

# RWE Capital Market Day

London, 28 March 2017



# Disclaimer

This document contains forward-looking statements. These statements are based on the current views, expectations, assumptions and information of the management, and are based on information currently available to the management. Forward-looking statements shall not be construed as a promise for the materialisation of future results and developments and involve known and unknown risks and uncertainties. Actual results, performance or events may differ materially from those described in such statements due to, among other things, changes in the general economic and competitive environment, risks associated with capital markets, currency exchange rate fluctuations, changes in international and national laws and regulations, in particular with respect to tax laws and regulations, affecting the Company, and other factors. Neither the Company nor any of its affiliates assumes any obligations to update any forward-looking statements.

# Management team attending today

## RWE AG



**Rolf Martin Schmitz**  
CEO



**Markus Krebber**  
CFO

## Power Generation



**Frank Weigand**  
CFO



**Roger Miesen**  
CTO  
Hard Coal,  
Gas, Biomass,  
Nuclear



**Lars Kulik**  
CTO  
Lignite

## Supply & Trading



**Tom Glover**  
CCO  
Commercial  
Asset  
Optimisation



**Andree Stracke**  
CCO  
Origination &  
Gas Supply



**Peter Krembel**  
CCO  
Trading



**Michael Müller**  
CFO

# Today's agenda

<b>I.</b>	<b>Strategic outlook</b>	Rolf Martin Schmitz
<b>II.</b>	<b>Financial highlights</b>	Markus Krebber
<b>III.</b>	<b>Lignite &amp; Nuclear</b>	Frank Weigand
<b>IV.</b>	<b>European Power</b>	Roger Miesen
<b>V.</b>	<b>Commercial Asset Optimisation</b>	Tom Glover
<b>VI.</b>	<b>Supply &amp; Trading</b>	Andree Stracke

# Investment highlights



Leading integrated European generation and trading business



Strong track record of operational excellence and commercial optimisation



Well placed to benefit from fundamental changes in energy markets



Solid financial position and focus on cash flow generation



Committed to value creation and sustainable dividend with upside potential

# Strategic outlook

Leading provider of security of supply  
with attractive positioning for future market  
developments

Rolf Martin Schmitz  
Chief Executive Officer  
RWE AG

# Continuing to actively shape our future

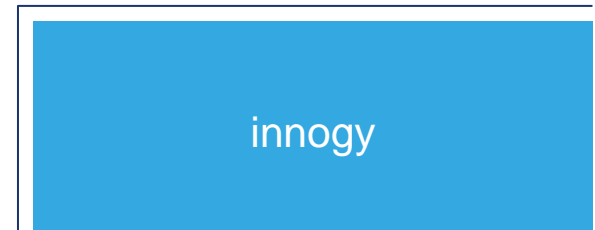


## Operating business



**Operational focus**

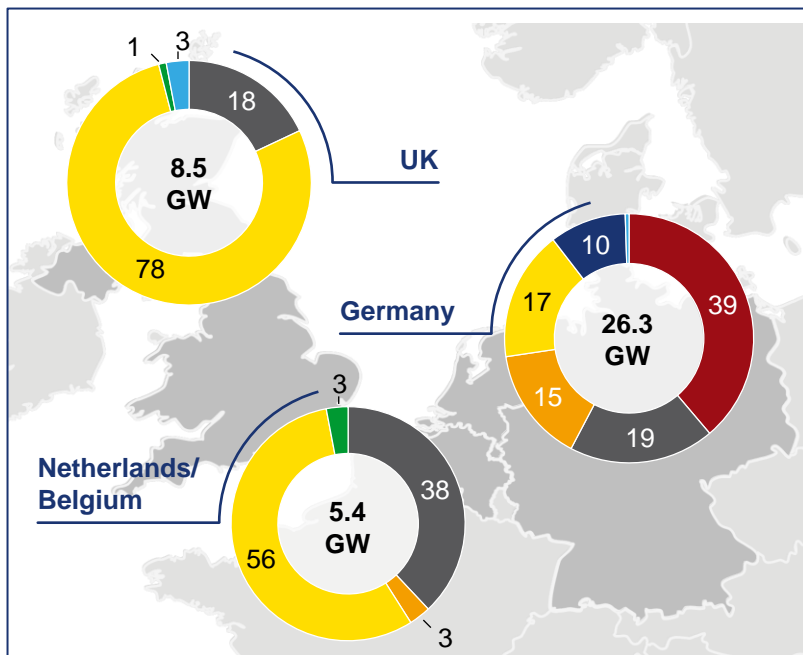
## Portfolio management



**Financial investment**

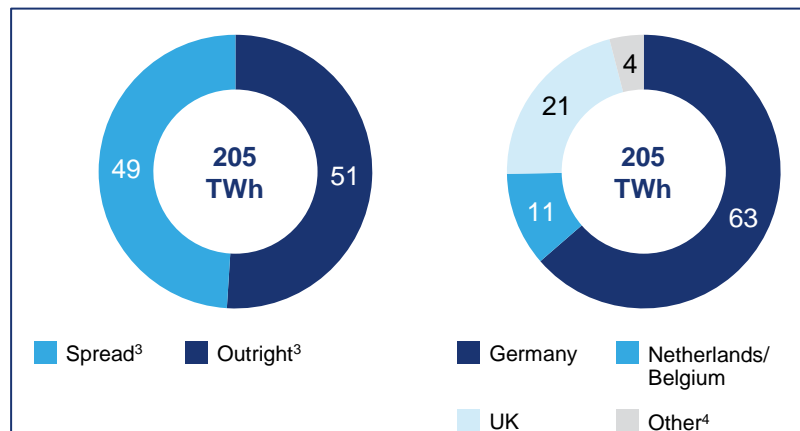
# Leading and diversified provider of reliable energy

## Core generation markets<sup>1</sup> (%)



■ Lignite    ■ Hard coal    ■ Nuclear    ■ Gas  
■ Hydro    ■ Biomass    ■ Other

## Production volumes<sup>2</sup> (%)



- ✓ Highly relevant position in all core markets

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- ✓ Efficient and flexible portfolio across technologies

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- ✓ Sophisticated commercial management of operations

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- ✓ Well positioned to provide security of supply

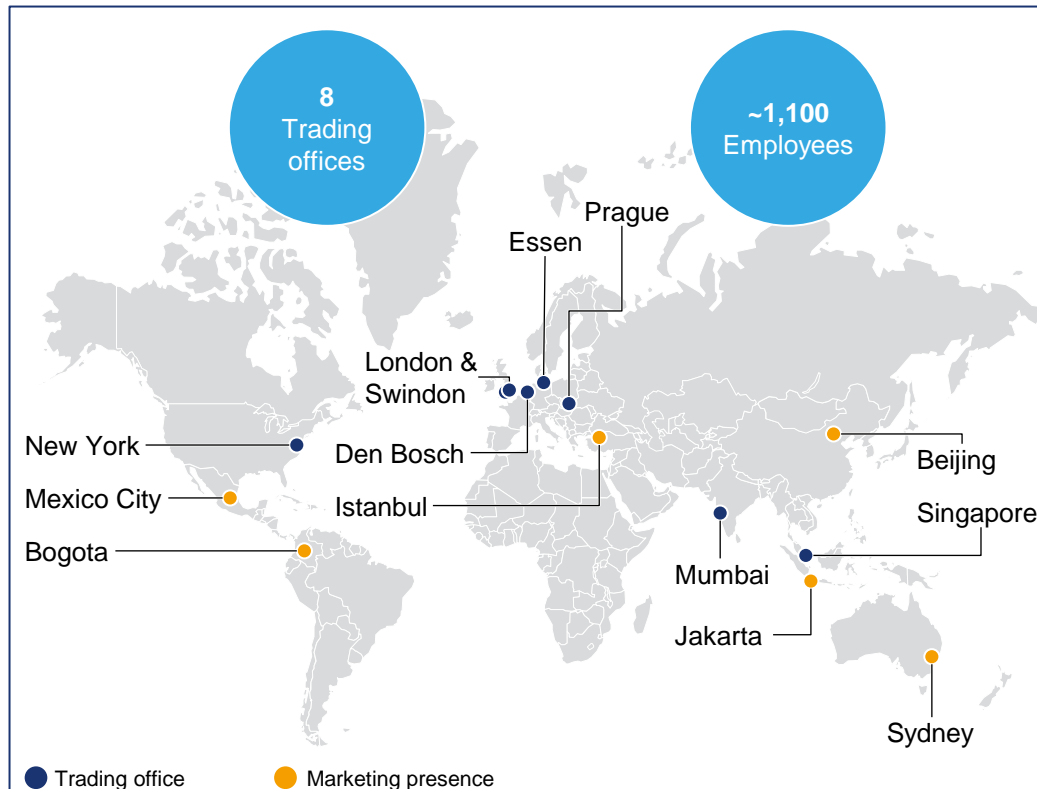
<sup>1</sup> 2016 net capacity. Excluding Máttra in Hungary (0.8 GW) and Denizli in Turkey (0.8 GW) | <sup>2</sup> 2016 production volumes (including Máttra and Denizli)

<sup>3</sup> Spread: Hard coal, gas, hydro, biomass. Outright: Lignite, nuclear | <sup>4</sup> Including Máttra and Denizli



# Attractive value contribution from Supply & Trading

## Global footprint



## Strong track record

**~50%**  
Return on risk capital employed<sup>1</sup>

Average of last 5 years

**~€400 m**  
Risk capital employed<sup>2</sup>

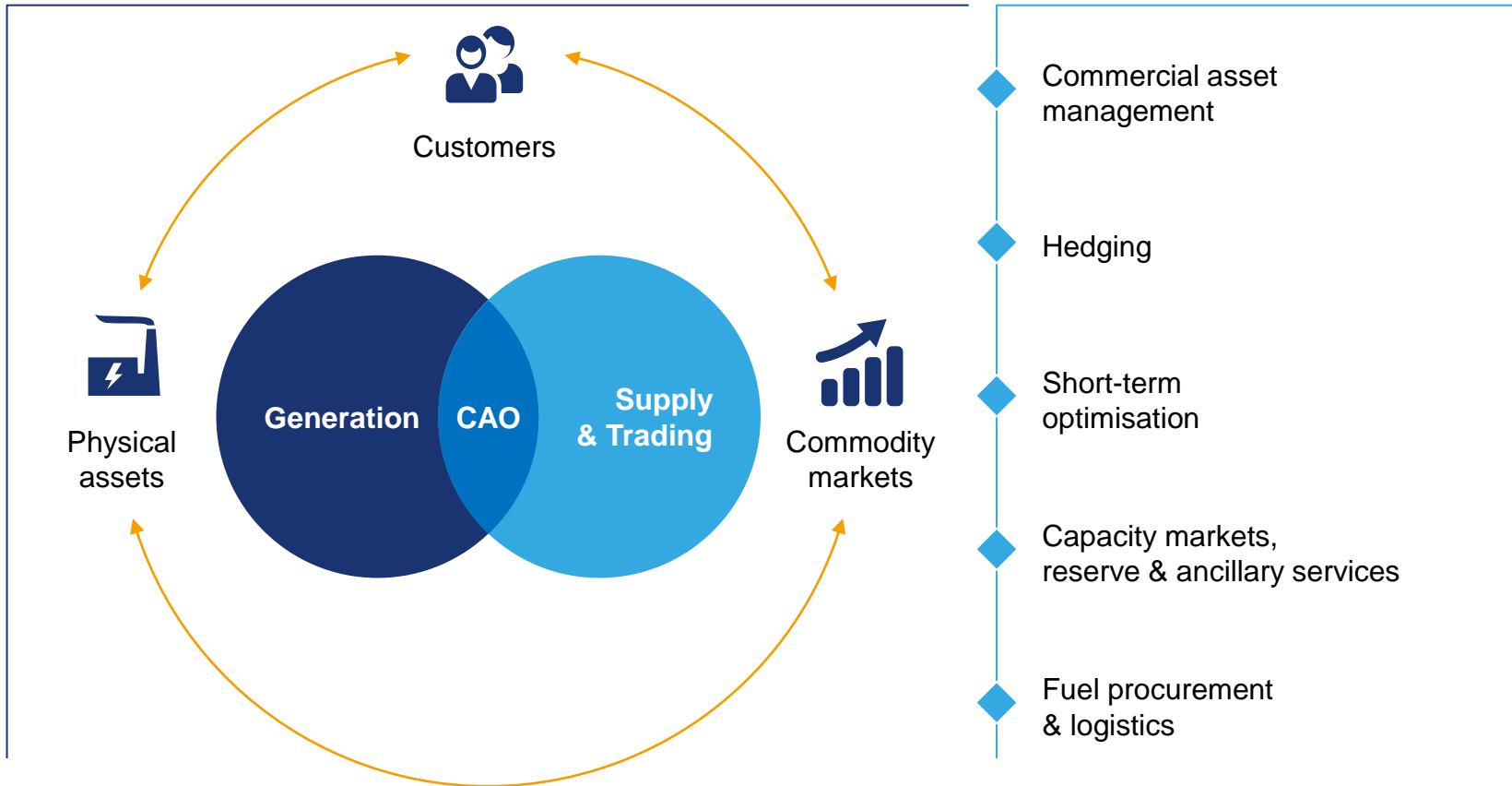
- ✓ Significant cash flow contribution to Group
- ✓ Track record of long-term value creation
- ✓ Successful restructuring of gas legacy business

<sup>1</sup> Adjusted EBITDA (excluding non-recurring items) / risk capital employed | <sup>2</sup> Includes risk capital for Trading and Origination, invested capital for Principal Investments, Gas & LNG and Commodity Solutions

# Integrated platform extracts maximum value from assets

## Business interaction

## Commercial Asset Optimisation



# Strategy designed to benefit from market requirements

## Traditional energy markets



- > Established merit order
- > Focus on volume and fuel efficiency
- > CO<sub>2</sub> reduction via conventional new-build



## Renewables expansion



- > Decreasing conventional volumes
- > Intermittent production
- > Reduction of firm capacity



## Future energy markets



- > Increasing use of electricity
- > Emerging technologies
- > Remuneration of firm capacity

## Strategic approach

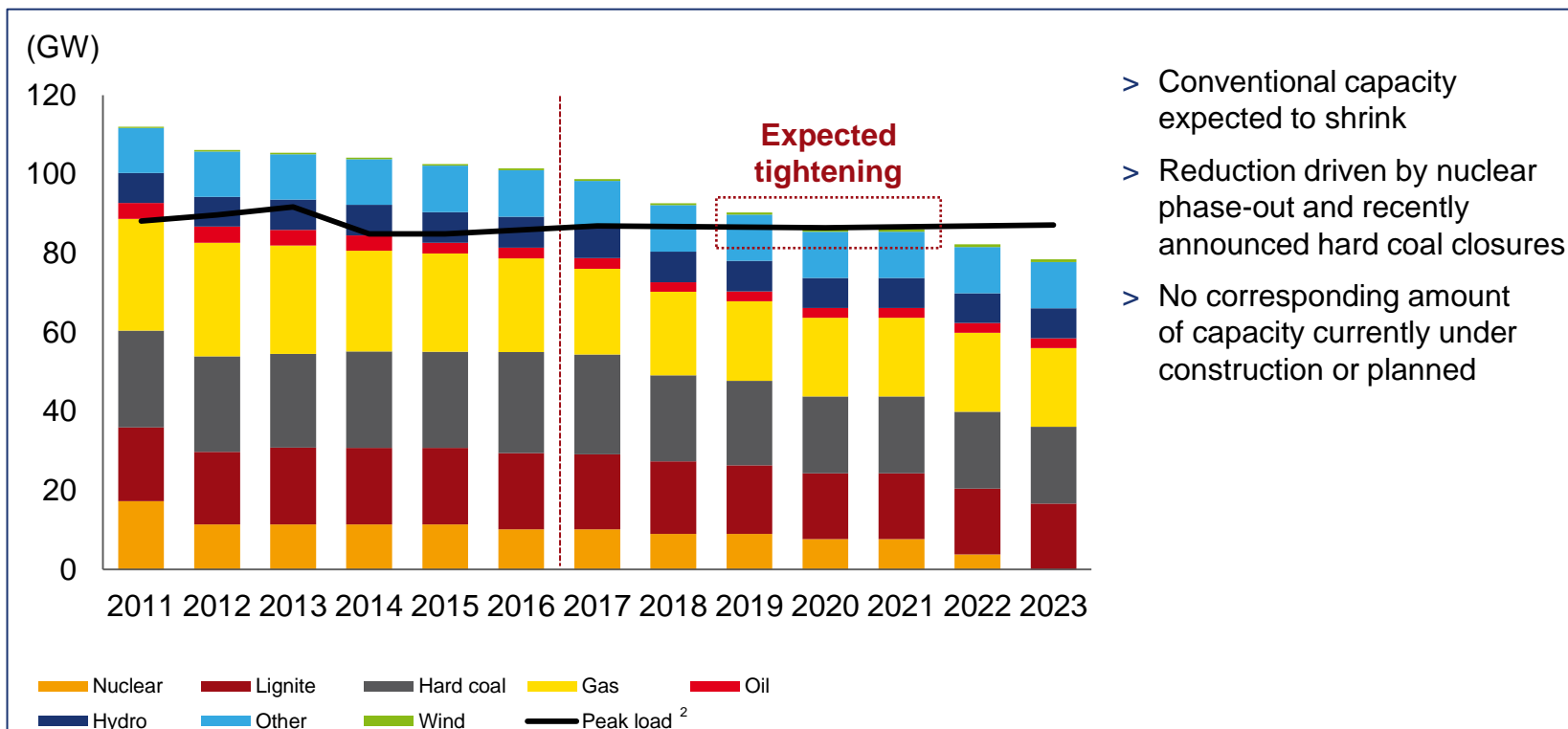
Optimise existing operations

Enhance portfolio

Tap into evolving opportunities

# Expected tightening due to decline of firm capacity

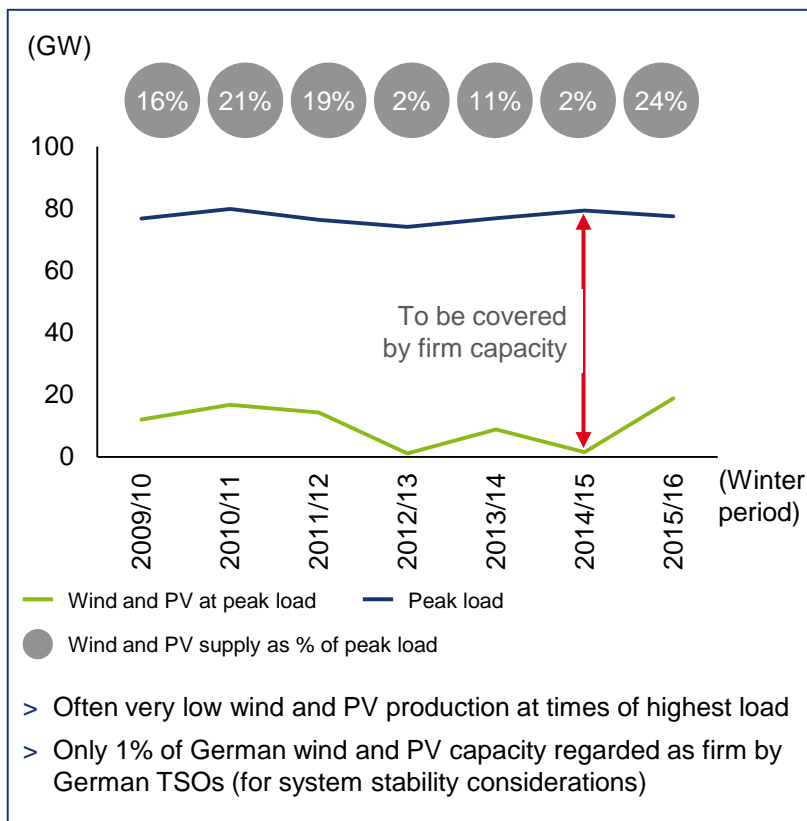
Demand-supply balance at peak load in Germany<sup>1</sup>



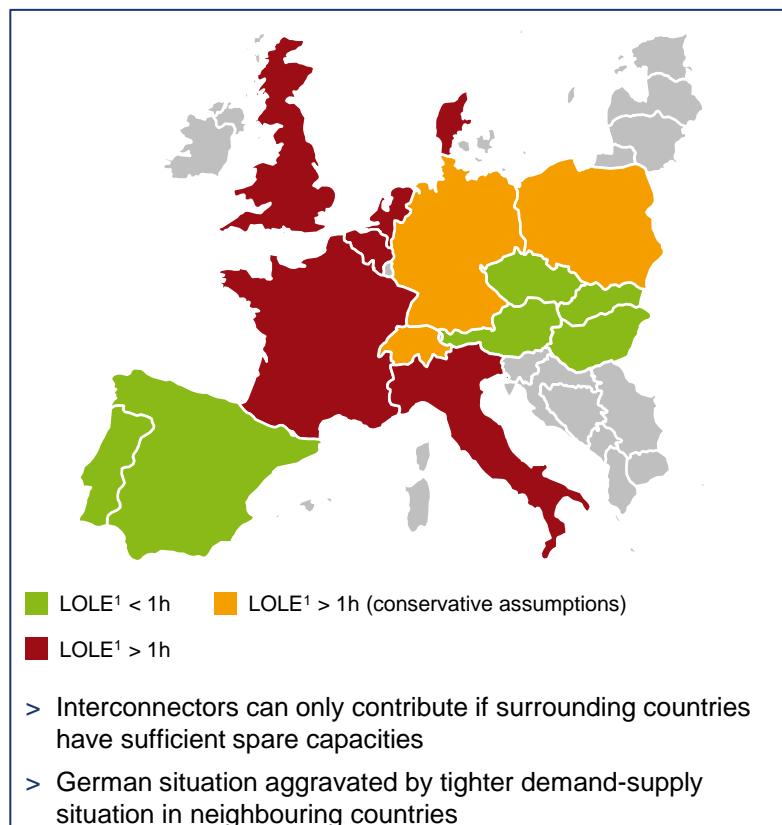
<sup>1</sup> Calculated without reserve, mothballed power plants and interconnectors. Derating factors as of 'Leistungsbilanzbericht 2014' of German TSOs, including 1% and 0% availability for wind and solar respectively | <sup>2</sup> Peak load calculated from ENTSO-E hourly load, scaled up to total German demand  
 Source: BNetzA power plant list, BNetzA list of plant additions and shut-downs, KWSAL, own calculations

# Increasing reliance on intermittent renewables and interconnectors risks security of supply

## German renewables production (at peak load)



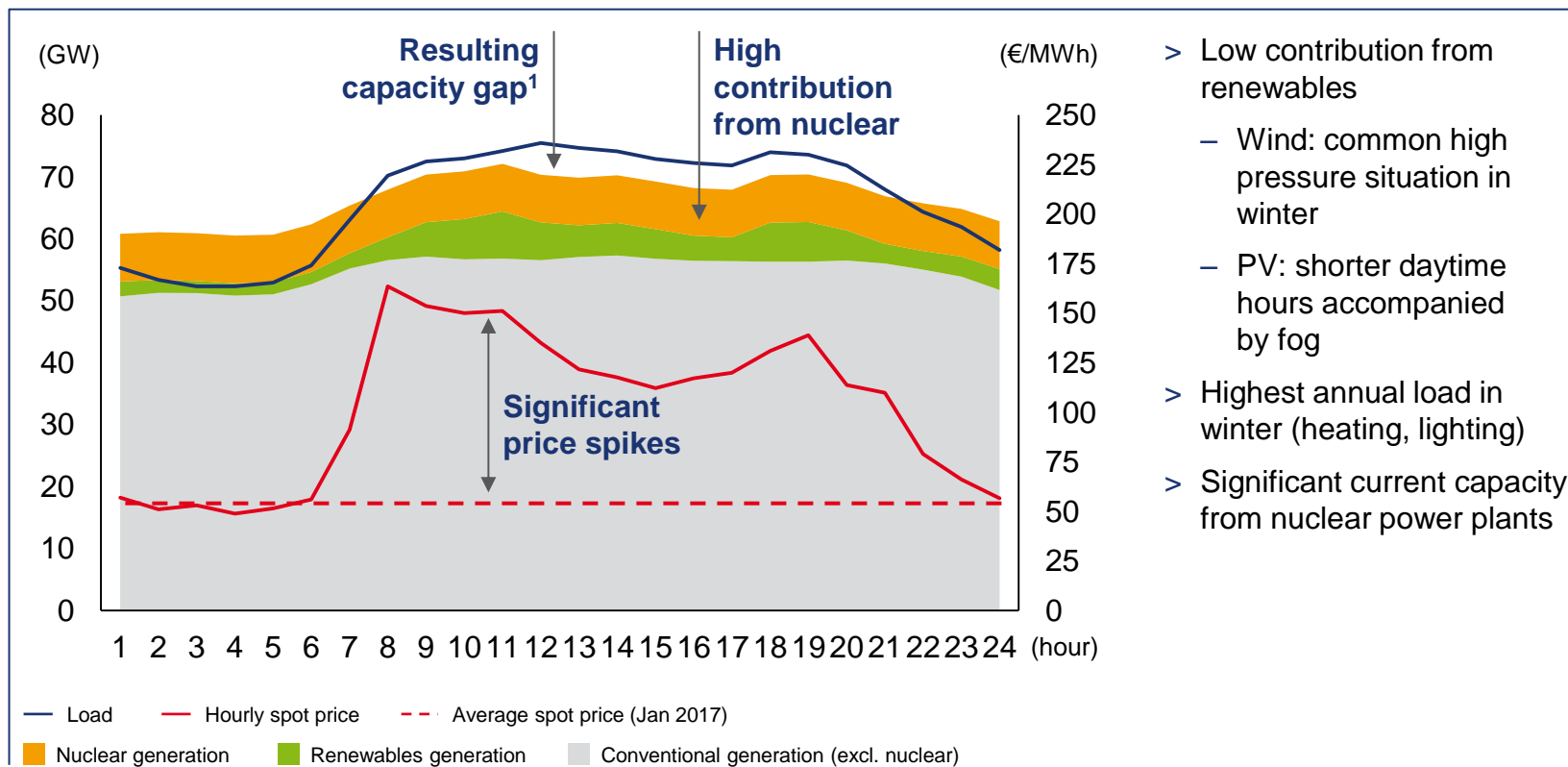
## Loss of load expectation<sup>1</sup> in Europe 2025



<sup>1</sup> Loss of Load Expectation: Expected number of hours where load cannot be supplied by local resources and imports | Source: Entso-E Mid term adequacy forecast 2016

# Capacity tightness already seen in certain situations

German generation capacity on 24 January 2017



- > Low contribution from renewables
  - Wind: common high pressure situation in winter
  - PV: shorter daytime hours accompanied by fog
- > Highest annual load in winter (heating, lighting)
- > Significant current capacity from nuclear power plants

Note: Renewables includes hydro, wind and PV; other generation includes nuclear, lignite, hard coal, gas, biomass and other | <sup>1</sup> Imports and unreported generation | Source: Entso-E Transparency Platform

# Strategic focus on evolution of existing business portfolio

## Optimise existing operations

Lignite & Nuclear/  
European Power

- > Manage cost base
- > Apply capital allocation discipline
- > Actively manage portfolio

Supply & Trading

- > Restore profitability

## Enhance portfolio

European Power

- > Develop portfolio for future market requirements
- > Participate in opportunistic asset consolidation (core markets)

Supply & Trading

- > Expand organically

## Tap into evolving opportunities

- > Explore technologies suitable to provide security of supply
- > Invest selectively into new technologies (e.g. batteries)

# Well positioned to optimise cash flows from operations

## RWE's competitive success factors

Asset base and sites	Operational and commercial excellence	Technological expertise and know-how
<ul style="list-style-type: none"><li>&gt; Modern and restructured asset base</li><li>&gt; Established infrastructure at attractive locations</li><li>&gt; Highly skilled workforce</li></ul>	<ul style="list-style-type: none"><li>&gt; Efficient and flexible operations</li><li>&gt; Strong track record of cost reductions</li><li>&gt; Proven commercial optimisation</li></ul>	<ul style="list-style-type: none"><li>&gt; Existing portfolio across all reliable technologies</li><li>&gt; Proven system capabilities</li><li>&gt; Excellent market knowledge</li></ul>



Management of complex technological and commercial interdependencies



Assessment of market developments and active stakeholder management



Creation of optionality with respect to commercialisation of emerging technologies



# Asset base set up to benefit from market opportunities

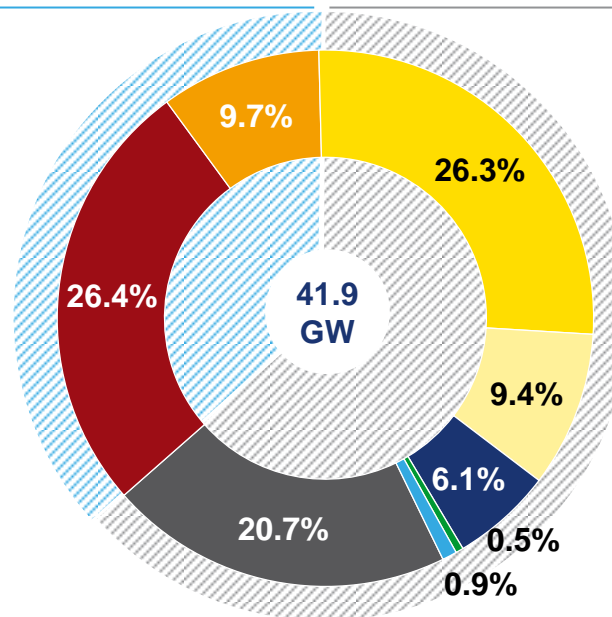
## Balanced capacity split

### Lignite & Nuclear

- > Fixed fuel price generation portfolio
- > Focus on cost efficiencies
- > Significant power price exposure

### European Power

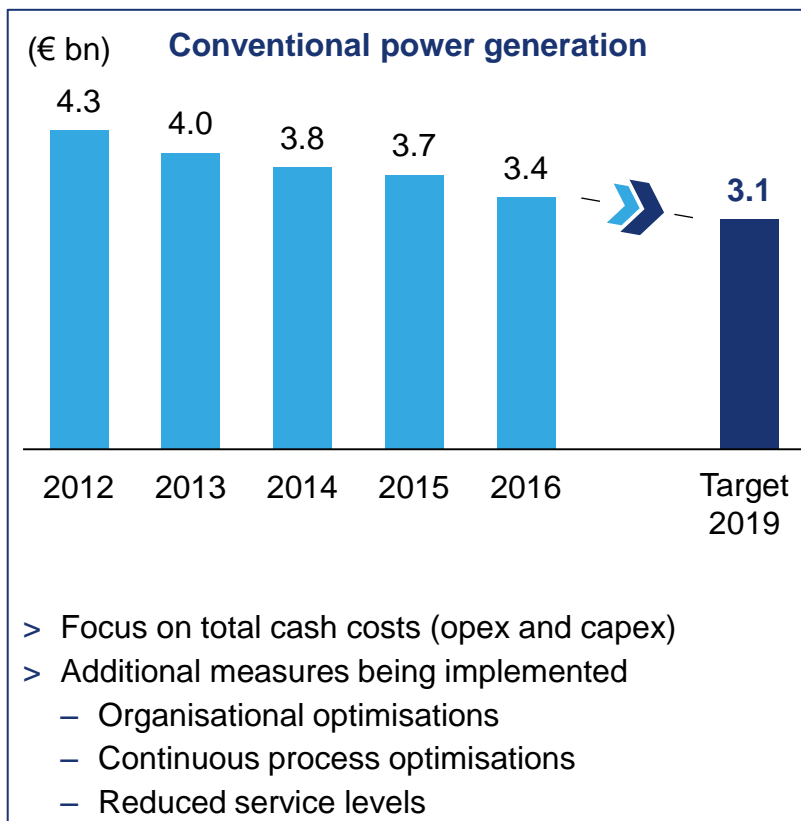
- > Highly flexible generation portfolio
- > Largely variable cost base
- > Structural market upside



■ Lignite ■ Nuclear ■ Gas ■ Gas mothballed ■ Hydro ■ Biomass ■ Other ■ Hard coal

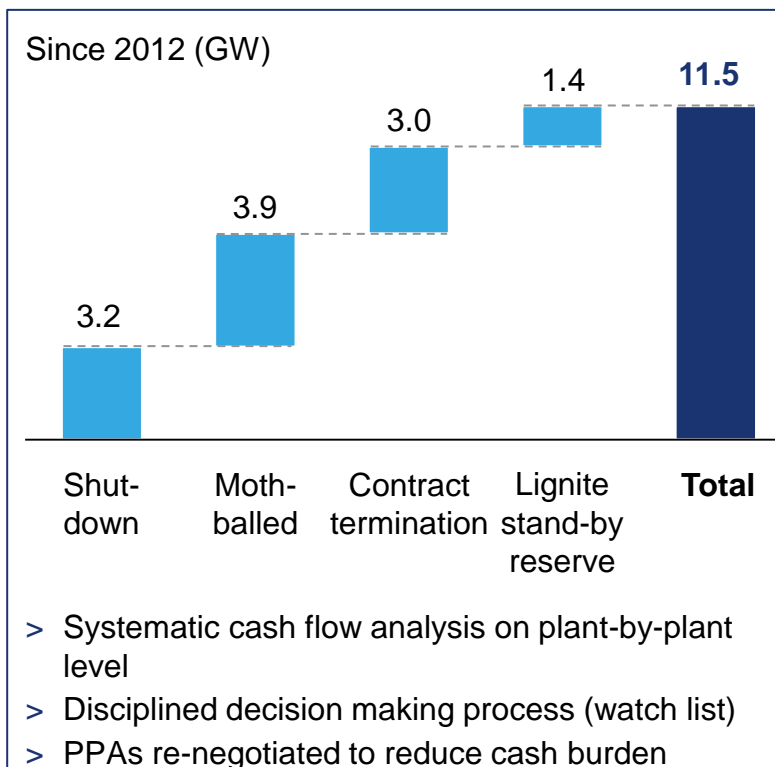
# Ongoing cost reduction and active portfolio measures

## Operational cash cost development<sup>1</sup>



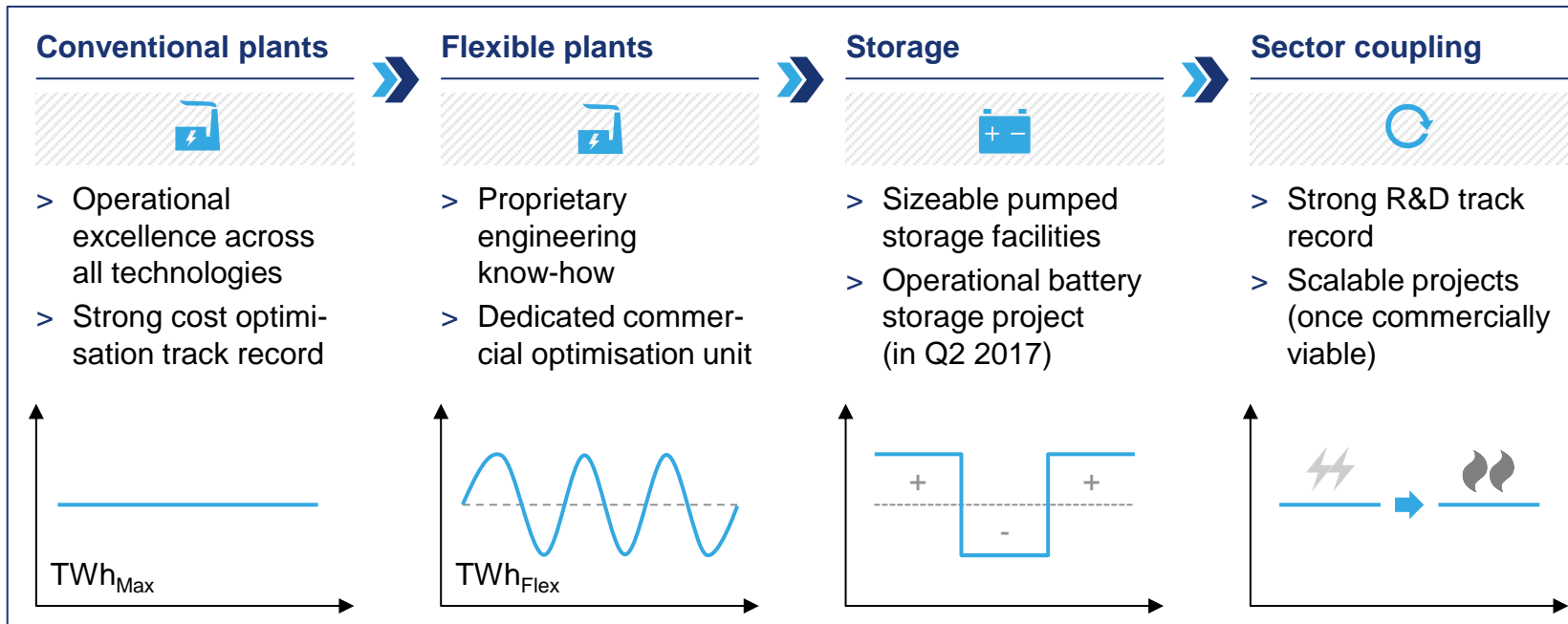
<sup>1</sup> Opex and capex excluding large projects

## Active portfolio measures



# Powering. Reliable. Future.

## Evolution of technologies for firm capacity



- > Growing reliance on electricity increases need for firm capacity
- > Broader framework decisions drive implementation rate of technologies
- > Comprehensive system integration and commercial optimisation skills essential for operations

# Cash flow-focused and value-maximising strategy



Leading provider of firm capacity in core markets



Continued efficiency improvements and active management of assets



Well positioned to benefit from tightening markets



Attractive returns and organic growth options in Supply & Trading



Value-maximising management of innogy stake

# Financial highlights

Long-term value creation through strict focus on cash flows and active portfolio management

Markus Krebber  
Chief Financial Officer  
RWE AG

# Clear financial management principles



Strict focus on cash flows and transparent financial disclosure



Disciplined capital allocation and active portfolio management



Sustainable dividend policy with upside potential

# RWE stand-alone figures relevant for cash and value management



## Key financials 2016

Adj. EBITDA	€5.4 bn
Net debt	€22.7 bn

Adj. EBITDA	€1.9 bn
Net debt	€6.9 bn
innogy stake <sup>1</sup>	€14.1 bn

Previously reported as Conventional Power Generation

<sup>1</sup> As of 31 December 2016

# Improved transparency from new business segments

## Operating business

Lignite & Nuclear	European Power	Supply & Trading
<ul style="list-style-type: none"> <li>&gt; Lignite operations in Germany</li> <li>&gt; Nuclear power plants in Germany</li> <li>&gt; Holdings in Hungarian Mátra (lignite) and Dutch EPZ (nuclear)</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Hard coal, gas, hydro and biomass power plants</li> <li>&gt; Main operations in Germany, UK and the Netherlands</li> <li>&gt; Power purchase agreements</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Trading/origination</li> <li>&gt; Principal Investments</li> <li>&gt; Gas &amp; LNG</li> <li>&gt; Commodity solutions</li> </ul>

## Financial portfolio

innogy/Provisions
<ul style="list-style-type: none"> <li>&gt; Asset dedicated to cover provisions</li> </ul>

## Key financials 2016 (€m)<sup>1</sup>

Adj. EBITDA	1,087	Adj. EBITDA	370	Adj. EBITDA	-139	innogy dividend <sup>2</sup>	730
Capex	267	Capex	66	Capex	4	Changes in provisions <sup>3</sup>	656

<sup>1</sup> Excluding Other/Consolidation (-€119 m) | <sup>2</sup> Appropriation of profits of innogy subsidiaries still directly held by RWE before IPO. Dividend of ~€680 m for FY 2016 payable in 2017 | <sup>3</sup> Includes utilisation, additions to and release of provisions



# Lignite & Nuclear – Driven by power price developments

## Key financials

€ m	2014PF	2015PF	2016PF
<b>Adj. EBITDA<sup>1</sup></b>	<b>2,105</b>	<b>1,261</b>	<b>1,087</b>
t/o non-recurring items <sup>2</sup>	361	-55	137
Depreciation	485	551	415
<b>Adj. EBIT<sup>1</sup></b>	<b>1,619</b>	<b>710</b>	<b>672</b>
t/o non-recurring items <sup>2</sup>	361	-55	137
<b>Capex</b>	<b>301</b>	<b>319</b>	<b>267</b>
<b>Cash contribution<sup>3</sup></b>	<b>1,804</b>	<b>942</b>	<b>820</b>

## Historical financials

- > Lower realised power prices (2014: €48/MWh, 2015: €41/MWh, 2016: €35/MWh)
- > €0.5 bn improvement in operational cash costs since 2012
- > Non-recurring items mainly driven by changes in nuclear, mining and restructuring provisions
- > Day-to-day capex for mining operations and maintenance of generation assets

## Outlook 2017: significantly below previous year

- ⊖ Lower realised generation margins (hedged outright price: ~€31/MWh)
- ⊖ Absence of non-recurring items (€0.15 bn)
- ⊕ Absence of nuclear fuel tax (€0.15 bn)
- ⊕ Further efficiency improvements

<sup>1</sup> Including operating income from investments; excluding non-operating result | <sup>2</sup> Non-recurring items (not included in non-operating result) | <sup>3</sup> Adj. EBITDA minus capex (before changes in provisions)

# European Power – Benefitting from improving UK spreads

## Key financials

€ m	2014PF	2015PF	2016PF
UK	90	190	270
Continental Europe	327	834	100
<b>Adj. EBITDA<sup>1</sup></b>	<b>417</b>	<b>1,024</b>	<b>370</b>
t/o non-recurring items <sup>2</sup>	-	565	24
Depreciation	1,058	1,138	414
<b>Adj. EBIT<sup>1</sup></b>	<b>-640</b>	<b>-114</b>	<b>-45</b>
t/o non-recurring items <sup>2</sup>	-638	-89	24
<b>Capex</b>	<b>785</b>	<b>536</b>	<b>66</b>
<b>Cash contribution<sup>3</sup></b>	<b>-368</b>	<b>488</b>	<b>304</b>

## Historical financials

- > UK: improving spreads and income from short-term optimisation
- > Continental Europe: declining spreads and lower income from balancing and reserve services
- > €0.5 bn improvement in operational cash costs since 2012
- > Non-recurring items dominated by termination of power plant project in Hamm (compensation payments and write down of plant)
- > Decline in capex driven by finalisation of new-build projects

## Outlook 2017: significantly below previous year

- ⊖ Lower realised spreads
- ⊕ Further efficiency improvements

<sup>1</sup> Including operating income from investments; excluding non-operating result | <sup>2</sup> Non-recurring items (not included in non-operating result) | <sup>3</sup> Adj. EBITDA minus capex (before changes in provisions)

# Supply & Trading – Impacted by commodity market developments

## Key financials

€ m	2014PF	2015PF	2016PF
<b>Adj. EBITDA<sup>1</sup></b>	<b>286</b>	<b>164</b>	<b>-139</b>
t/o non-recurring items <sup>2</sup>	-60	-105	6
Depreciation	12	8	6
<b>Adj. EBIT<sup>1</sup></b>	<b>274</b>	<b>156</b>	<b>-145</b>
t/o non-recurring items <sup>2</sup>	-60	-105	6
<b>Capex</b>	<b>11</b>	<b>10</b>	<b>4</b>
<b>Cash contribution<sup>3</sup></b>	<b>275</b>	<b>154</b>	<b>-143</b>

## Historical financials

- > Negative EBITDA in 2016 primarily driven by trading losses in Q2
- > Non-recurring items predominantly consisting of legacy contracts in gas midstream business

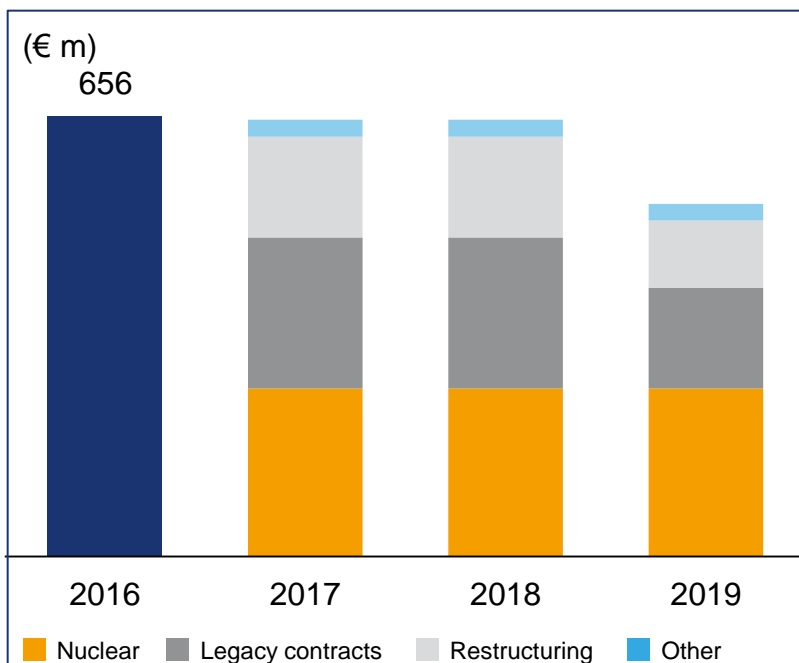
## Outlook 2017: significantly above previous year

- ⊕ Normalisation of trading performance

<sup>1</sup> Including operating income from investments; excluding non-operating result | <sup>2</sup> Non-recurring items (not included in non-operating result) | <sup>3</sup> Adj. EBITDA minus capex (before changes in provisions)

# Reduction of changes in provisions expected by 2019

## Outlook for changes in provisions<sup>1</sup>



- > Relatively stable utilisation of provisions expected in 2017 and 2018, with reduction in 2019
- > innogy dividends (2017: ~€680 m) expected to cover changes in provisions

### Nuclear

- > Stable use of provisions over next 3 to 4 years
- > Peak expected after shut-down of last nuclear power plant in 2022

### Legacy contracts

- > Loss-making power purchase contracts and gas midstream contracts
- > Reduction of gas midstream related provisions by 2019

### Restructuring

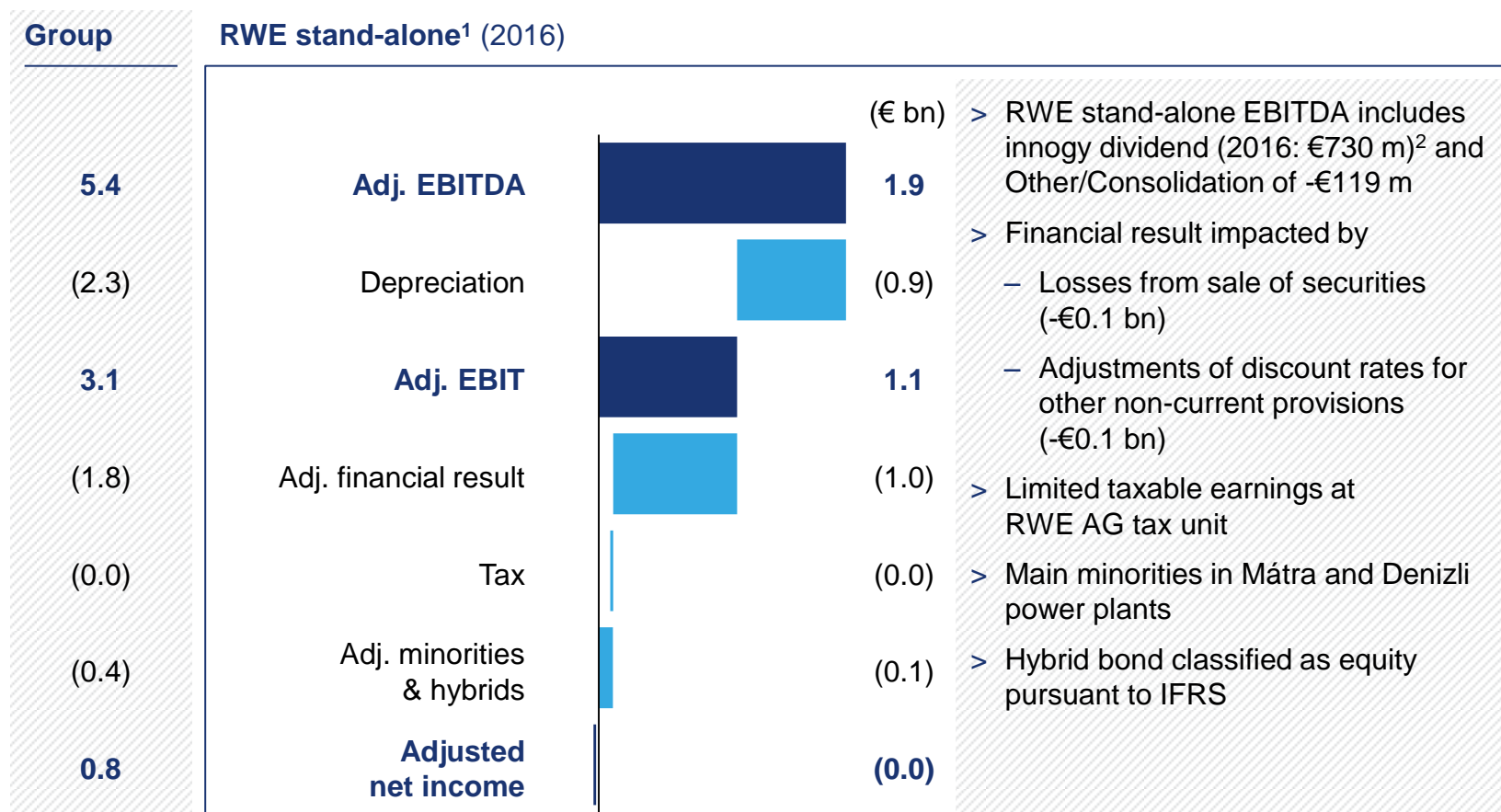
- > Mainly personnel related restructuring costs, e.g. redundancies and early retirement schemes
- > Expected to be mostly used in the years 2017 to 2025 with lower utilisation from 2019 onwards

### Other provisions

- > Includes, e.g. mining and pension provisions
- > Mostly offset with additions to provisions and other non-cash items

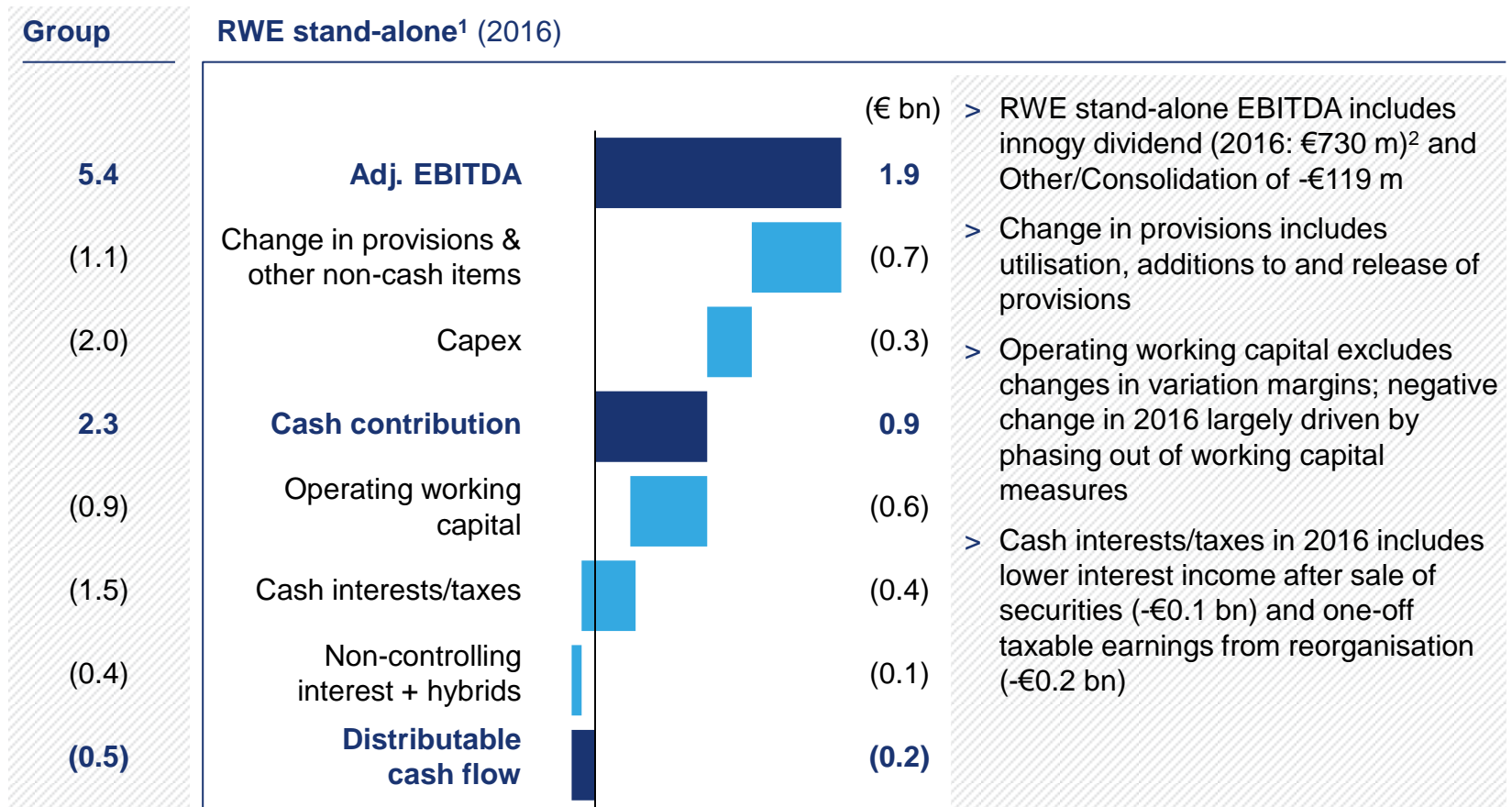
<sup>1</sup> Includes utilisation, additions to and release of provisions

# Income statement 2016 still impacted by higher depreciation and financial result



<sup>1</sup> Pro-forma financial | <sup>2</sup> Appropriation of profits of innogy subsidiaries still directly held by RWE before IPO

# 2016 distributable cash flow affected by phasing out of working capital measures and higher cash interests/taxes



<sup>1</sup> Pro-forma financial | <sup>2</sup> Appropriation of profits of innogy subsidiaries still directly held by RWE before IPO

# Solid capital structure with increased financial flexibility

## RWE stand-alone net debt (as of 31 December 2016)

(€ bn)

<b>Financial assets and receivables</b>	<b>16.1</b>
> Financial receivables against innogy	4.3
> Financial assets	11.8
<b>Financial liabilities</b>	<b>12.0</b>
> Bonds and bank debt	4.9
> Other financial liabilities	1.2
> Hybrid adjustments	(1.1)
> Nuclear energy fund (consolidated stake) <sup>1</sup>	7.0
<b>Net financial assets</b>	<b>4.1</b>
<b>Long-term liabilities</b>	<b>11.0</b>
> Nuclear provisions <sup>2</sup>	5.7
> Mining provisions	2.4
> Pension provisions	2.9
<b>Total net debt</b>	<b>6.9</b>

### Limited relevance of traditional leverage ratios

- > Net financial asset position
- > Long term provisions well covered by innogy stake
- > Financial position commensurate with investment grade rating

### Necessity for tailor-made approach to financing / leverage / rating

- > Intensive dialogue with rating agencies regarding new financial situation of RWE
- > Definition of minimum requirements for coverage of provisions by fungible assets
- > Financing need for operational liquidity management

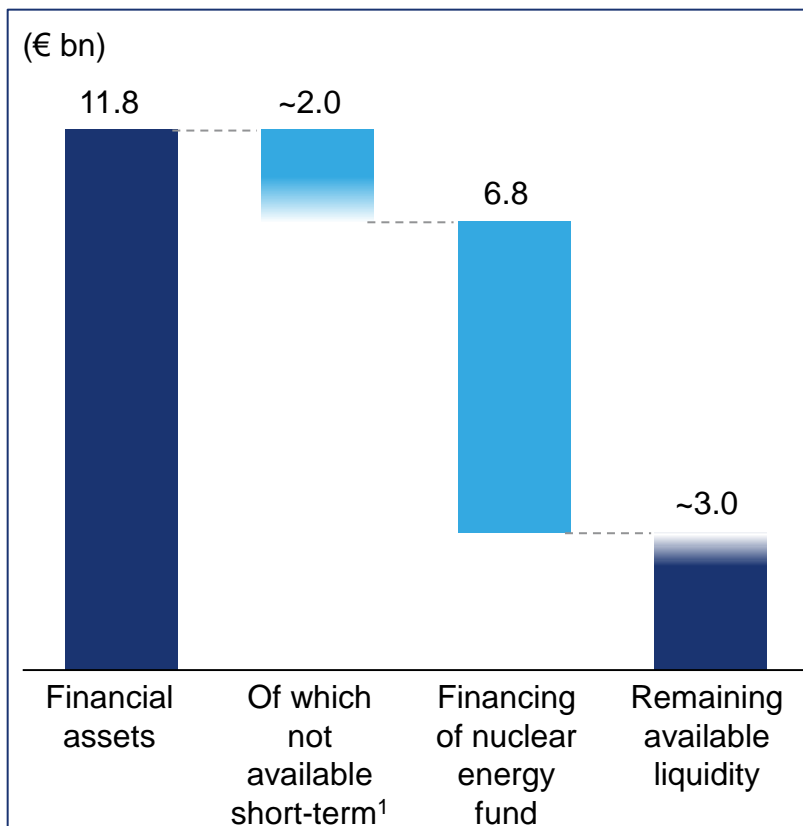
### Optimisation of capital structure and financing

- > 50% reduction of hybrids envisaged; no replacement of 2017 call date hybrids
- > Switch to revolving working capital line

<sup>1</sup> Includes base amount and risk premium; RWE's economic stake: €6.8 bn | <sup>2</sup> Excludes nuclear energy fund base amount and risk premium

# Funding strategy reflects strong liquidity position

## RWE stand-alone liquidity position (as of 31 December 2016)



- > Solid liquidity position to cover short-term financial and operational business requirements
- > Nuclear energy fund contribution (including risk premium) to be paid in full on 1 July 2017
- > Financing strategy for operating business to be adapted to operational liquidity management
  - Commercial paper programme available
  - Revolving credit facilities and guarantee lines as additional funding sources

<sup>1</sup> E.g. collaterals and securities of the non-current assets



# RWE stand alone – Outlook 2017

2016		2017	
€1.9 bn	Adjusted EBITDA	€1.6 bn – €1.9 bn	
-€0.9 bn	Depreciation	↘	> Reduction by ~€0.3 bn from impairments
-€1.0 bn	Net financial result	↘	> Reduction in interest accretion to provision (€0.4 – 0.5 bn) > Absence of losses from sale of securities and impact from lower discount rates on non-current provisions (€0.2 bn)
€0.0 bn	Taxes	→	> 95% tax exemption for innogy dividend > Potential utilisation of tax assets in German tax unit
-€0.1 bn	Minorities & hybrids	→	> Stable development expected
-€0.0 bn	Adjusted Net Income	€0.7 bn – €1.0 bn	

# Strict focus on disciplined capital allocation

## Elements of capital allocation

### Operating business

#### Lignite & Nuclear

- > Cash-optimised maintenance capex

#### European Power

- > Optimisation/upgrade capex

#### Supply & Trading

- > Rotating capital (Principal Investments)  
with target equity IRRs of 15% – 20%

### Portfolio management

#### Minimum financial portfolio requirement

- > Minimum coverage of provision utilisation by innogy/fungible asset
- > Target coverage: 100% of next 5 years / 75% of next 10 years

#### Investment criteria

- > Focus on core markets, synergies and portfolio diversification
- > IRR > WACC<sup>1</sup>
- > Cash flow/EPS accretive

<sup>1</sup> IRR > risk adjusted hurdle rate (after-tax WACC and project/country risk adjustments)

# Sustainable dividend with upside potential

## Elements of dividend policy

- > Target dividend driven by distributable cash flows of RWE stand-alone
- > Objective of sustainable dividend payout
  - Potential to anticipate known power price developments
  - Potential to smooth short-term volatility of trading business

**€0.50 per share for fiscal year 2017<sup>1</sup>**

**Target to at least maintain dividend level in subsequent years**

- > Potential upsides
  - Commodity price developments/outright power price recovery
  - Tightness of markets (spread recovery/capacity remuneration)
  - Value upside from portfolio management

**Management incentive scheme aligned with focus on total shareholder return**

<sup>1</sup> Envisaged by management board

# Financial highlights – key messages



Full transparency on operating business and financial portfolio



Operating business managed for cash and positioned for market recovery



Solid capital structure and financial flexibility



Strong financial discipline and sustainable dividend with upside potential

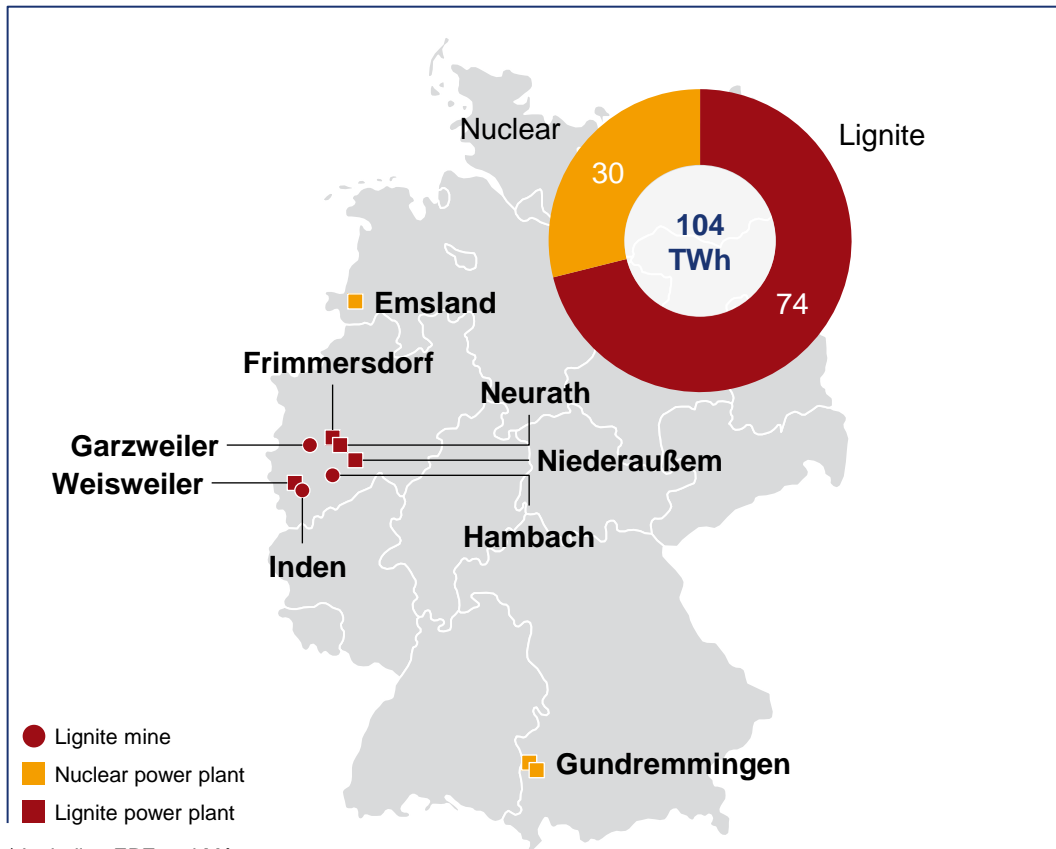
# Lignite & Nuclear

Rigorously managed asset base with significant outright exposure

Frank Weigand  
Chief Financial Officer  
RWE Generation

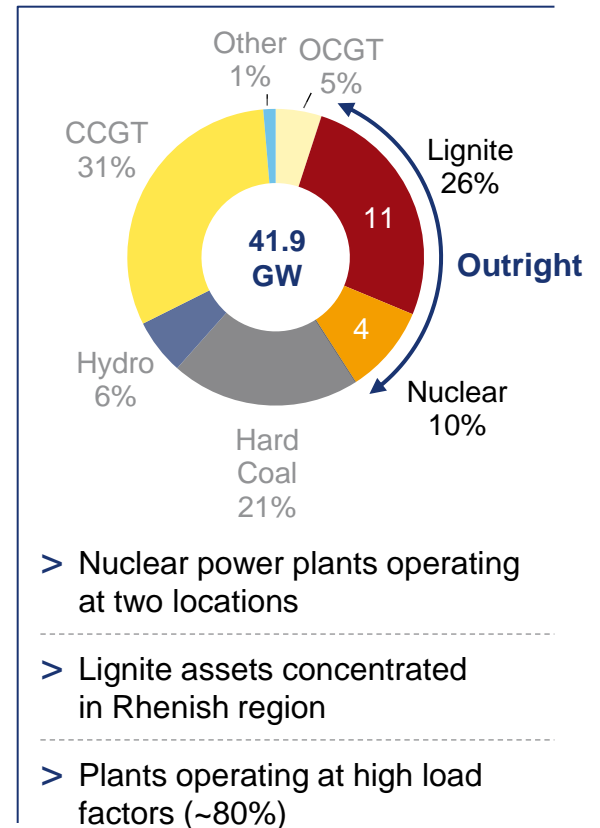
# Strong outright position

Main operational sites in Germany and production volumes<sup>1</sup> (2016)



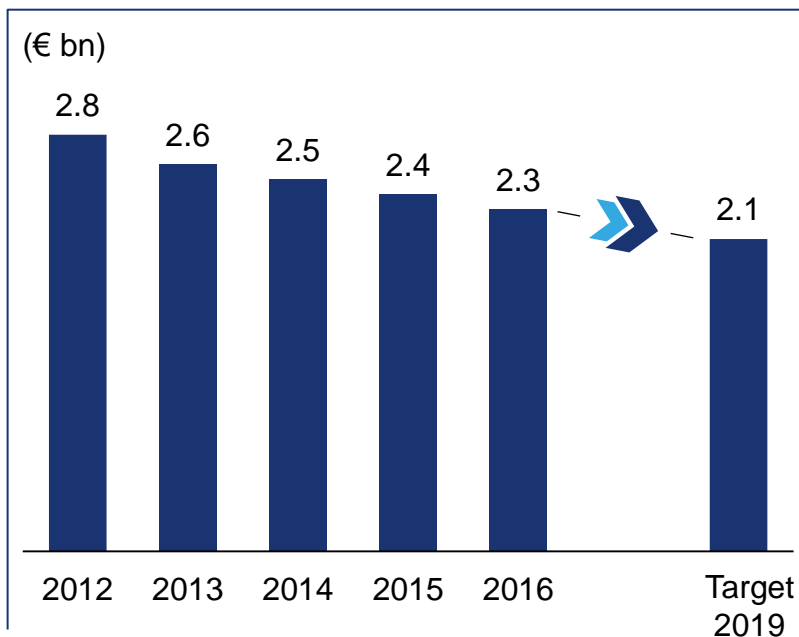
<sup>1</sup> Including EPZ and Mátra

Generation capacity<sup>1</sup> (2016)

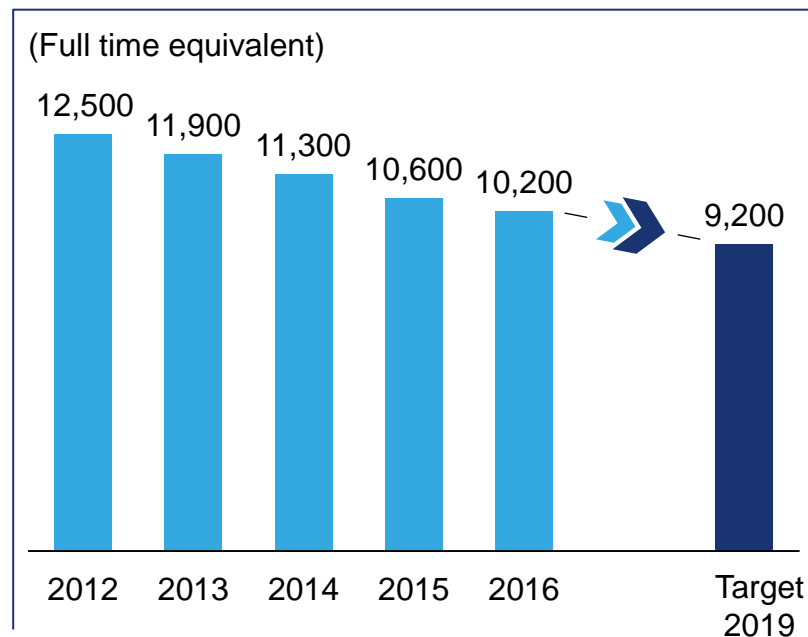


# Track record of significant cost reductions in Lignite & Nuclear

## Operational cash cost development<sup>1</sup>



## Employee/headcount development



- > Total cash cost reduction of ~€0.5 bn since 2012
- > Additional cost improvements of ~€0.2 bn targeted until 2019

<sup>1</sup> Opex and capex excluding large projects; excluding EPZ and Mátra

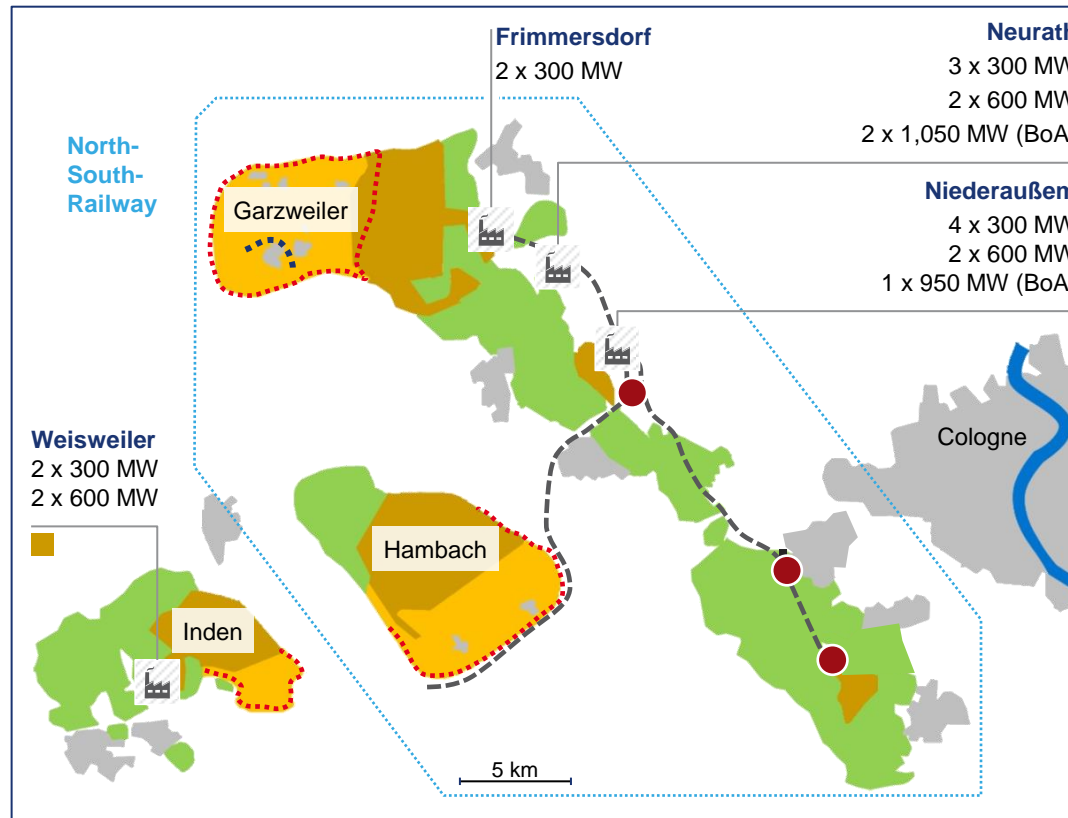
# Lignite

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# Integrated system including mining, refining and power plants

## Major sites in Germany (2016)



## Integrated system

- > 3 lignite open cast mines
- > ~10 GW installed power generation capacity in Germany, ~1 GW in Mátra, Hungary
- > 3 refining sites
- > Compact mining area with optimised own infrastructure

■ Mine premises   
 ■ Approved open cast mining area   
 ■ Restored mine premises  
● Lignite refining   
  Populated area   
 Power plants   
 - - - Own railway   
 - - - Reduction according to 'Leitentscheidung'

# Regulatory framework clarified by state ruling providing planning security for mining

## Clear regulatory framework

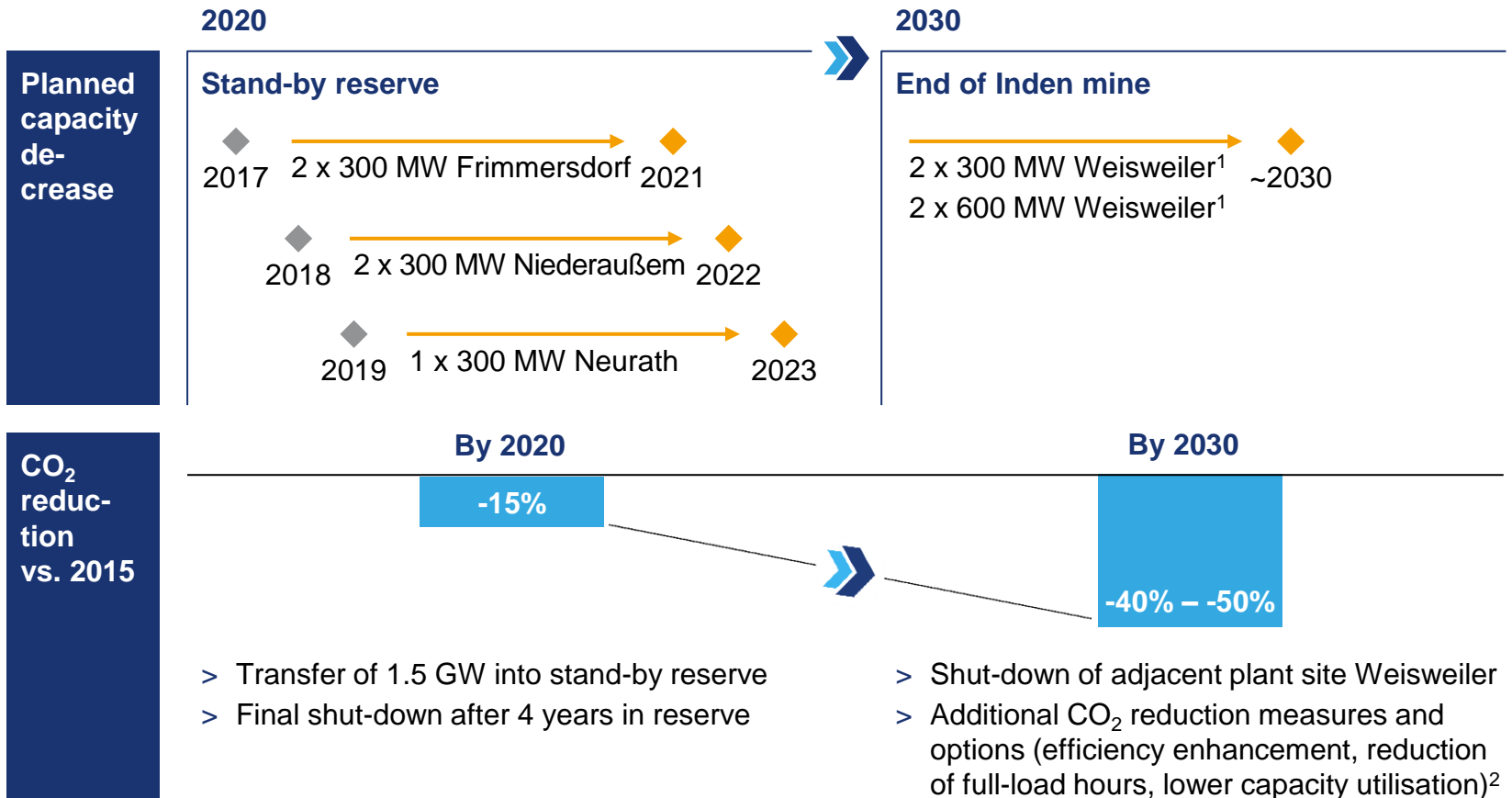
- > State ruling on Rhenish lignite mining<sup>1</sup>
  - Confirmation of lignite mining necessity to ensure electricity supply
  - Accounts for lower expected power generation from lignite
  - Equivalent reduction of Garzweiler mining area
- > Stable planning environment for mining operations

## Sufficient reserves until mid-century<sup>2</sup>

Open cast mines	Extraction <sup>3</sup> (Mt/a)	Reserves (bn t)	Estimated end date
Hambach	~ 35 – 40	1.3	Mid-century
Garzweiler	~ 35 – 40	0.8	Mid-century
Inden	~ 15 – 20	0.3	~2030
<b>Total</b>	<b>~ 90 – 95</b>	<b>2.4</b>	

<sup>1</sup> 'Leitentscheidung' adopted by State of North Rhine-Westphalia (NRW) | <sup>2</sup> As of 2016; excluding Mátra, Hungary | <sup>3</sup> Extractions shrinking until mid-century

# Significant CO<sub>2</sub> reduction in line with broader European and national roadmap

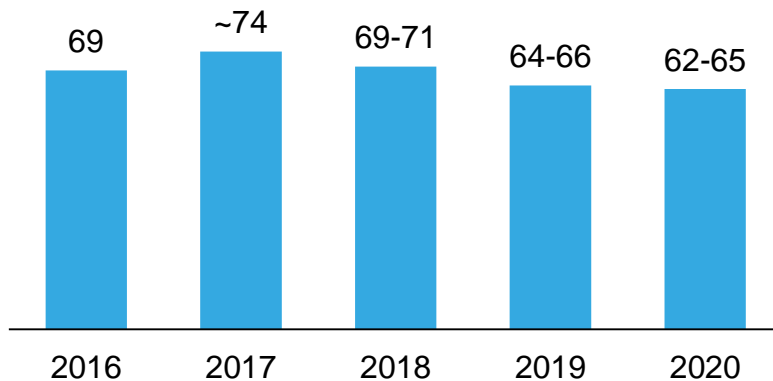


<sup>1</sup> When Inden mine's supply comes to an end | <sup>2</sup> Depending on expansion of renewable energy sources

# Further cost reductions to maintain positive cash contribution from operations

## Generation output in Germany (TWh)<sup>1</sup>

### Transfer of 5 blocks to stand-by reserve



## Cash contribution<sup>2</sup>

### > Rule-of-thumb:

Breakeven at power prices minus CO<sub>2</sub> costs of ~€22/MWh including additional planned efficiency measures

### > Example:

Base load price of €28/MWh and CO<sub>2</sub> price of €6/MWh (equivalent to ~€5.5/t at an emissions factor of 1.1)

## Efficiency measures

- > Reduction of non-safety relevant technical standards in overhauls and repairs
- > Lower external spend
- > Reduction of overtime (optimised utilisation of personnel/ flexible working time models)
- > Organisational optimisation and staff reduction via early-retirement programs
- > Stretching of overhaul cycles for power plants

<sup>1</sup> Excluding Máttra; gross generation, not including ~3 TWh of own consumption | <sup>2</sup> Adj. EBITDA minus capex (before changes in provisions)

# Longstanding experience in lignite operations

## Overview of mining activities

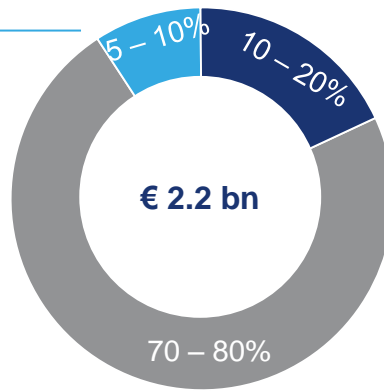


# Majority of mining obligations due to recultivation

## RWE's lignite mining provisions in Germany (as of 31 Dec 2016)

### Surface preparation (relocation)

- > Resettlement of villages
- > Set up of infrastructure at resettlement sites
- > Relocation of motorways, country roads and rail tracks



### Mining damage

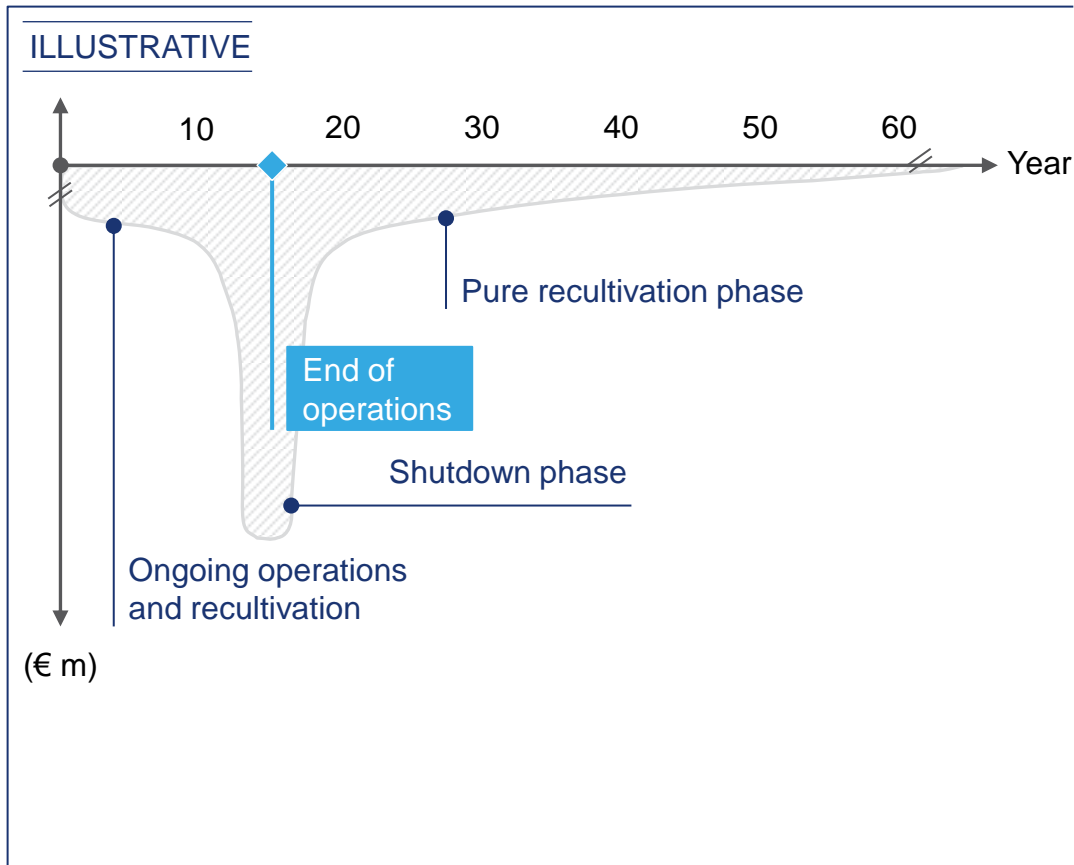
- > Reimbursement for subsidence damages
- > Substitute water supply

### Recultivation

- > Recultivation of land
- > Backfilling of open cast mines
- > Creation of residual lakes
- > Filling residual lakes with river water
- > Water management and monitoring of residual lakes

# Stable utilisation of provisions expected for the foreseeable future

## Example: cash flow profile (one mine)



## Utilisation of all mining provisions

### Until ~2030

- > Stable utilisation of provisions, mainly for relocation, mining damage and reclamation
- > Annual utilisation: €40 m – €80 m

### After 2030

- > Increased utilisation of provisions due to shutdown of Inden

# Lignite – key messages



Experienced operator of well-managed and integrated system



CO<sub>2</sub> reduction in line with broader political roadmap



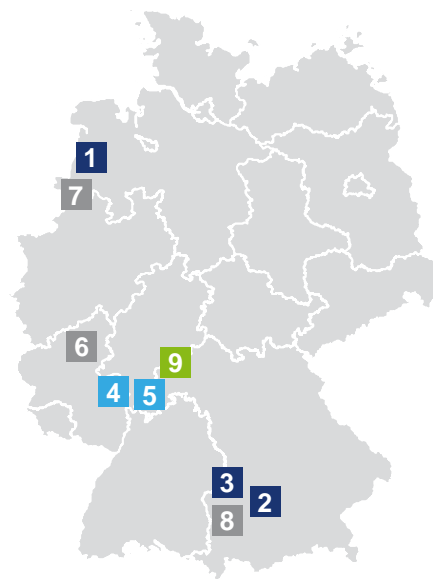
Efficiency improvements to keep system cash positive



# Nuclear

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# Experience across entire nuclear plant lifecycle

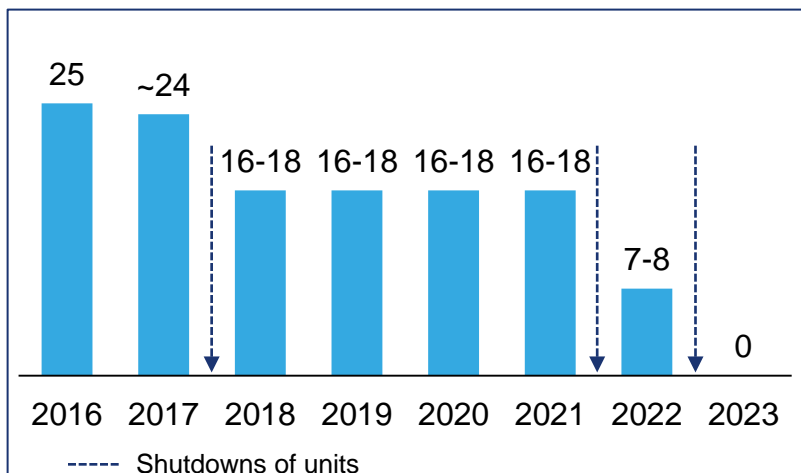


Nuclear units in Germany	Net capacity (GW)	End of operations	Status			
			Spent fuel removal	Decomm. licence	Decomm. progress	
<b>1</b> Emsland <sup>1</sup>	1.3	2022	2027E	Pending	-	Operational (3.9 GW)
<b>2</b> Gundremmingen C <sup>2</sup>	1.3	2021	2025E	Pending	-	
<b>3</b> Gundremmingen B <sup>2</sup>	1.3	2017	2022E	2017E	-	
<b>4</b> Biblis A	1.2	2011	✓	2017E	-	Post-operation (2.4 GW)
<b>5</b> Biblis B	1.2	2011	2018E	2017E	-	
<b>6</b> Mülheim-Kärlich	1.2	1988	✓	✓		In decommissioning (1.7 GW)
<b>7</b> KWL Lingen	0.3	1979	✓	✓		
<b>8</b> Gundremmingen A <sup>2</sup>	0.2	1977	✓	✓		
<b>9</b> Kahl <sup>3</sup>	0.01	1985	✓	✓		Decommissioned

Note: RWE economic share; excluding EPZ | <sup>1</sup> 12.5% owned by PreussenElektra (E.ON) | <sup>2</sup> 25% owned by PreussenElektra (E.ON) | <sup>3</sup> 20% owned by PreussenElektra (E.ON)

# Positive cash contribution from plants in operation

## Generation output (TWh)<sup>1</sup>



## Cash contribution<sup>2</sup>

- > Breakeven at base load prices of above ~€20/MWh, including additional planned efficiency measures
- > Although cost base already largely optimised, further efficiency measures in implementation

## Efficiency measures

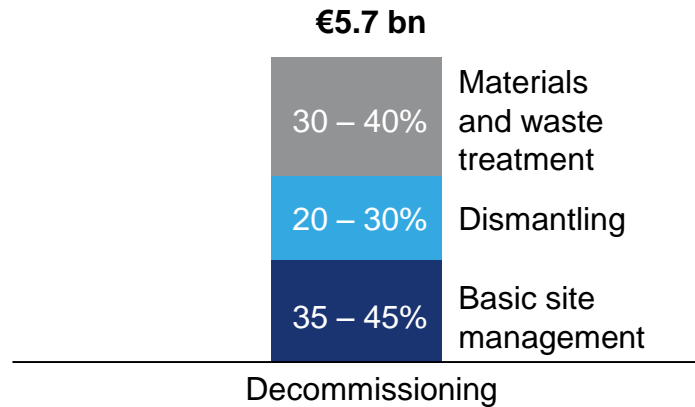
- > Staff reduction via utilisation of early-retirement programs according to decommissioning progress
- > Reduction of permanent external staff for units in operation
- > Reduction of non-safety relevant age-related replacement measures and maintenance activities
- > Lower expenses for uranium and casks for spent fuel

<sup>1</sup> RWE economic share, excluding EPZ | <sup>2</sup> Adj. EBITDA minus capex (before changes in provisions)

# Clear separation of responsibilities between nuclear operators and state

## RWE's responsibility

### RWE's remaining nuclear provisions (31 Dec 2016)

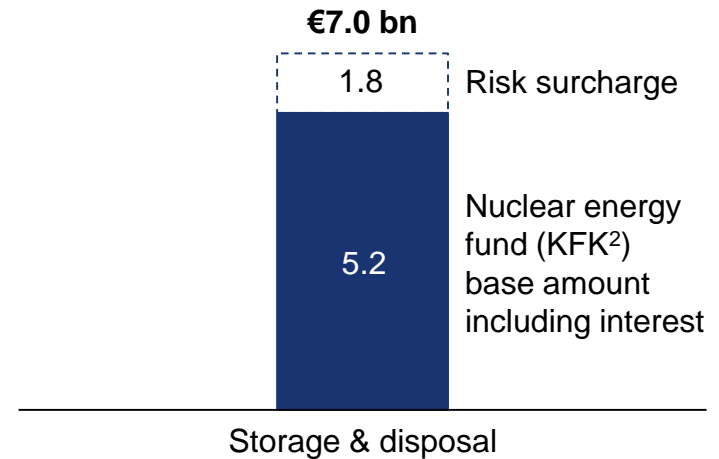


**Clear regulatory framework  
for decommissioning activities**



## State's responsibility

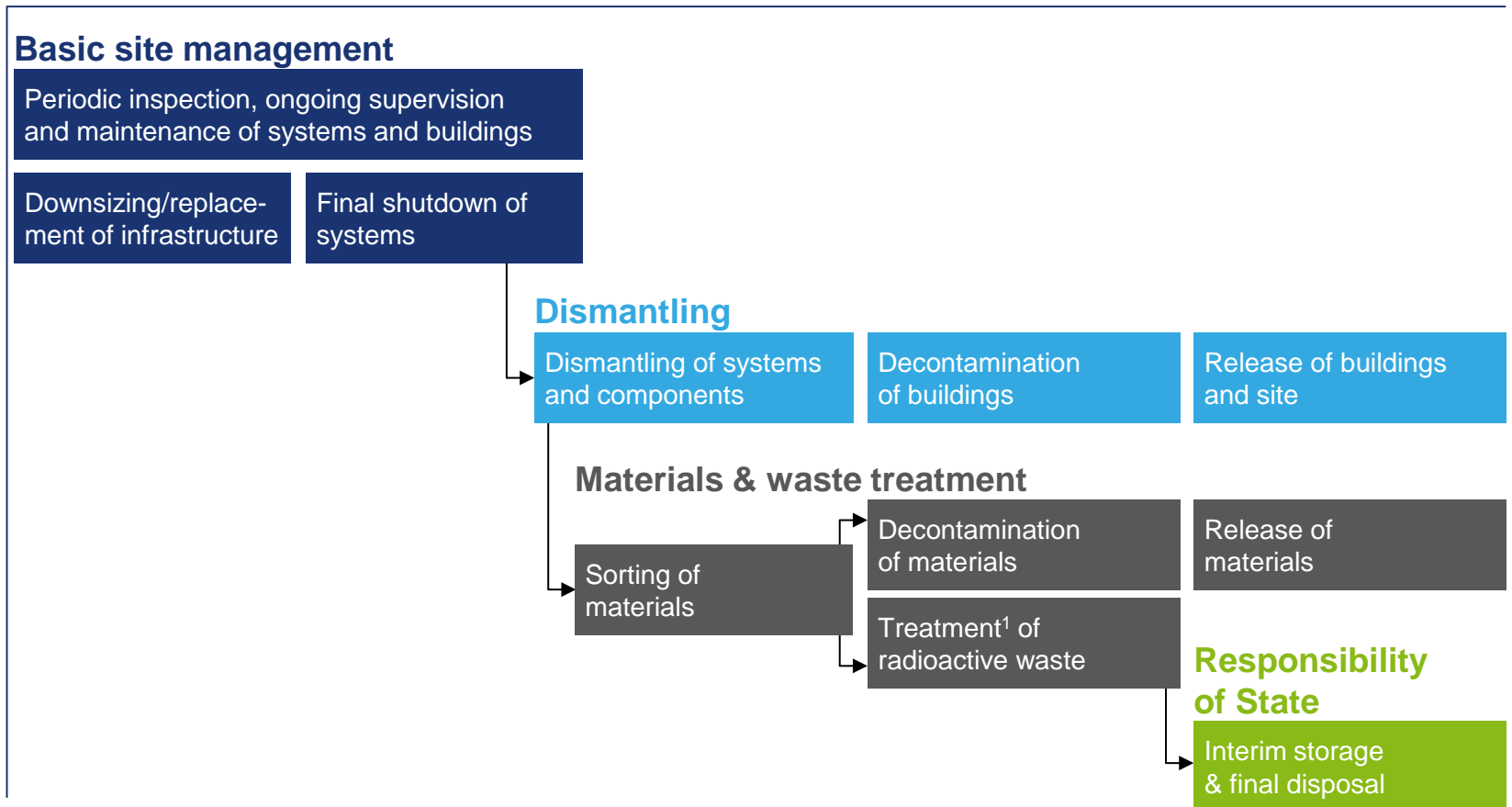
### RWE's contribution to state fund<sup>1</sup> (1 July 2017)



**Finite financial contribution  
to state fund without further liabilities**

<sup>1</sup> Figures reflect the consolidated view, including minority interest of E.ON in the Emsland nuclear power plant. RWE's economic share is €5.0 bn for the base amount including interest until 30 June 2017 and €1.8 bn for the risk premium (in total €6.8 bn) | <sup>2</sup> Kommission zur Überprüfung der Finanzierung des Kernenergieausstiegs

# Decommissioning steps well established



<sup>1</sup> E.g. melting, incineration, compaction, packaging and documentation

# Relevant decommissioning experience in-house

## Basic site management

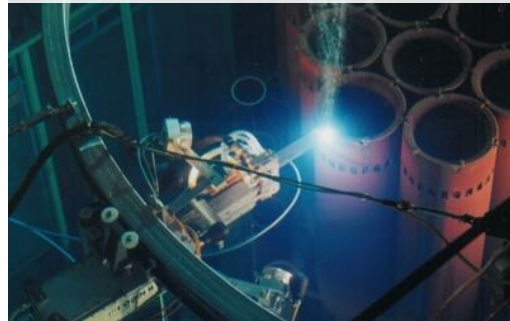
Example: Emergency power supply  
(during plant operations)



Downsized/replaced units  
(installed for decommissioning)

## Dismantling

Under water thermal cutting  
(reactor pressure vessel internals)



Manual dismantling  
(systems and components)

## Materials & waste treatment

Under water packaging  
(reactor pressure vessel internals)



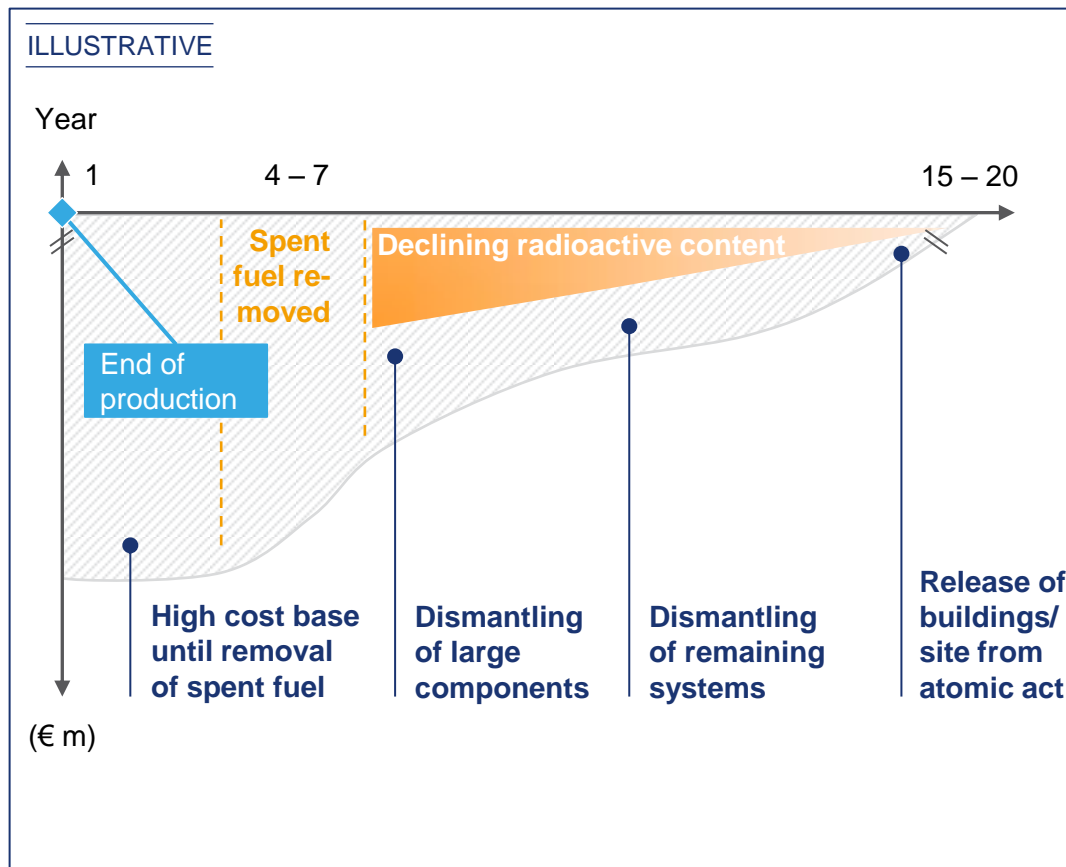
Manual decontamination  
(contaminated parts)

# Key success factors for decommissioning in place

	Key success factors	RWE's approach and experience
<b>Decommissioning planning &amp; management</b>	<ul style="list-style-type: none"><li>&gt; Timely receipt of licences</li><li>&gt; Clear blueprint for planning</li><li>&gt; Avoidance of delays/cost overruns</li></ul>	<ul style="list-style-type: none"><li>&gt; Early licencing process</li><li>&gt; Project management track record</li><li>&gt; Fleet approach (e.g. for dismantling of large components)</li></ul>
<b>Availability of suppliers</b>	<ul style="list-style-type: none"><li>&gt; Maintaining quality standards</li><li>&gt; Availability of key contractors</li></ul>	<ul style="list-style-type: none"><li>&gt; Qualified service providers are available</li><li>&gt; High safety standards for all parties</li></ul>
<b>Basic site management</b>	<ul style="list-style-type: none"><li>&gt; Early initiation of preparation process</li><li>&gt; Adequate infrastructure (field technology)</li></ul>	<ul style="list-style-type: none"><li>&gt; Cost cutting experience transferred</li><li>&gt; Early replacement/adaption of expensive infrastructure</li></ul>
<b>Dismantling &amp; materials and waste treatment</b>	<ul style="list-style-type: none"><li>&gt; Bundling of dismantling activities</li><li>&gt; Robust logistic concept</li><li>&gt; Availability of back end capacity</li></ul>	<ul style="list-style-type: none"><li>&gt; Proven and established techniques</li><li>&gt; Preferred on-site treatment of materials and waste</li></ul>

# Cash flow profile of provisions driven by timing of individual shutdowns

## Example: Decommissioning cash flow profile (one unit)



## Utilisation of all nuclear provisions

### Until ~2020

Stable utilisation of provisions  
(€200 m – €300 m p.a.)

### From 2021 onwards

Increased utilisation of provisions  
due to further shutdowns  
(€300 m – €500 m p.a.)

### From ~2030 onwards

Clear reduction in utilisation of  
provisions



# Nuclear – key messages



Strong expertise, both in operations and decommissioning



Positive cash contribution until decommissioning



Significantly improved planning certainty due to new nuclear law

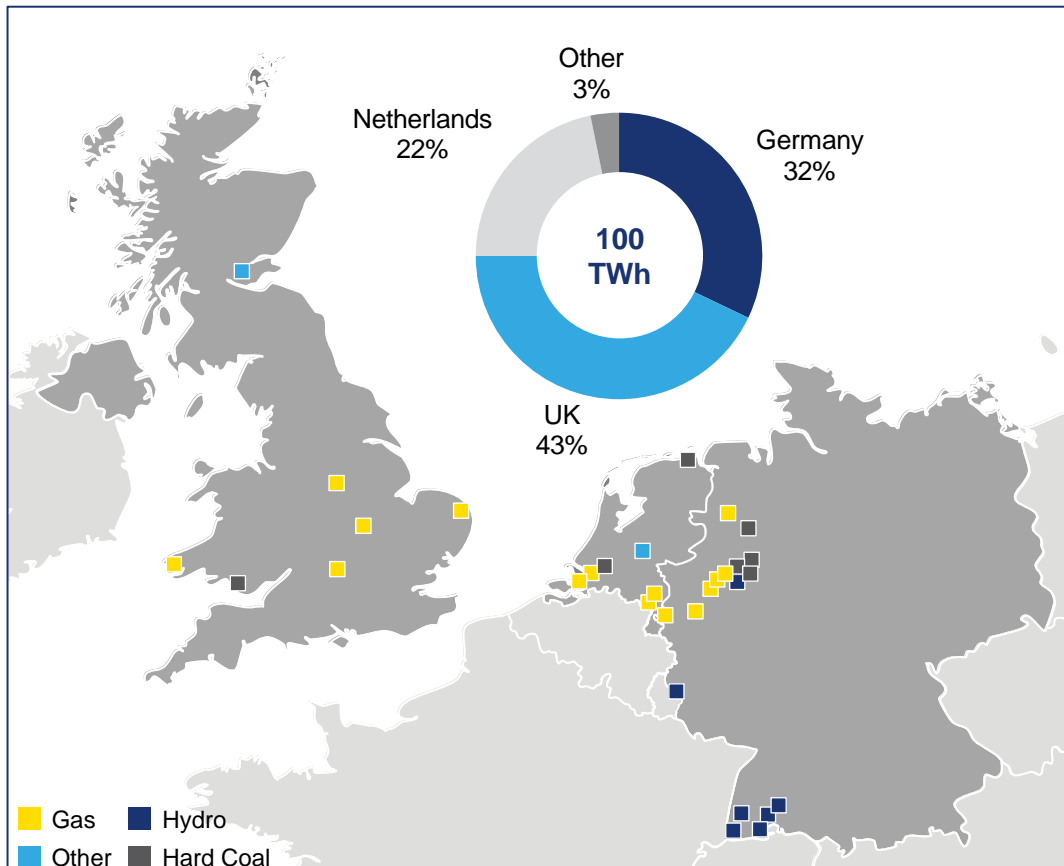
# European Power

Efficient operator of modern and flexible  
generation fleet

Roger Miesen  
Chief Technical Officer  
RWE Generation

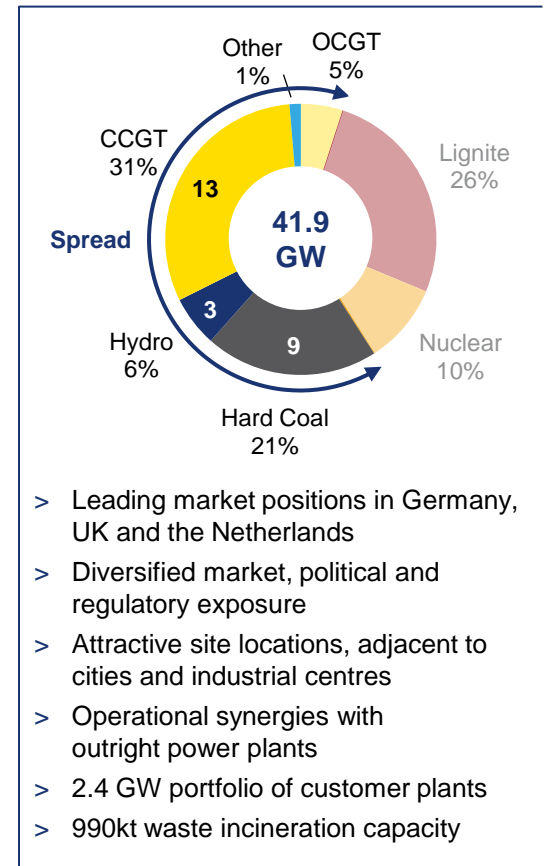
# Well positioned portfolio across regions and technologies

Major power plants and production volumes<sup>1</sup> (2016)



<sup>1</sup> Including Denizli

Generation capacity (2016)

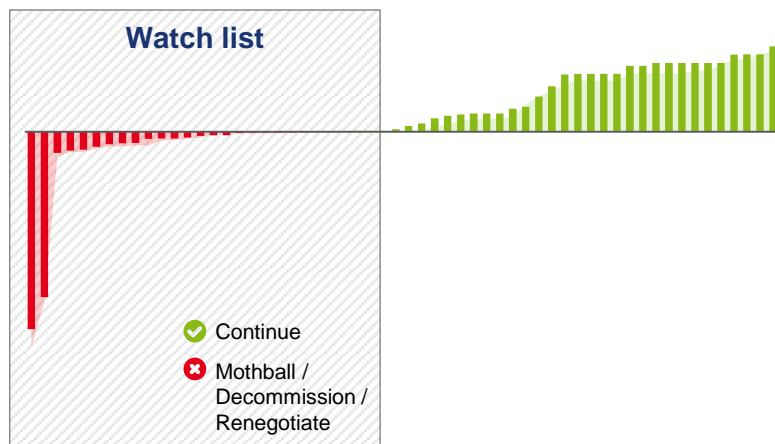


- > Leading market positions in Germany, UK and the Netherlands
- > Diversified market, political and regulatory exposure
- > Attractive site locations, adjacent to cities and industrial centres
- > Operational synergies with outright power plants
- > 2.4 GW portfolio of customer plants
- > 990kt waste incineration capacity

# Rigorous cash flow-based portfolio decisions

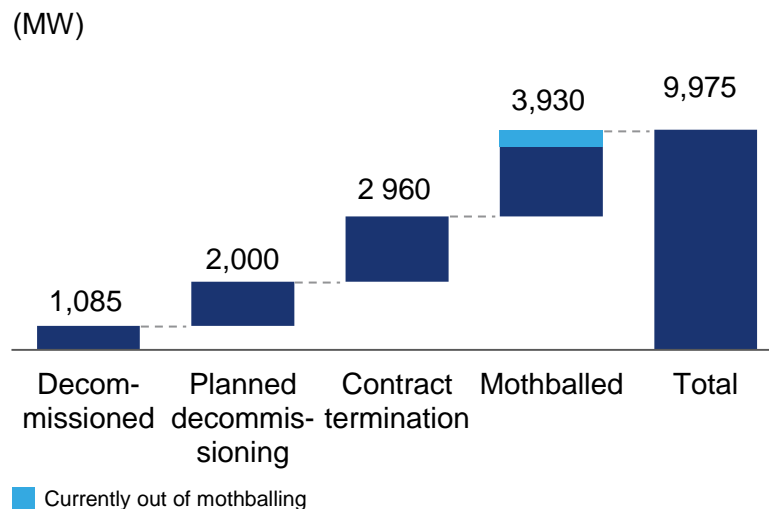
## Corporate cash contribution<sup>1</sup>

### Power plant units and contracts



- > Detailed cash-oriented report (quarterly basis, unit-by-unit analysis)
- > Focus on economic cash flows (gross margin, operating costs and overhead allocation)
- > Remaining loss-making contracts fully provisioned

## Cumulative portfolio measures since 2012



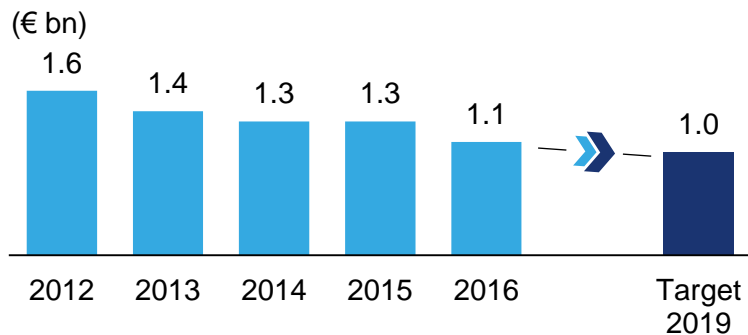
- > Strict portfolio evaluation process
- > Decommissioning of uneconomic plants and termination of loss making contracts
- > Longer-term mothballing achieved at very low costs
- > Ability to bring plants back online at short notice (e.g. via redeployment of staff)

<sup>1</sup> Average cash contribution 2017 – 2021 per unit (based on market forward prices and total cash costs including central overhead allocation)

# Significant cash improvements while maintaining full optionality

## Management of cost base

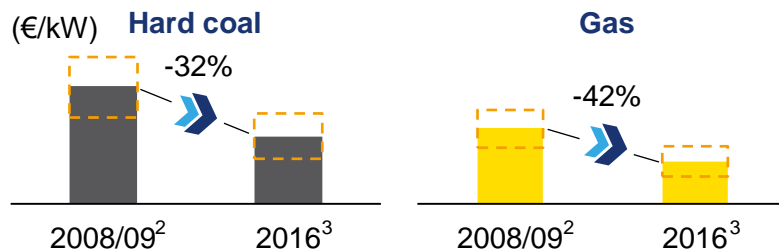
### Operational cash cost development<sup>1</sup>



### Additional efficiency measures

- > Further fleet synergies (more efficient operations, reduced operational cost)
- > Ongoing technical improvements (e.g. minimum load reductions, improved ramp rates)
- > Increasing degree of cluster management/remote plant operations (Gersteinwerk – Westfalen, Amercentrale – Moerdijk)
- > Business process optimisation (efficient overheads, rationalised document management)

### Key performance drivers (core cost analysis)



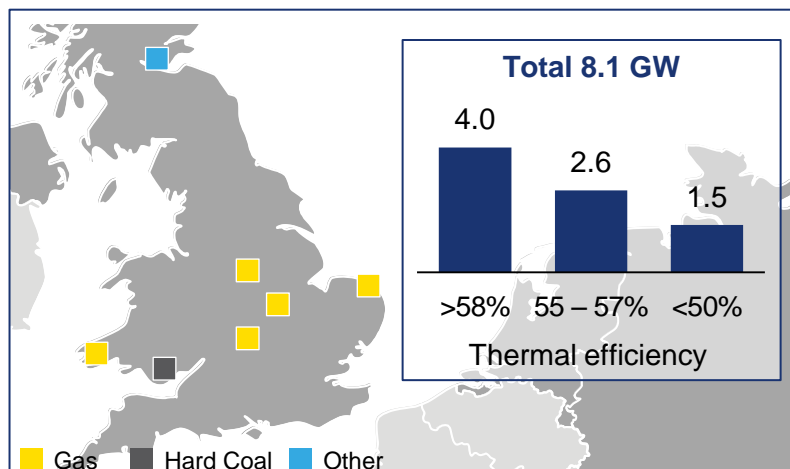
- > Best-in-class O&M structure and continuous improvement
- > Delegation of responsibility into plants and divisions
- > Gas turbine fleet management for 14 GT26 machines
- > Competence centres for key maintenance areas
- > Convoy management (hard coal new builds)

Minimum-maximum range

<sup>1</sup> Opex and capex without large projects | <sup>2</sup> Solomon benchmark study; based on comparable and relevant wholesale units | <sup>3</sup> RWE fleet comparable operational expenditures

# UK generation portfolio – excellent competitive position and upside from capacity market

## Highly efficient fossil fuel portfolio

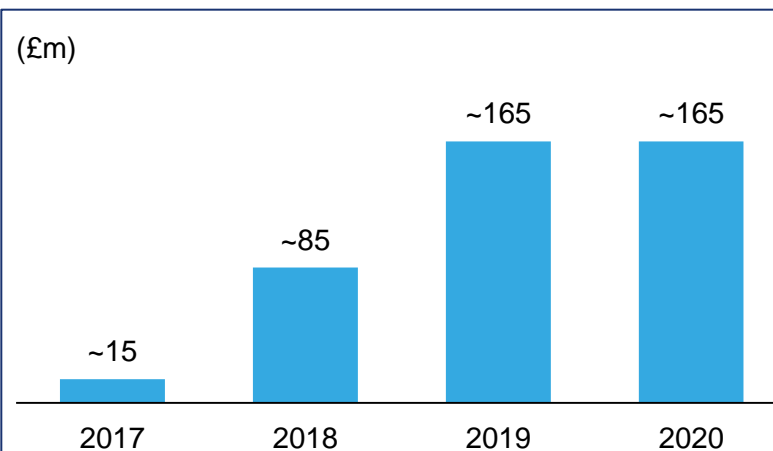


## Assets well positioned in market

Pembroke (2.2 GW)	<ul style="list-style-type: none"> <li>&gt; Latest technology (upgraded in last 2 to 3 years)</li> <li>&gt; Pembroke 58% thermal efficiency</li> </ul>
Staythorpe (1.7 GW)	<ul style="list-style-type: none"> <li>&gt; Direct water cooling and next to LNG terminal (Pembroke)</li> </ul>
Didcot (1.4 GW)	<ul style="list-style-type: none"> <li>&gt; Close to major demand centres</li> </ul>

<sup>1</sup> Based on cleared capacity prices (nominal) and capacity contracts secured by RWE

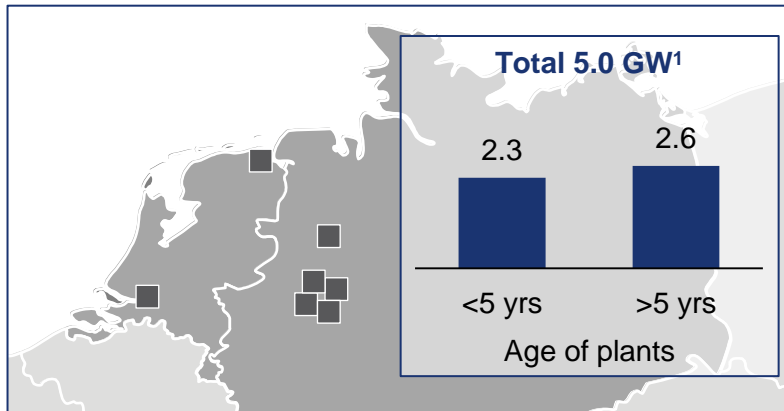
## Revenue from capacity market<sup>1</sup>



- > Strong position in attractive market
  - Largest fossil fuel generator
  - Management of small OCGTs, CHPs and customer plants (>700 MW)
- > Assets situated in attractive locations
  - Operational sites in southern and coastal areas
  - Portfolio of brownfield sites available
- > All large units successful in capacity auctions

# Continental European hard coal – cash positive operations with upside from biomass co-firing

## Restructured power plant portfolio



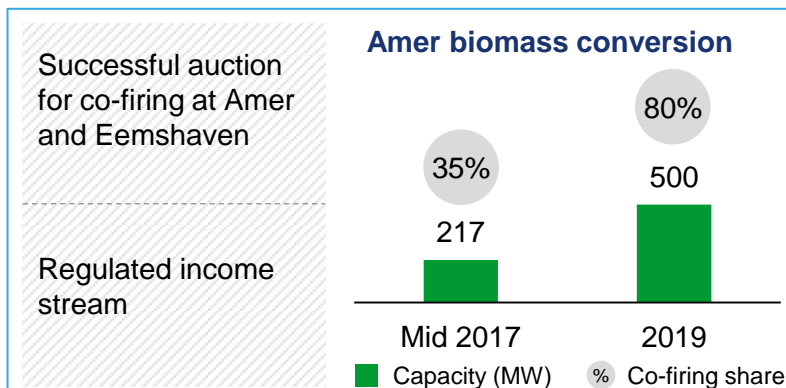
## Efficient convoy management

### 800 MW class



- ✓ 3 identical units (commissioned 2014/15)
- ✓ High efficiency (>46%)
- ✓ Significant operational synergies (maintenance and technical improvements)

## Biomass co-firing optionality

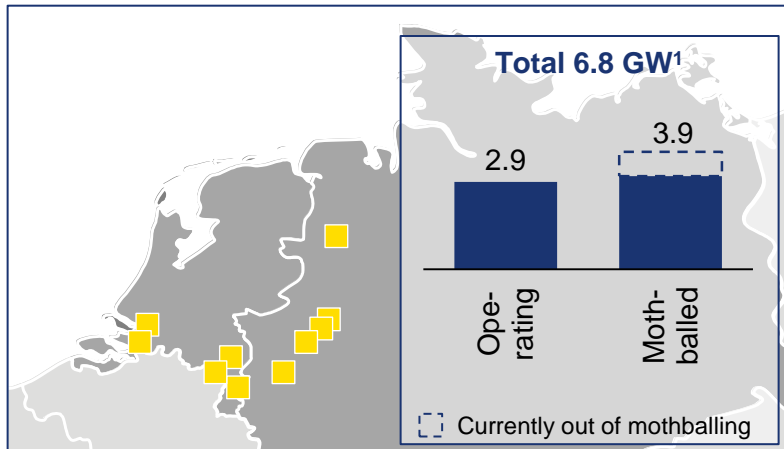


- > Balanced portfolio of assets
  - 2 new-build plants (Westfalen, Eemshaven)
  - Highly flexible and cost efficient – potential to become mid-merit base load provider
- > Coal portfolio cash positive, following closures
- > Ongoing technological improvements
  - Biomass co-firing conversion
  - Convoy system

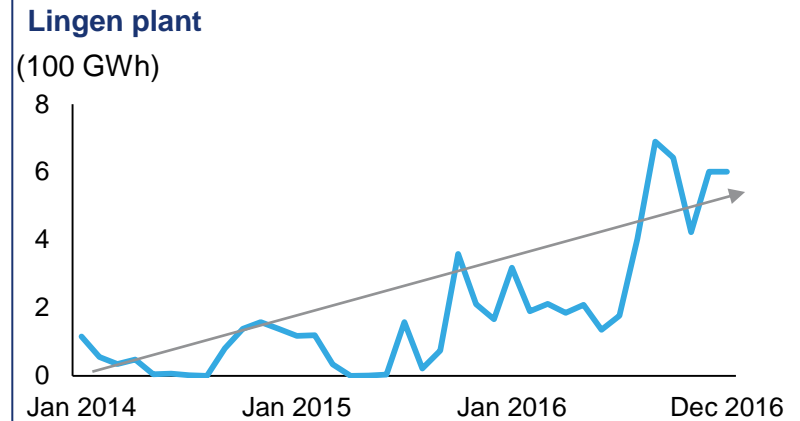
<sup>1</sup> Excluding contractual secured power plants

# Continental European gas – modern fleet, well positioned for tighter markets

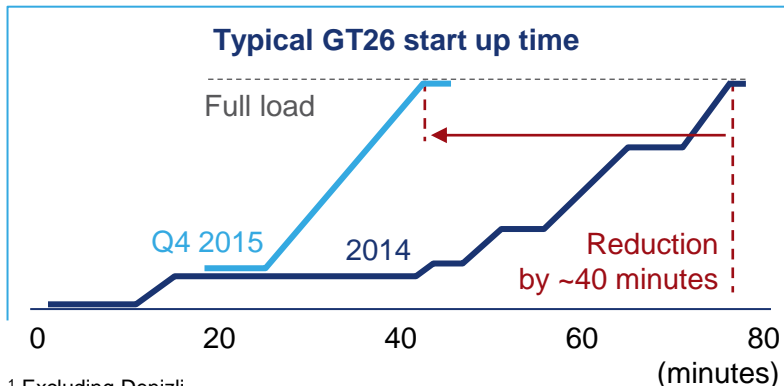
## Underutilised power plant portfolio



## Significant utilisation improvements



## State-of-the art technology



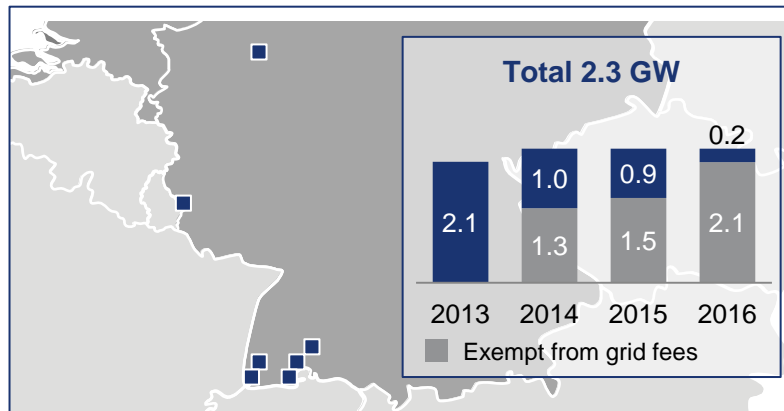
- > Modern portfolio well placed to benefit from expected market tightness
- > Ongoing technical improvements
  - GT26 ramp up time
  - Black start capability (Lingen, Claus C)
- > Attractive portfolio of customer plants
  - Long-term contracts and stable relationships
  - Additional optimisation potential (e.g. power-heat coupling)

<sup>1</sup> Excluding Denizli



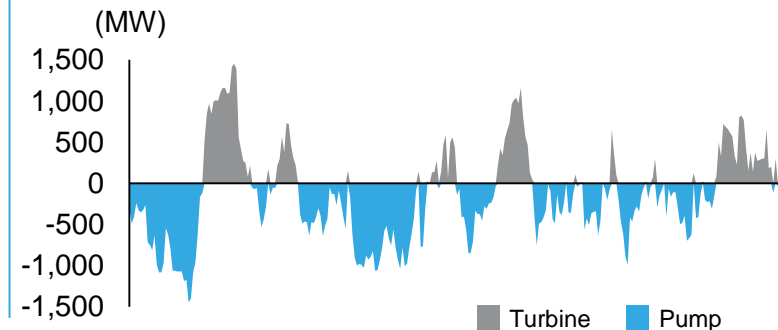
# Pumped storage – attractive portfolio optimisation opportunities

## Major hydro plants



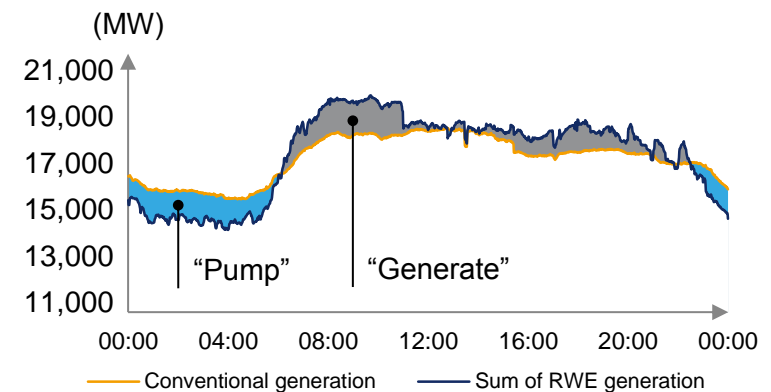
## Highly flexible assets

### Pumped storage portfolio dispatch (24 – 26 Dec 2016)



## Optimisation of RWE generation portfolio

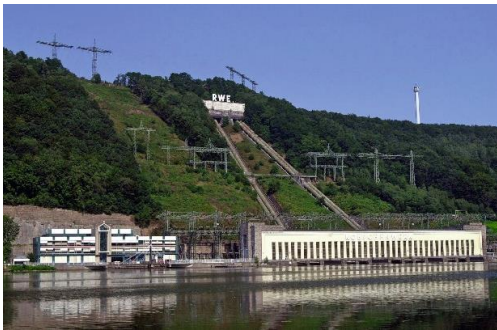
### Pumped storage portfolio dispatch (25 Jan 2017)



- > Favourable locations in the south of Germany
- > ~90% exempt from grid fees (market: 40 – 50%)
- > Highly flexible generation technology
  - >25,000 start/stops in 2016
  - +/- 4,400MW load change within 5 minutes
- > Valuable contribution to overall portfolio optimisation (avoidance of conventional ramp up in morning hours)
- > Existing pumped storage most commercially attractive storage technology

# Initiatives focused on security of supply

## Combined battery storage



- > 6 MW battery storage project (Herdecke, Germany)
  - Shared infrastructure (grid connection, personnel) with pumped storage plant
  - Operational in H1 2017
- > Leveraging long-term system integration experience of pumped storage plants into new storage technologies

## Temporary generation



- > Mutually beneficial partnership with Aggreko in UK since November 2014
  - RWE: maximise value of land and connections
  - Aggreko: off-season utilisation of mobile generation units
- > Multiple revenue streams (reserve and wholesale markets/avoided grid fees)

## Embedded generation



- > Long track record with gas engines (derived from German coal mine gas activities)
- > Small gas engines in UK (1–2 MW) connected to local distribution network (15 – 20 MW project size)
- > Planning applications for 4 UK projects submitted (1 for 20 MW at Grimsby CHP site; 3 at Cheshire CHP site)
- > Grimsby project obtained 15-year capacity market agreement

# European Power – key messages



Highly flexible and efficient power plant portfolio across core regions



Meticulous management approach to maximise value



Fleet well positioned for tightening energy markets in Europe



Attractive opportunities to further develop business operations

# Commercial Asset Optimisation (CAO)

Extraction and monetisation of value  
from generation assets

Tom Glover  
Chief Commercial Officer CAO  
RWE Supply & Trading

# Significant value contribution from CAO activities

## CAO value contribution

### Deviation from Reference Hedge Path

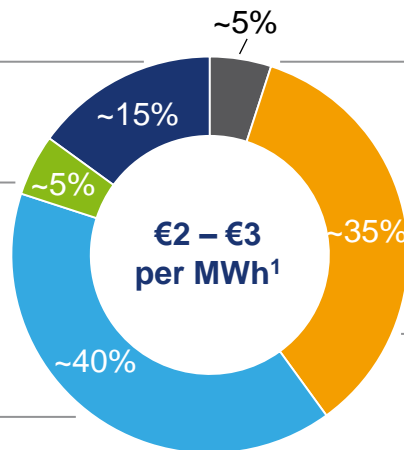
- > Within defined limits
- > Based on fundamental market views

### Fuel procurement & logistics

- > Physical procurement of fuel and substitutes
- > Commercialisation of by-products

### Reserve & ancillary services

- > Reserve, voltage support/ reactive power
- > Frequency response, black start



### Option management

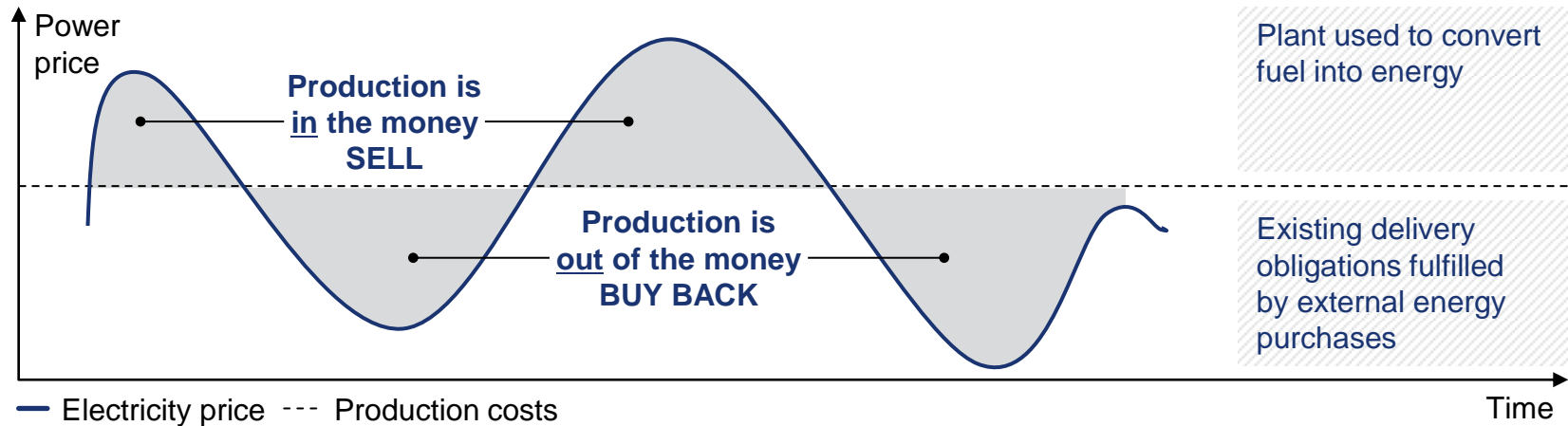
- > Re-optimisation of power station option
- > Shape management
- > Trading around hedge positions

### Short-term optimisation

- > Short-term trading
- > Balancing markets
- > Dispatch/intra-day trading

<sup>1</sup> On top of realised forward hedges as per Reference Hedge Path. Reported within results of Lignite & Nuclear and European Power

# Treatment of power plants as real options



## Intrinsic value

- > Value inherent in physical asset
- > Captured by
  - Forward hedging in the liquid tenor
  - Regularly reviewing and changing hedging approach

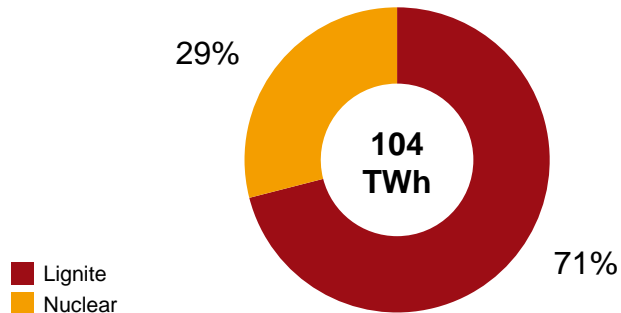
## Extrinsic value

- > Value in asset optionality
- > Captured by
  - Long-term optimisation (outages, mothballing, investments)
  - Short-term optimisation (dispatch, re-dispatch)
  - Reserve and ancillary services
  - Capacity markets

# Hedging strategy focuses on risk mitigation and value creation

## Outright position

### 2016 generation output

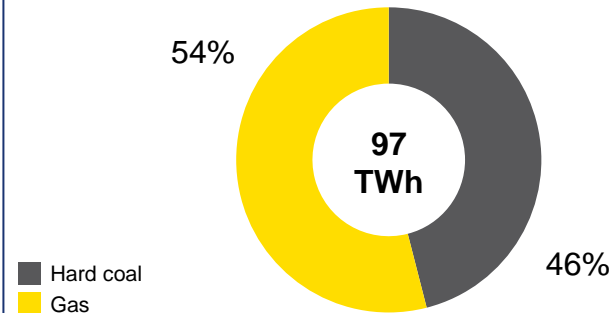


### Power only

- > Focus on risk mitigation from any potential negative changes in power prices
- > Position generally covered first by implicit fuel hedging
- > Provides averaging effect on earnings
- > Retention of upside potential via implicit fuel hedges

## Spread position

### 2016 generation output

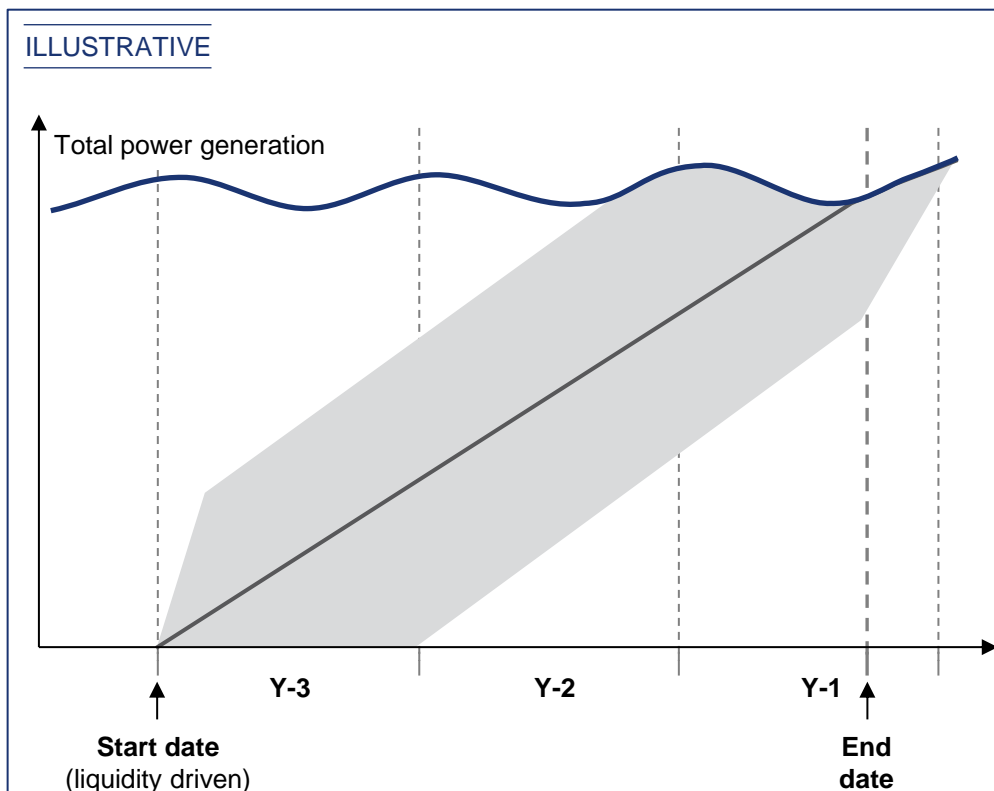


### Gas to power/coal to power

- > Focus on value maximisation
- > Less risky position due to lower volatility and ability to model fundamentally
- > Position hedged flexibly to maximise value
- > Hedge position limited to match expected in-the-money generation position

# Hedge path based on risk appetite and market views

## Reference Hedge Path example



- > Factors driving forward hedging
  - Risk appetite
  - Available market liquidity
  - Market view
  - Hedging costs
- > Accelerating/decelerating hedging within defined limits encouraged where strong market views exist

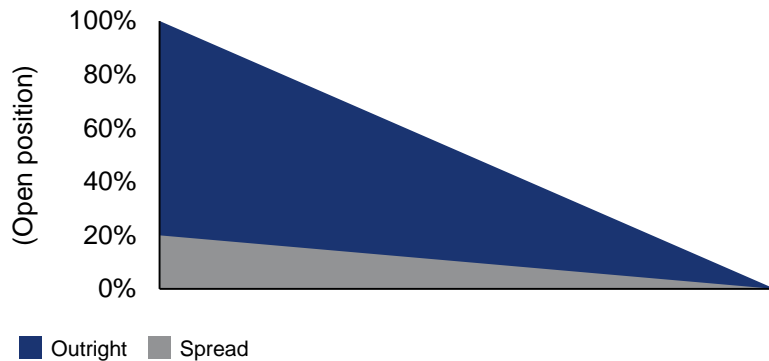
— Generation position    — Reference Hedge Path    ■ Deviation corridor



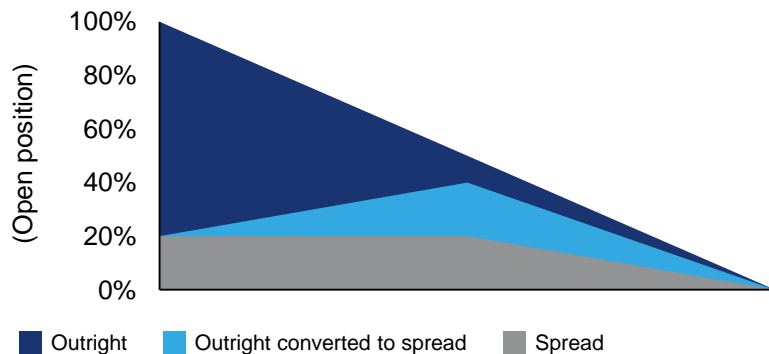
# Optimised hedging to reflect fundamental market view

## Production and hedged position

### Simple linear technology-based hedge



### Implicit fuel hedge approach



### Rationale

- > Liquidity in national power markets can constrain hedging volumes
- > Liquidity in fuel markets generally much higher, allowing for faster hedging **if desired**

### Methodology

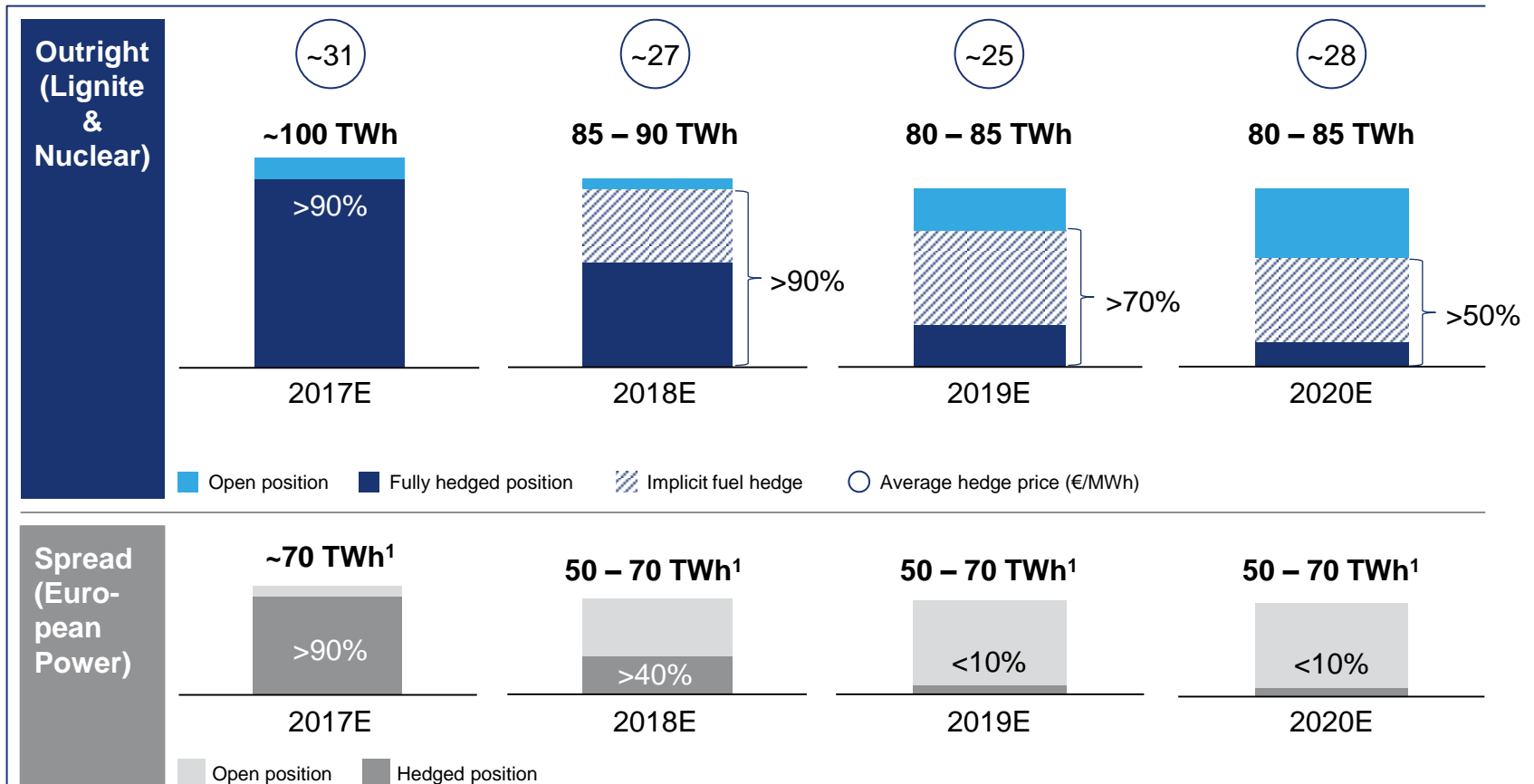
- > Short selling of fuel converts long outright power position into lower risk long spread position
- > Basket of fuel sold constantly monitored and adjusted

### Advantages

- > Effective de-risking of outright position against volatile fuel prices
- > Retained upside from spread positions (less volatile and higher confidence than outright prices)

# Significant exposure to power and generation spreads retained

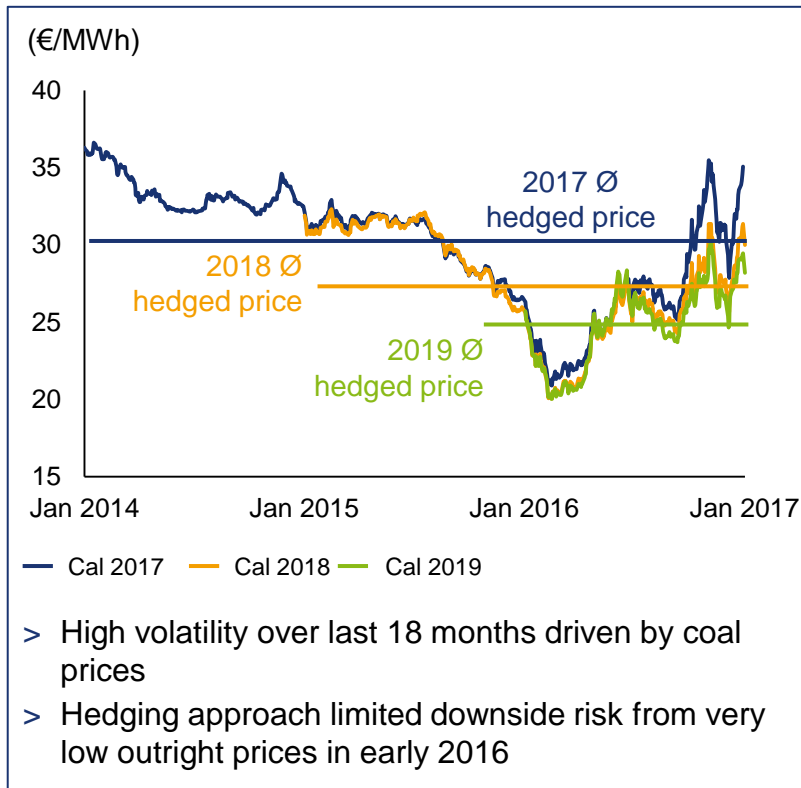
Expected positions and hedge status as of 31 December 2016



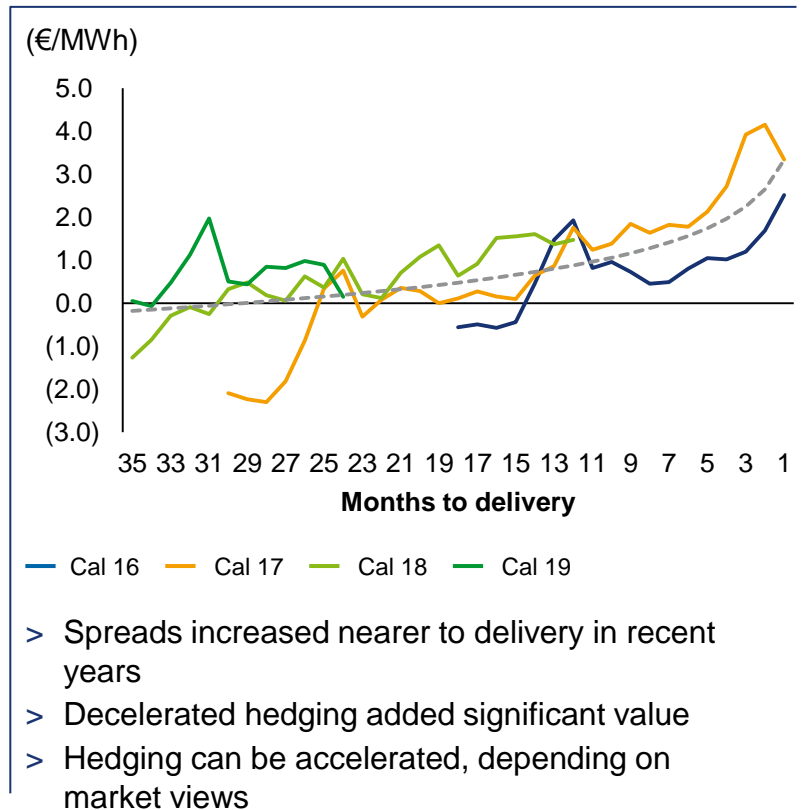
<sup>1</sup> Total in-the-money spread

# Changes in hedging rates can add significant value

## Development of German base load prices



## Development of German fuel spreads<sup>1</sup>

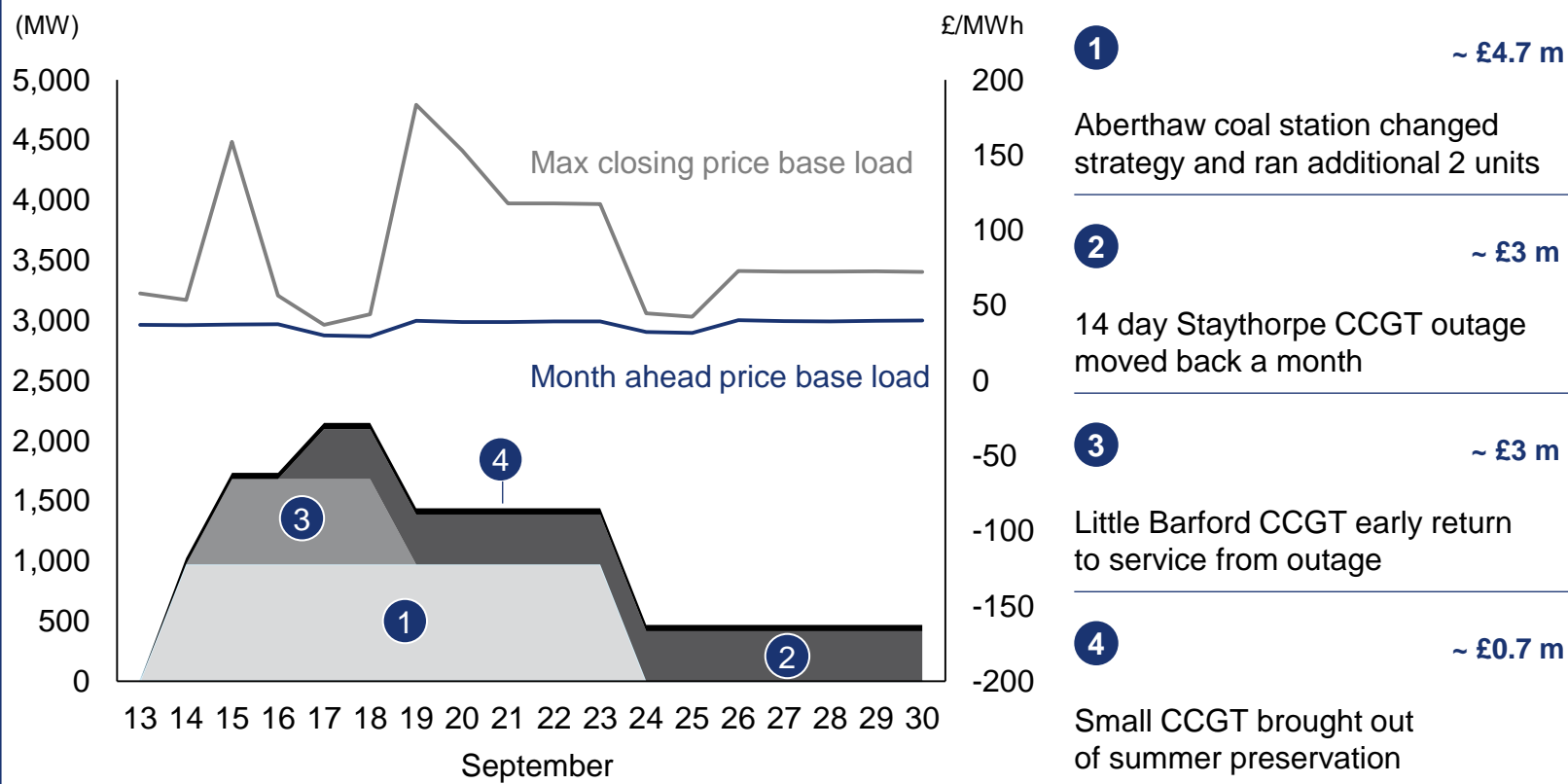


<sup>1</sup> Fuel spread defined as: Power price – (pass-through-factor carbon × EUA price + pass-through-factor coal × coal price + pass-through-factor gas × gas price)  
Source: Bloomberg as of 31<sup>st</sup> December 2016

# Extracting the extrinsic value of the real option

## Example: Immediate commercial and operational response to tight UK system margin

Price and available production increase during September 2016



# CAO – key messages



Application of trading mind-set to commercial management of assets



Flexible and market driven execution of hedging strategies



Proven track record of value extraction from existing asset base



Well positioned to capture upside from increasingly volatile power markets

# Supply & Trading

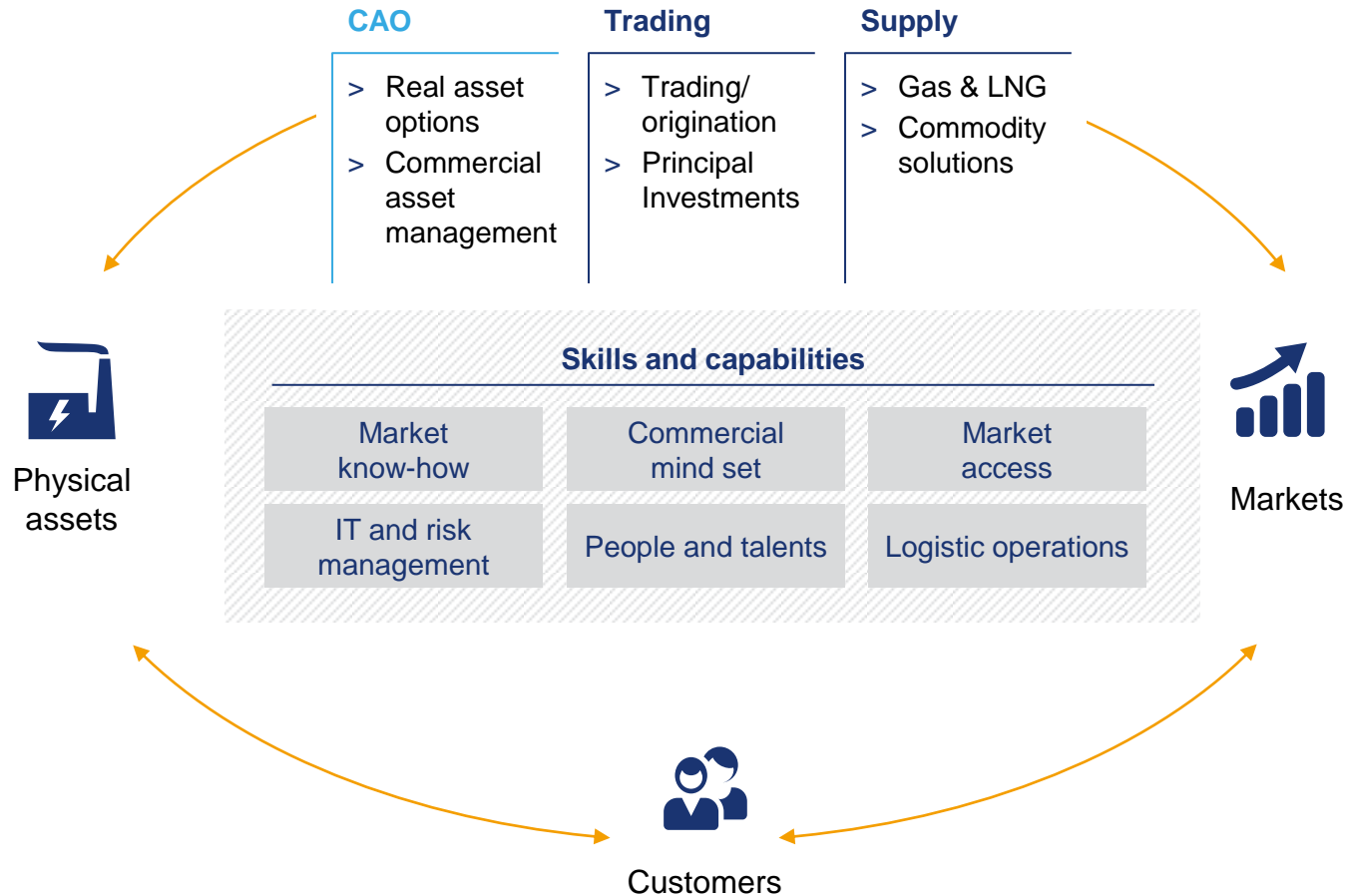
Value creation through fundamental  
understanding of markets

Andree Stracke

Chief Commercial Officer Origination & Gas Supply

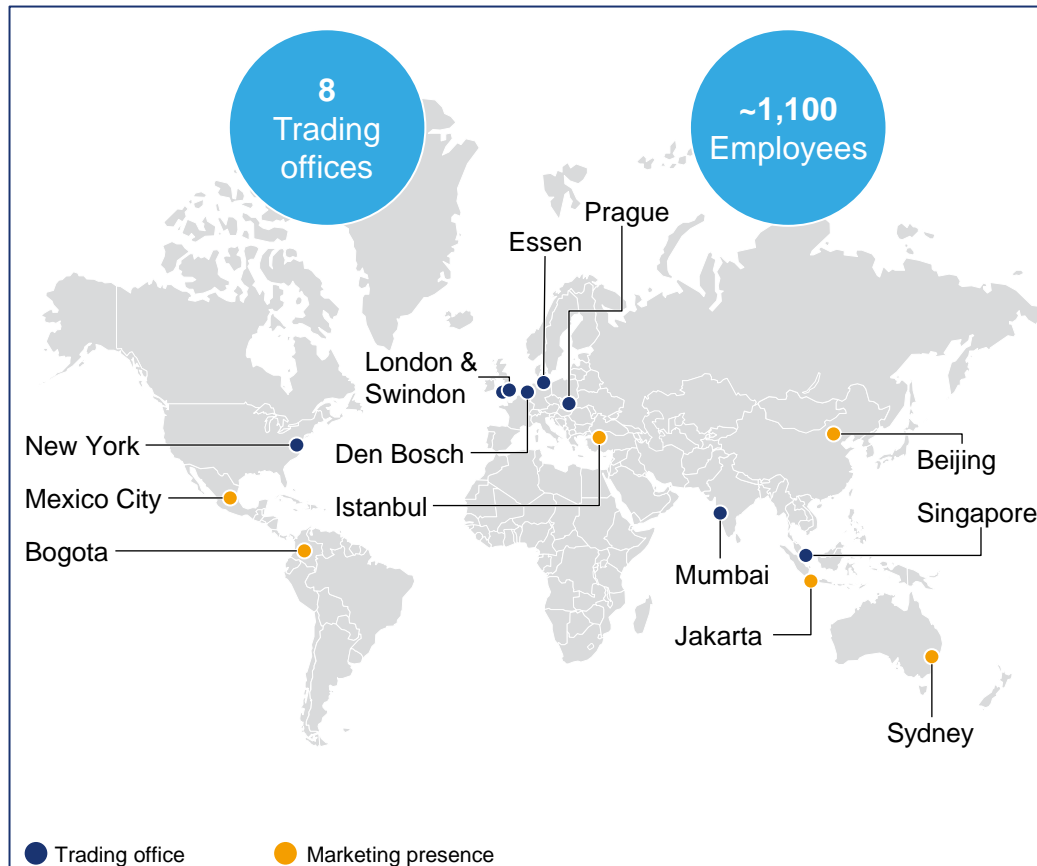
RWE Supply & Trading

# Strong commercial platform for Supply & Trading activities

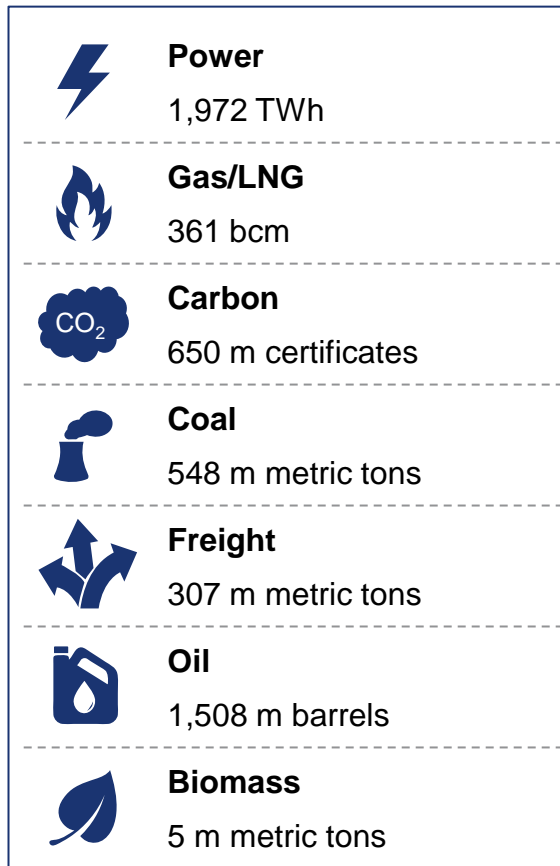


# Global presence and broadly diversified commodity exposure

## Global footprint



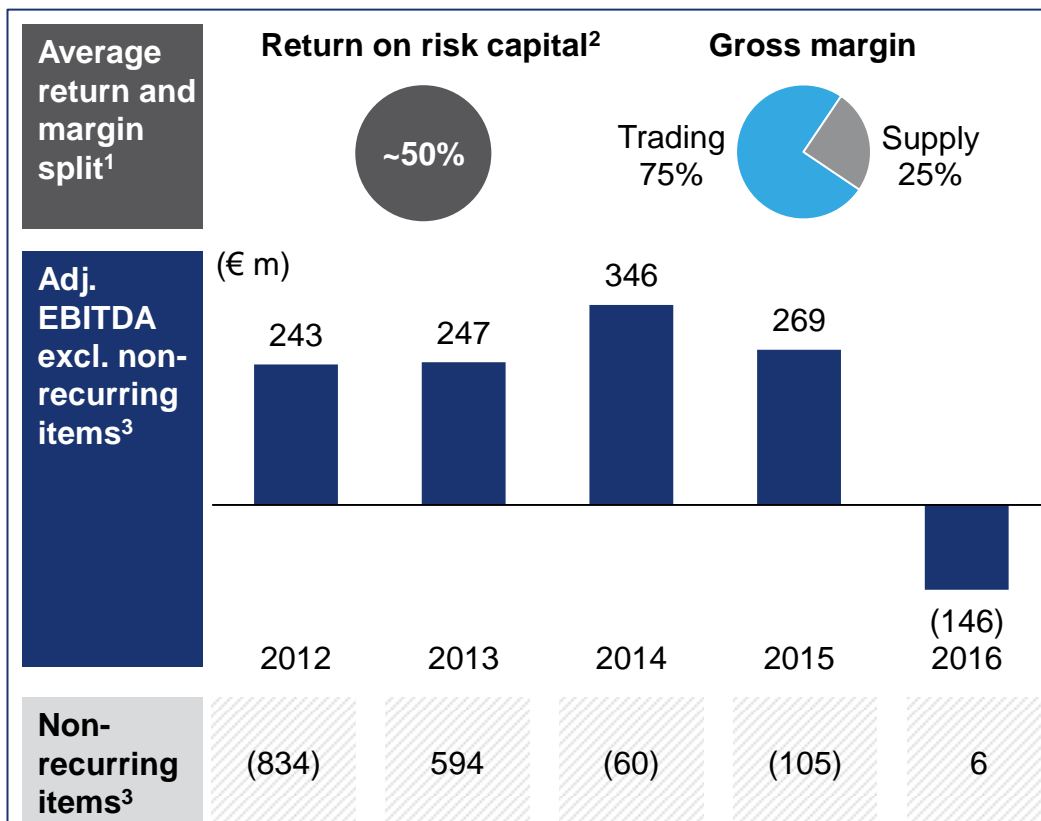
## RWE trading volumes (2016)





# Important earnings contributor to RWE results

## EBITDA development and gross margin split



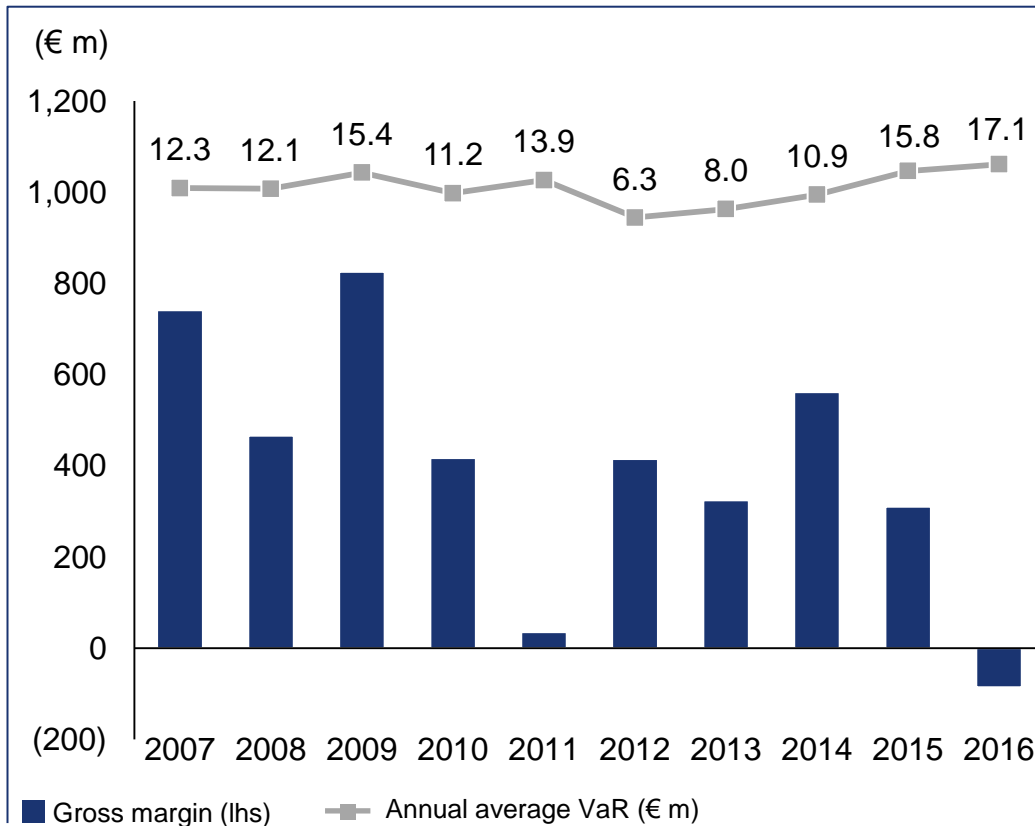
## Business segments



<sup>1</sup> 5 year average | <sup>2</sup> Adj. EBITDA (excluding non-recurring items) / risk capital employed; includes risk capital for Trading and Origination, invested capital for Principal Investments, Gas & LNG and Commodity Solutions | <sup>3</sup> Non-recurring items: predominantly legacy gas midstream contracts

# Trading: Track record of attractive risk adjusted returns

Gross margin versus VaR



- > Strong track record of achieving attractive returns while staying below risk limits
- > Historically, average portfolio VaR has been significantly below VaR limit (1 day, 95%) of €40 m
- > Long term average gross margin of approx. €400 m
- > Industry benchmark of 10-times VaR limit set for performance

# Trading: Understanding of fundamentals drives trading approach

## Fundamental analysis (examples)

- > **Power:** demand, conventional power plants, renewable feed-in, cross border flows, weather
  - ✓ Deep understanding of physical assets
  - ✓ Fundamental modelling of supply/demand balances
- > **Gas:** demand, pipeline flows, LNG deliveries, storage levels

## Quantitative modelling

- > Outright fundamental fair value
  - ✓ Monitoring of misvaluations in markets
- > Fuel spreads, time spreads, location spreads and product spreads
  - ✓ Assessment of risk/reward of trading opportunities

## Diversified trading exposure

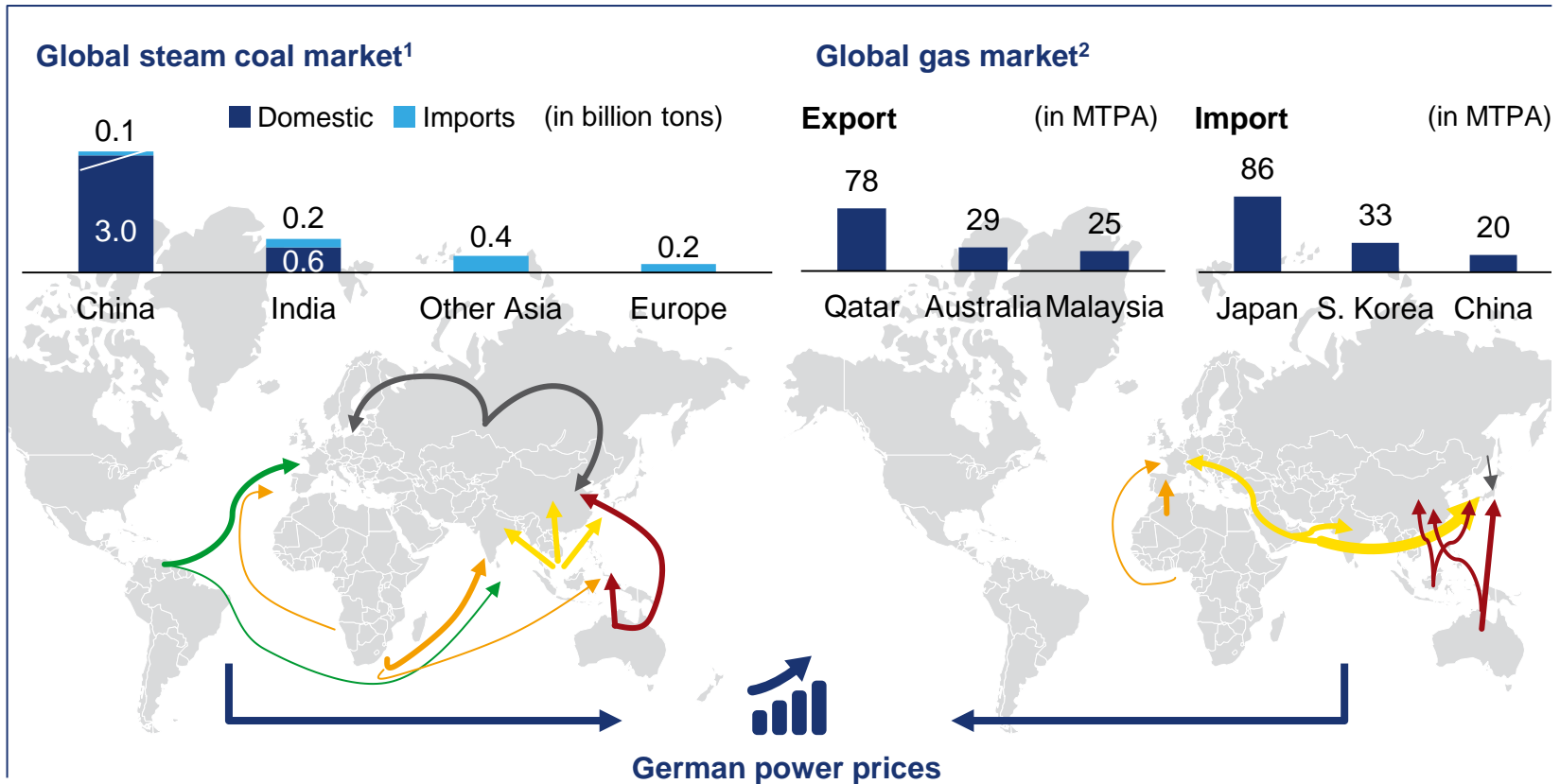
### Trading strategies

- ✓ Fundamental: assessment of fundamental fair value
- ✓ Relative value: detection of spread opportunities
- ✓ Systematic: algorithmic trading, monitor money flows
- ✓ Origination: negotiated contracts in illiquid markets



# Trading: Diversified global platform with better market insights

## Energy markets are global and interlinked



<sup>1</sup> Source: Based on IHS (2015) | <sup>2</sup> Source: IGU 2016 World LNG Report; map only shows information for LNG trading flows

# Principal Investments: Successful track record of energy related investments

## Strategic approach

- > Established to invest across the commodity spectrum
- > Focus on private equity-like investments where RWE Supply & Trading can extract value from strong trading capability and asset know-how
- > Current investment portfolio of ~€100 m with average deal size of ~€15 m
- > Equity IRR targets of 15 – 20%
- > Global focus: Europe, Americas and Asia-Pacific
- > Target holding period 3 to 5 years

## Active investments

**stem**



**LakeCoal** Chain Valley Colliery



## Case studies of investments

### Lynemouth Power (UK)



- > Acquisition of 420 MW coal-fired power station including permission to convert to biomass in 2012
- > RWE developed a “shovel ready” engineering project for the conversion which was awarded a CfD by UK government
- > Disposal to EPH in January 2016 realising a book gain of €33m

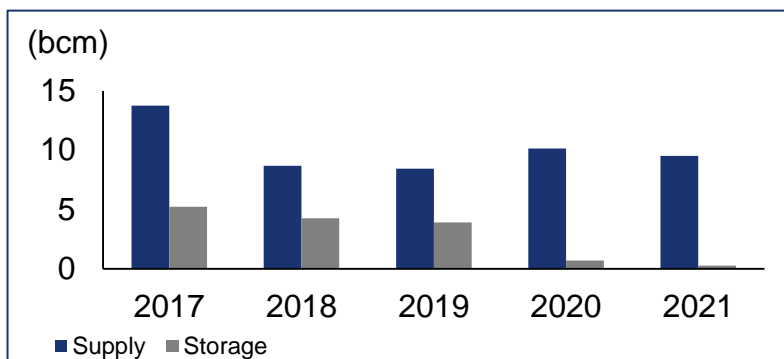
### Blackhawk mining (US)



- > Central Appalachian based mining company producing both metallurgical and thermal coal
- > Minority equity investment in 2012 concurrent with coal marketing agreement leveraging RWE’s global solid fuels trading platform
- > Dominant consolidator during market turmoil of 2013 – 2016, increasing output >10x and shifting primary focus from thermal to metallurgical coal
- > Financial turnaround with significant positive EBITDA expected in 2017

# Gas & LNG: Leading European gas portfolio player

## Long-term contracted volumes



## Successful restructuring of gas portfolio

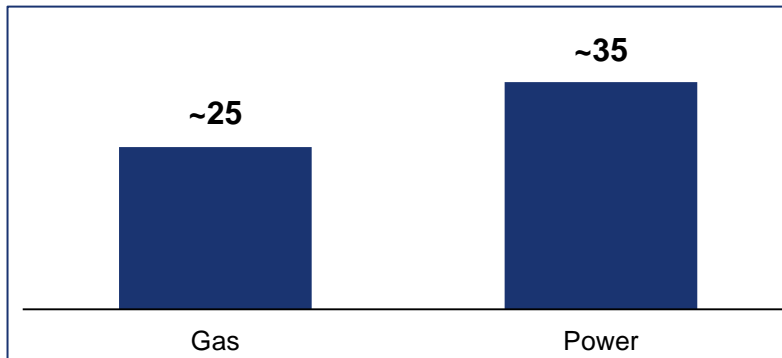
- > Successful renegotiation of supply and storage contracts to reflect market conditions
- > No oil-to-gas spread exposure for the coming years
- > Remaining risks fully provisioned

## Overview

- > Integrated diversified portfolio of supply, transport, storage and sales contracts
- > Primarily merchant positions (no operation of pipelines, terminals or storage assets)
- > Global LNG sourcing and supplying
- > Development of new opportunities with upstream and midstream partners, and further geographic expansion of physical portfolio
- > Focus on value maximisation from gas and LNG portfolio and its embedded optionality with portfolio optimisation and new contracts in existing and new markets
- > Provision of products and services to all of innogy's gas retail portfolios and external customers

# Commodity Solutions: Leading supplier in large customer segments

## Supplied volumes 2016 (TWh)



## Overview

- > Focus on customers with energy consumption of more than 100 GWh/a
- > Large industrials, municipalities, mid market oil/fuel hedging counterparts (e.g. airlines)
- > Market leader in the German large industrial B2B power segment with ~30% share
- > Long-term customer relationships with typical contract duration of 2 to 5 years

## Products and services

- > **Procurement and risk management**  
Delivery of (green) power, gas, coal, CO<sub>2</sub>, steam; procurement strategies, hedging and indexations; options and full spreads; access to all markets
- > **Portfolio and asset management**  
Optimisation of (asset) portfolios, 24/7 services (nominations, dispatching, balancing), management/pooling of flexibility including grid fee optimisation, asset solutions
- > **Operative services**  
(REMIT, EEG) reporting, forecasting, balancing group management, direct market access

## New digital online products



# Comprehensive risk management and limit system

## Elements of risk management

Quantitative	Qualitative
<b>Value-at-Risk (VaR)</b> Trading VaR limit: €40m	<b>HR</b> Internal development of senior traders and minimal external hires at senior level
<b>Delta</b> Limits for individual commodities	<b>Risk culture</b> Zero tolerance policy, immediate escalation
<b>Stress test</b> Limits for entire position	<b>Incentive model</b> Based on EVA including risk capital, partly deferred bonus with claw back mechanism
<b>Stop-loss</b> Absolute, draw down	<b>Risk governance</b> MaRisk compliant policy and ongoing improvements



# Organic growth initiatives: Leveraging skill set and know-how

## Global expansion of trading business

### Solid fuels Asia Pacific

- > Grow Asia-Pacific business footprint
- > Develop physical and financial portfolio including JVs and partnerships with local incumbents

### Asian power trading

- > Actively seek opportunities to enter liberalising power markets
- > Engage local counterparties, leverage existing trading know-how and infrastructure

### Principal Investments

- > Focus on commodity-linked investments to realise synergies with energy trading
- > Develop opportunity pipeline and gradually grow invested funds

## Growth in gas supply/commodity solutions

### European gas portfolio

- > Expand and leverage pan-European gas portfolio
- > Innovative service and product offering and increased focus on structured products

### Global LNG portfolio

- > Become global boutique portfolio player
- > Build and balance portfolio in a step-by-step approach – adding global diversified supply

### Commodity solutions

- > Expand customer base and products/service offering
- > Leverage trading platform and Commercial Asset Optimisation (CAO) services

# Supply & Trading – key messages



Leading platform providing competitive advantage through market insights



Strong track record of attractive returns and earnings contribution



Comprehensive risk control and management system



Organic expansion leveraging existing skills and know-how

# Closing remarks

# Investment highlights



Leading integrated European generation and trading business



Strong track record of operational excellence and commercial optimisation



Well placed to benefit from fundamental changes in energy markets



Solid financial position and focus on cash flow generation



Committed to value creation and sustainable dividend with upside potential

# Appendix

# Income statement 2016

(€ million)	<b>RWE stand-alone</b>	<b>RWE Group</b>
<b>Revenue (including natural gas tax/electricity tax)</b>	<b>19,574</b>	<b>45,833</b>
Natural gas tax/electricity tax	-180	-2,243
<b>Revenue</b>	<b>19,394</b>	<b>43,590</b>
Other operating income	1,161	1,435
Cost of materials	-16,829	-33,397
Staff costs	-1,921	-4,777
Depreciation, amortisation and impairment losses	-4,878	-6,647
Other operating expenses	-2,519	-4,323
Income from investments accounted for using the equity method	130	387
Other income from investments	1,042	153
Financial result	-1,375	-2,228
<b>Income before tax</b>	<b>-5,795</b>	<b>-5,807</b>
Taxes on income	-6	323
<b>Income</b>	<b>-5,800</b>	<b>-5,484</b>
of which: non-controlling interest	52	-167
of which: RWE AG hybrid capital investors' interest	-59	-59
<b>of which: net income/income attributable to RWE AG shareholders</b>	<b>-5,807</b>	<b>-5,710</b>

# Balance sheet 2016

(€ million)	RWE stand-alone	RWE Group
<b>Assets</b>		
Intangible assets	1,040	12,749
Property, plant and equipment	6,571	24,455
Investment property	45	63
Investments accounted for using the equity method	665	2,908
Other financial assets <sup>1</sup>	14,561	1,055
Inventories	1,577	1,968
Financial receivables	5,605	1,875
Trade accounts receivable	2,684	4,999
Other receivables and other assets	7,352	8,591
Income tax assets	303	453
Deferred taxes	535	2,884
Marketable securities	7,137	9,825
Cash and cash equivalents	3,197	4,576
	<b>51,272</b>	<b>76,402</b>
<b>Equity and liabilities</b>		
RWE AG shareholders' interest	9,525	2,754
RWE AG hybrid capital investors' interest	942	942
Non-controlling interests	296	4,294
	<b>10,763</b>	<b>7,990</b>
Provisions	24,890	32,861
Financial liabilities	6,372	18,183
Other liabilities	8,969	16,514
Income tax liabilities	76	131
Deferred taxes	202	723
	<b>40,508</b>	<b>68,411</b>
	<b>51,272</b>	<b>76,402</b>

<sup>1</sup> Includes innogy stake at market value as per 31 December 2016

# Net debt 2016

(€ million)	<u>RWE stand-alone</u>	<u>RWE Group</u>
Cash and cash equivalents	3,197	4,576
Marketable securities	7,343	10,065
Other financial assets	1,278	1,621
Financial receivables against innogy	4,302	-
<b>Financial assets</b>	<b>16,120</b>	<b>16,261</b>
Bonds, other notes payable, bank debt, commercial paper	5,191	15,921
Hedge transactions related to bonds	-251	-263
Other financial liabilities	1,180	2,263
<b>Financial liabilities</b>	<b>6,121</b>	<b>17,920</b>
<b>Net financial debt</b>	<b>-10,000</b>	<b>1,659</b>
Provisions for pensions and similar obligations	2,873	6,761
Surplus of plan assets over benefit obligations	0	-29
Provisions for nuclear waste management	12,699	12,699
Mining provisions	2,363	2,363
Provisions for decommissioning of wind parks	0	334
Adjustments for hybrid capital (portion of relevance to the rating)	-1,078	-1,078
Plus 50% of the hybrid capital stated as equity	471	471
Minus 50% of the hybrid capital stated as debt	-1,549	-1,549
<b>Total net debt</b>	<b>6,858</b>	<b>22,709</b>

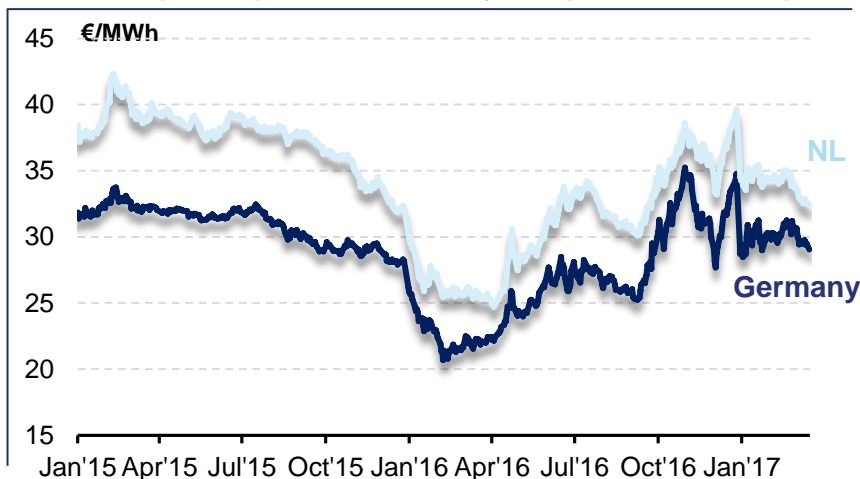


# Reconciliation to 2016 adjusted net income

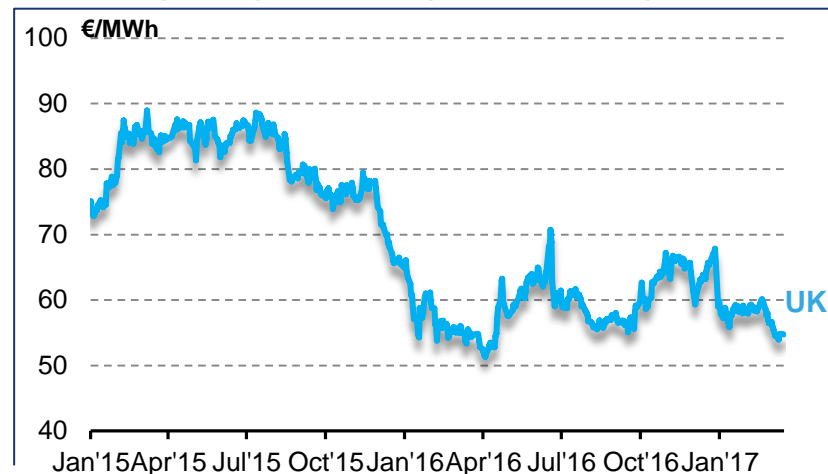
(€ million)	RWE stand-alone			RWE Group		
	Reported	Adjustments	Adjusted	Reported	Adjustments	Adjusted
<b>Adjusted EBIT</b>	<b>1,077</b>	<b>0</b>	<b>1,077</b>	<b>3,082</b>	<b>0</b>	<b>3,082</b>
Non-operating result	-5,496	5,496	0	-6,661	6,661	0
Financial result	-1,375	410	-965	-2,228	410	-1,818
Taxes on income	-6	-17	-23	323	-360	-37
<b>Income</b>	<b>-5,800</b>	<b>5,890</b>	<b>90</b>	<b>-5,484</b>	<b>6,711</b>	<b>1,227</b>
- Non-controlling interests	52	-103	-51	-167	-224	-391
- Hybrid investors' interest	-59	0	-59	-59	0	-59
<b>Net income</b>	<b>-5,807</b>	<b>5,787</b>	<b>-20</b>	<b>-5,710</b>	<b>6,487</b>	<b>777</b>

# Power prices and commodities

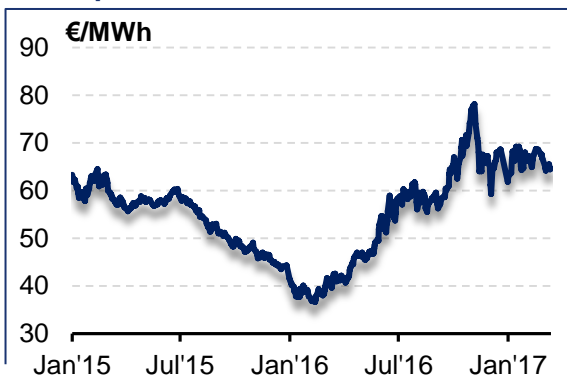
Baseload power prices – Germany, NL (1 Year Forward)



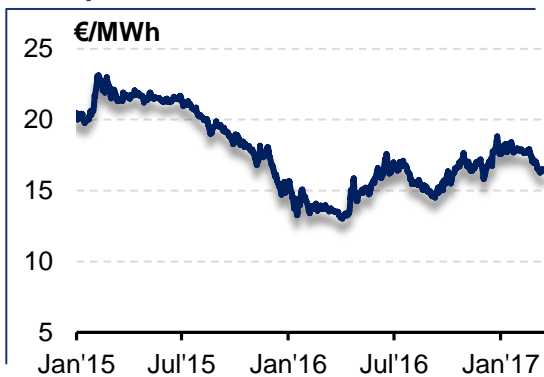
Baseload power prices – UK (1 Year Forward)



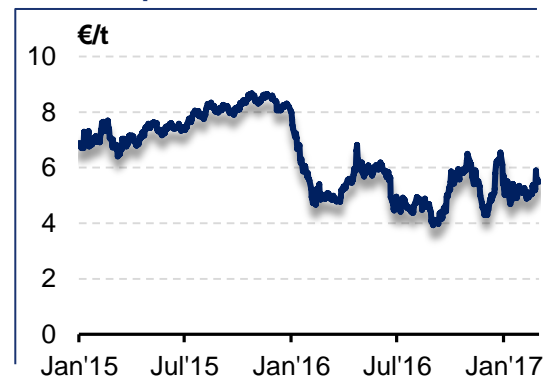
Coal prices – API2 Cal-Ahead



Gas prices – TTF Cal-Ahead



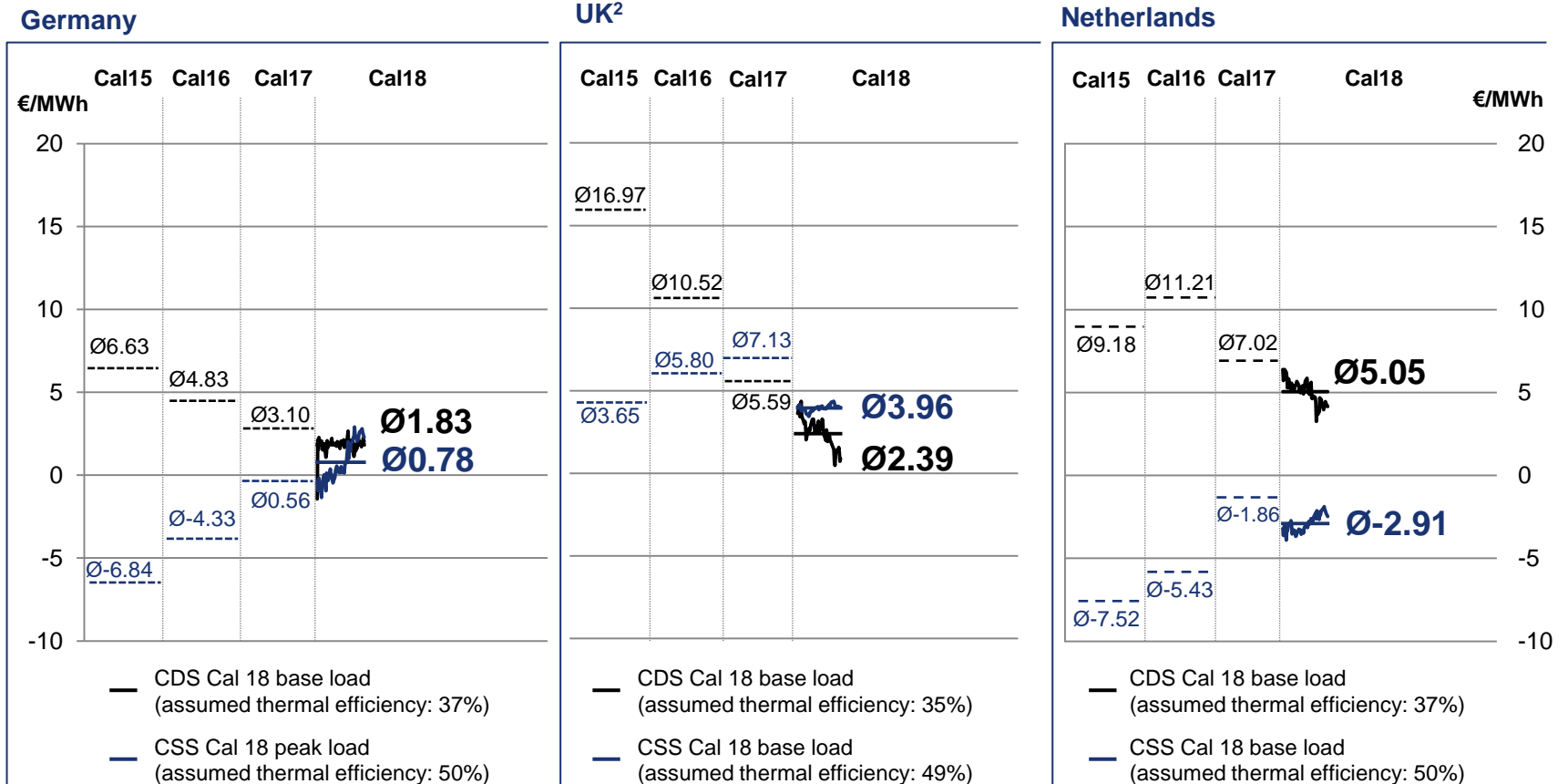
Carbon prices - EU ETS



Source: Bloomberg



# Clean Dark (CDS) and Spark Spreads (CSS) – 2015 - 2018 forwards for Germany, UK and NL<sup>1</sup>



<sup>1</sup> Settlement one year ahead (Cal+1) | <sup>2</sup> Including UK carbon tax | Source: RWE Supply & Trading, prices through to 20 March 2017

# RWE power plant portfolio

Power plant	Country	Commissioned	Net capacity		RWE's legal consolidation stake		RWE's economic stake		Partner	Stake in
			MW	%	MW	%	MW	%		
<b>Lignite</b>										
Frimmersdorf	Germany	1966,1970	562	100.0	562	100.0	562			
Neurath	Germany	1972–1976	2,091	100.0	2,091	100.0	2,091			
Neurath (BoA 2&3)	Germany	2012	2,120	100.0	2,120	100.0	2,120			
Niederaussem	Germany	1965–1974	2,446	100.0	2,446	100.0	2,446			
Niederaussem (BoA1)	Germany	2002	944	100.0	944	100.0	944			
Weisweiler	Germany	1965–1975	1,913	100.0	1,913	100.0	1,913			
Goldenberg	Germany	1992, 1993	40	100.0	40	100.0	40			
Refining plants (Berrenrath, Fortuna, Wachtberg)	Germany	various	180	100.0	180	100.0	180			
Mátra	Hungary	1967	763	100.0	763	51.0	389	EnBW, MVM		49.0
<b>Total lignite</b>			<b>11,059</b>		<b>11,059</b>		<b>10,685</b>			
<b>Nuclear</b>										
KKW Emsland	Germany	1988	1,336	87.5	1,336	87.5	1,169	E.ON		12.5
Gundremmingen B	Germany	1984	1,284	75.0	1,284	75.0	963	E.ON		25.0
Gundremmingen C	Germany	1984	1,288	75.0	1,288	75.0	966	E.ON		25.0
<b>Total nuclear</b>			<b>3,908</b>		<b>3,908</b>		<b>3,098</b>			
<b>Hard coal</b>										
Gersteinwerk Werne Kv2	Germany	1984	620	100.0	620	100.0	620			
GW Bergkamen A	Germany	1981	720	100.0	720	100.0	720			
Ibbenbüren	Germany	1985	794	100.0	794	100.0	794			
Westfalen E	Germany	2014	764	100.0	764	100.0	764			
Eemshaven A	Netherlands	2014	777	100.0	777	100.0	777			
Eemshaven B	Netherlands	2014	777	100.0	777	100.0	777			
Amercentrale ST 9	Netherlands	1993	503	100.0	503	100.0	503			
Aberthaw B	UK	1971–1979	1,560	100.0	1,560	100.0	1,560			
<b>Total hard coal (without contractually secured power plants)</b>			<b>6,515</b>		<b>6,515</b>		<b>6,515</b>			

As of 31 December 2016



# RWE power plant portfolio (continued)

Power plant	Country	Commissioned	Net capacity		RWE's legal consolidation stake		RWE's economic stake		Partner	Stake in
			MW	%	MW	%	MW	%		
<b>Gas</b>										
Emsland B, C, D	Germany	1973/74, 2010/12	1,837	100.0	1,837	100.0	1,837			
Gersteinwerk F – I	Germany	1973	1,285	100.0	1,285	100.0	1,285			
Gersteinwerk Werne Kv1	Germany	1984	112	100.0	112	100.0	112			
Weisweiler VGT G, H	Germany	2006	544	100.0	544	100.0	544			
Bochum	Germany	2004	21	100.0	21	100.0	21			
Dortmund	Germany	2004	26	100.0	26	100.0	26			
GuD Dormagen	Germany	2000	326	100.0	326	100.0	326			
GuD Dormagen	Germany	2000	260	100.0	260	0.0	0	Bayer AG		100.0
Moerdijk	Netherlands	1996	339	100.0	339	100.0	339			
Moerdijk 2	Netherlands	2012	426	100.0	426	100.0	426			
Inesco (Antwerpen)	Belgium	2007	133	100.0	133	100.0	133			
Clauscentrale A (gas/oil)	Netherlands	1977	610	100.0	610	100.0	610			
Clauscentrale C	Netherlands	2012	1,304	100.0	1,304	100.0	1,304			
Swentibold CC	Netherlands	1999	245	100.0	245	100.0	245			
Elsta CC	Netherlands	1998	405	25.0	0	39.5	160	AES, Delta		75.0
Great Yarmouth	UK	2001	398	100.0	398	100.0	398			
Little Barford	UK	1994	727	100.0	727	100.0	727			
Didcot B	UK	1996-1997	1,440	100.0	1,440	100.0	1,440			
Staythorpe	UK	2010	1,740	100.0	1,740	100.0	1,740			
Pembroke	UK	2012	2,181	100.0	2,181	100.0	2,181			
Phillips Petroleum	UK	1999	55	100.0	55	100.0	55			
Cheshire	UK	2000	40	100.0	40	100.0	40			
Cheshire East	UK	2016	6	100.0	6	30.0	2	Aggreko		
Hythe	UK	2005	56	100.0	56	100.0	56			
Whitegate	Ireland	1998	6	100.0	6	100.0	6			
Mátra	Hungary	2007	60	100.0	60	51.0	31	EnBW, MVM		49.0
Denizli	Turkey	2013	787	100.0	787	70.0	551	Turcas		30.0
<b>Total gas</b>			<b>15,369</b>		<b>14,964</b>		<b>14,595</b>			

As of 31 December 2016



# RWE power plant portfolio (continued)

Power plant	Country	Commissioned	Net capacity		RWE's legal consolidation stake		RWE's economic stake		Partner	Stake in
			MW	%	MW	%	MW	%		
<b>Oil</b>										
OCGTs (gas oil, various sites)	UK		264	100.0	264	100.0	264			
Grimsby (gas oil)	UK		18	100.0	18	50.0	9	Aggreko		
<b>Total oil</b>			<b>282</b>		<b>282</b>		<b>273</b>			
<b>Renewables</b>										
Various sites (hydro run-of-river)	Germany		17		17		17			
Linne HH 1-4 (hydro run-of-river)	Netherlands	1989	11	100.0	11	100.0	11			
Amercentrale ST 9 (biomass)	Netherlands	1993	140	100.0	140	100.0	140.0			
Markinch (biomass)	UK	2014	55	100.0	55	100.0	55			
Mátra (solar)	Hungary		16	51.0	16	51.0	8	EnBW, MVM		49.0
<b>Total renewables (without contractually secured power plants)</b>			<b>239</b>		<b>239</b>		<b>231</b>			
<b>Other</b>										
MHKW Karnap (waste incineration)	Germany	1987	38	100.0	38	100.0	38			
Köpchenwerk (pump storage)	Germany	1989	165	100.0	165	100.0	165			
MVA Weisweiler	Germany	1996	24	100.0	24	100.0	24			
SRS Ecotherm	Germany	2003	1	100.0	1	100.0	1			
<b>Total other</b>			<b>228</b>		<b>228</b>		<b>228</b>			

As of 31 December 2016



# RWE power plant portfolio (continued)

Power plant	Country	Commissioned	Net capacity		RWE's legal consolidation stake		RWE's economic stake		Partner	Stake in
			MW	%	MW	%	MW	%		%
<b>Contractually secured plants<sup>1</sup></b>										
Voerde A+B (hard coal)	Germany		1,390	100.0	1,390	100.0	1,390			
Other hard coal	Germany		1,958	40.0	783	35.0	689			
Neckar (water run-of-river)	Germany		29	100.0	29	100.0	29			
Rhein-Main-Donau (water run-of-river)	Germany		10	100.0	10	100.0	10			
Kaunertal (pump storage)	Austria		360	44.4	160	44.4	160			
Schluchsee (pump storage)	Germany		1,740	50.0	870	50.0	870			
SEO Vianden (pump storage)	Germany		1,291	100.0	1,291	100.0	1,291			
T-Power	Netherlands		416	0.0	0	100.0	416			
EPZ-Nuclear	Netherlands		485	30.0	146	30.0	146			
EPZ-Wind	Netherlands		24	30.0	7	30.0	7			
<b>Total contractually secured plants</b>			<b>7,703</b>		<b>4,686</b>		<b>5,009</b>			
<b>Total RWE stand alone</b>			<b>45,302</b>		<b>41,880</b>		<b>40,634</b>			

As of 31 December 2016 | <sup>1</sup> Plants where RWE has a contractual right to the generation through long-term agreements

# Overview of capacity measures

Measure	Plant	MW <sup>1</sup>	Fuel	Location	Date
Decommissioning	Goldenbergwerk	110	Lignite	DE	Q3-2015
	Amer 8	610	Hard coal	NL	Q1-2016
	Westfalen C	285	Hard coal	DE	Q1-2016
	Mid-size units	190	Gas	NL	Q4-2016
	Voerde A/B	1,390	Hard coal	DE	Q1-2017
	Gersteinwerk K2	610	Hard coal	DE	Q1-2019
Mothballed <sup>2</sup>	Claus A	610	Gas	NL	Q1-2012
	Weisweiler H	270	Topping gas turbine	DE	Q3-2013
	Weisweiler G	270	Topping gas turbine	DE	Q3-2013
	Gersteinwerk F	355	Gas – steam turbine	DE	Q3-2013
	Gersteinwerk G	355	Gas – steam turbine	DE	Q2-2014
	Claus C	1,300	Gas	NL	Q3-2014
	Moerdijk 1	339	Gas	NL	Q1-2018
	Moerdijk 2	430	Gas	NL	Q1-2018
Termination of contracts	Confidential	2,960	Hard coal	DE	Q4-2013 – Q2-2015
Stand-by reserve <sup>3</sup>	Frimmersdorf P & Q	560	Lignite	DE	Q4-2017
	Niederaußem E & F	590	Lignite	DE	Q4-2018
	Neurath C	290	Lignite	DE	Q4-2019
<b>Total</b>		<b>11,524</b>			

<sup>1</sup> Net nominal capacity, rounded | <sup>2</sup> In times of market tightness mothballed plants might return temporarily to the system | <sup>3</sup> Capacity will be decommissioned after 4 years in the reserve



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