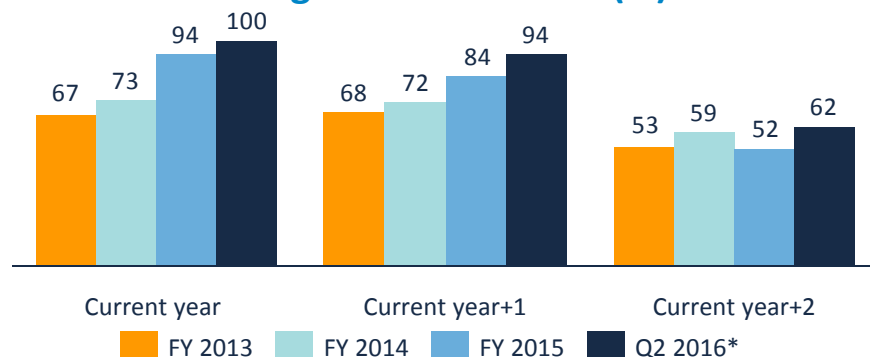
The new entity will operate asset optimization and trading functionality for the Lignite portfolio independent of Vattenfall's operational business

As part of the independent operations, BA Markets renders services in Short Term Optimization, Dispatch, Accounting and IT support under a time-bound service level agreement to EPH

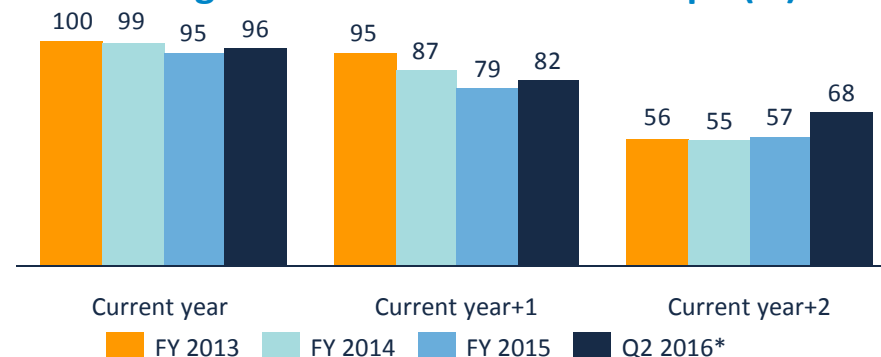
Due to the divestment, BA Markets is also reviewing its hedge strategy as well as its bidding strategies in the AS markets to reflect the remaining Vattenfall asset portfolio

DEVELOPMENT OF HEDGES

Hedge ratios – Nordic (%)



Hedge ratios – Continental Europe (%)



* For continuing operations, excl. lignite operations

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	Current year			Current year +1			Current year +2		
	Ratio	Price	Year	Ratio	Price	Year	Ratio	Price	Year
Dec 2013	67%	40	2014	68%	39	2015	53%	37	2016
Dec 2014	73%	36	2015	72%	34	2016	59%	32	2017
Dec 2015	94%	32	2016	84%	31	2017	52%	30	2018
Q2 2016	100%	32	2016	94%	29	2017	62%	29	2018

	Current year			Current year +1			Current year +2		
	Ratio	Price	Year	Ratio	Price	Year	Ratio	Price	Year
Dec 2013	100%	50	2014	95%	44	2015	56%	40	2016
Dec 2014	99%	45	2015	87%	39	2016	55%	36	2017
Dec 2015	95%	39	2016	79%	35	2017	57%	33	2018
Q2 2016	96%	40	2016	82%	45	2017	68%	38	2018

Note: hedge ratios in % and hedge prices in EUR/MWh. The hedged levels for the Nordic countries pertain to the system price on Nasdaq. Other price risks, such as price area risk, are not covered to the same extent.

EU ETS REFORM

The political negotiations on revising the EU ETS directive for Phase 4 (i.e., 2021-2030) intensify in the autumn

Vattenfall's position, in short:

1. Align the EU climate policy with the Paris Agreement

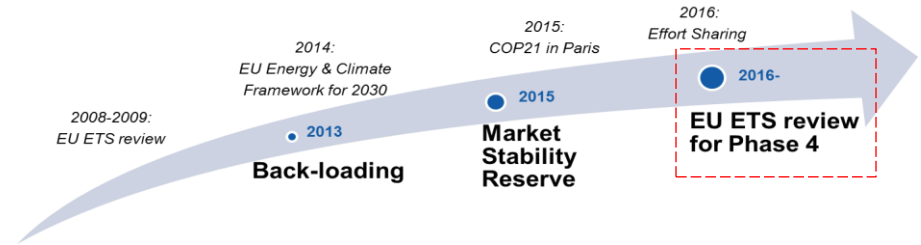
- EU should raise climate target above 40% domestic GHG reductions by 2030 in light of the Paris Agreement's 1.5 °C goal.
- The linear reduction factor (LRF) of the ETS allowance cap should be increased to at least -2.6 % starting from 2021.

2. Protect the ETS market balance from being further distorted

- Avoid a premature release of ETS allowances from the MSR and the Innovation Fund.
- The capacity and functioning of the MSR should be strengthened and coupled with a permanent cancellation of ETS allowances.
- Improve the overall policy coherence and adjust the ETS auction supply for the impact of overlapping policies.

3. Expand the scope of the EU ETS to other countries

- Link ETS with existing or emerging (potentially country-specific) carbon markets (e.g., China)



European Parliament's time plan:

- 13th Oct. 2016: Vote in ITRE Committee,
- 8th Dec. 2016: Vote in ENVI Committee,
- Feb. 2017 (t.b.c.): Vote in EP's Plenary

Key issues in the legislative proposal:

- Steeper annual decline of the ETS allowance cap
- Updated rules for free allocation and CO₂ leakage
- EU-funds for low-CO₂ support using ETS revenues