

uni per

Deep Dive –
European Generation
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09 October 2017

Agenda – European Generation

1. Electricity market trends
2. European Generation portfolio
3. Financial performance
4. Profit drivers for the business
5. Prospects



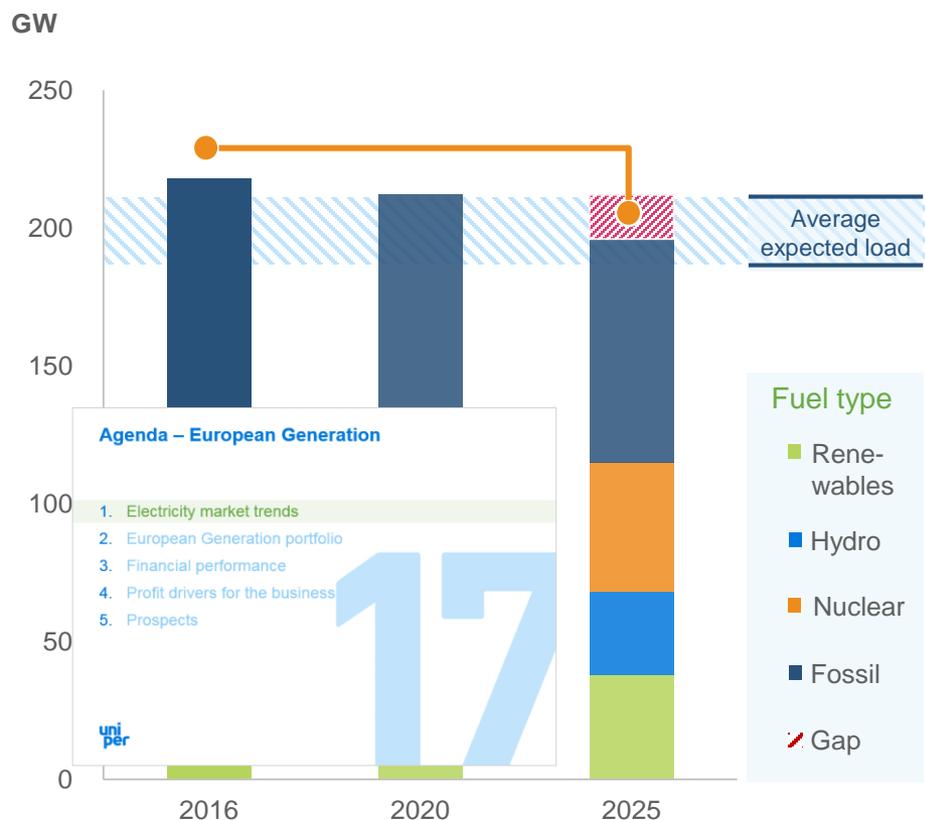
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North-western European power markets tightening

Reliable capacities in North-western Europe¹



Key highlights

Capacity squeeze

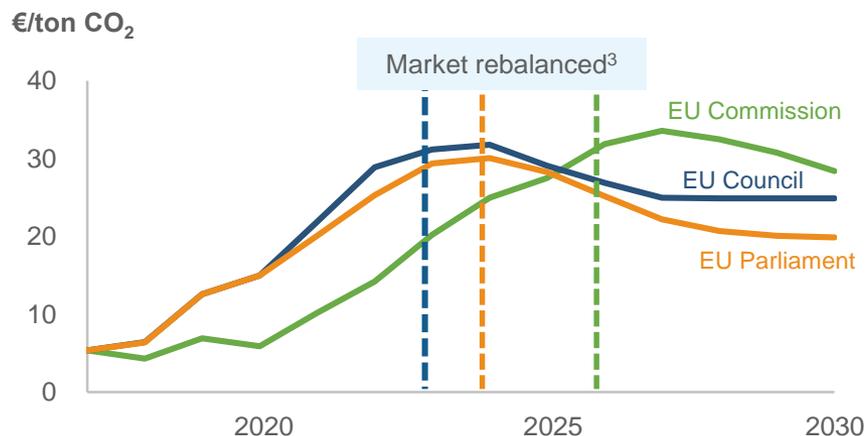
- Germany: nuclear exit until 2022 (11 GW), lower lignite capacity (3 GW)
- Belgium: planned nuclear exit until 2025 (up to 6 GW)
- France: potentially heavy squeeze in nuclear power contribution (up to 19 GW)
- Several coal exit plans within Europe

Market implications

- Towards 2025 no room left for unplanned outages and above avg. winter demand spikes
- Renewables will not fill the gap in reliable capacities
- Sizeable number of new gas power stations and grid extension needed beyond 2022
- Plant utilization expected to increase

EU ETS – tighter rules and high probability for higher prices

Estimated price impact of positions in ‘Trilogue’¹



Key highlights

Tighter ETS rules for 2021 - 2030

- New rules for 4th trading period set to reduce oversupply in the early 2020s
- Outcome of ‘Trilogue’ procedure heading towards a faster cut in oversupply

Market implications

- First market reaction visible in the current EU carbon price
- Carbon price important lever on north-western and Nordic power price

Close to agree on a tighter ETS rules (24% transfer rate into MSR within 2019-2023)

	Transfer rate into Market Stability Reserve (MSR)	Supply reduction (after 2020)	Cancellation of allowances
1 EU Commission	12%	2.2% p.a.	None
2 EU Parliament	24% in 2019-2022, 12% thereafter	2.2% p.a.	One-off 800m tons
3 EU Council	24% in 2019-2023, 12% thereafter	2.2% p.a.	Permanent mechanism ²

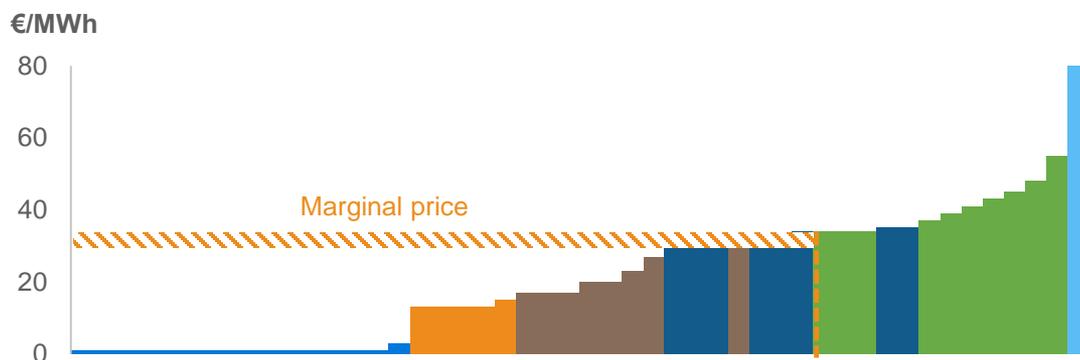
1. Source: ICIS Tschach Long-term Price Forecast as of August 28, 2017.

2. Yearly cancellation from 2024 onwards in relation to respective annual emissions, >~2bn tons cancellation in 2024 forecasted + additional volumes in later years.

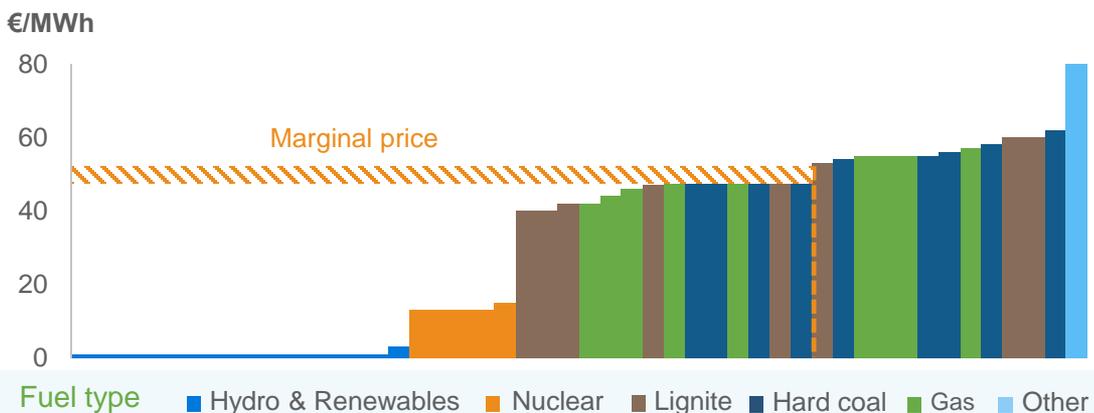
3. Market assumed to be in balance when supply is within range where Market Stability Reserve becomes inactive, i.e. between 400m and 833 m tonnes.

Revised ETS regime could be a main driver for generation earnings

German merit order at current CO₂ price



German merit order at €30 CO₂ price¹



Key highlights

Current status

- Current ETS regime does not give the intended price signals
- Coal in Central Europe acting as price setter

Hypothetical outcome with higher carbon price

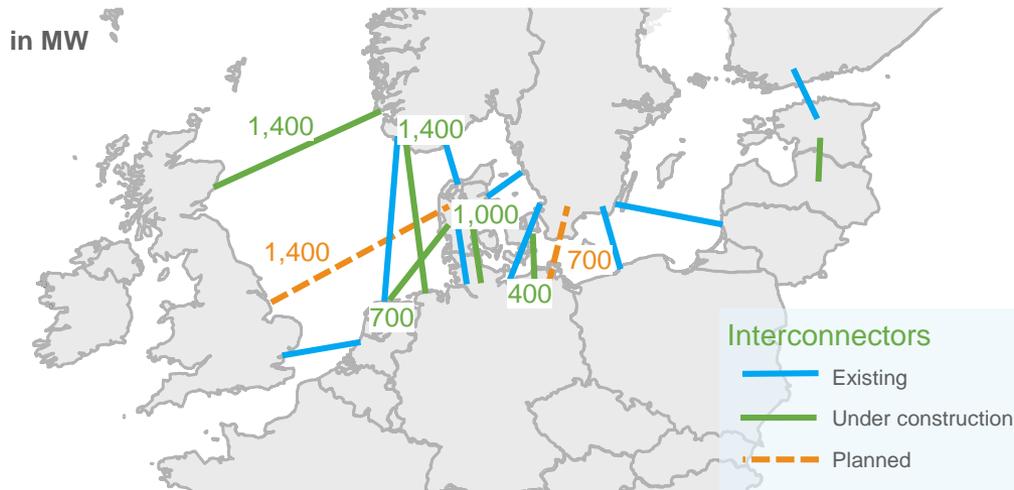
- Gas plants climbing up the merit order
- Coal still often acting as price setter
- Strong upside lever on wholesale price

Impact on Uniper

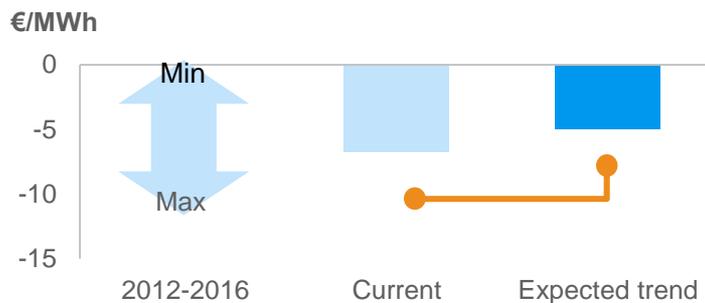
- Uniper's outright portfolio with clear upside
- Fossil portfolio with limited impact – positives and negatives widely level out

Spread between Nordic and north-western Europe to narrow

Interconnector capacities



Price gap between Nordic and north-western Europe¹



Key highlights

Interconnector capacity doubling

- Current interconnector capacity into Nordic c.6 GW
- Planned new-builds of c.6 GW until 2025
- First Germany – Norway link by 2020
- First UK – Norway link by 2022

Market implications

- Decline of discrepancy between Germany and Nordic
- Expecting higher price in Nordic market

Impact on Uniper

- On balance positive effects expected
- Nordic outright fleet should clearly benefit

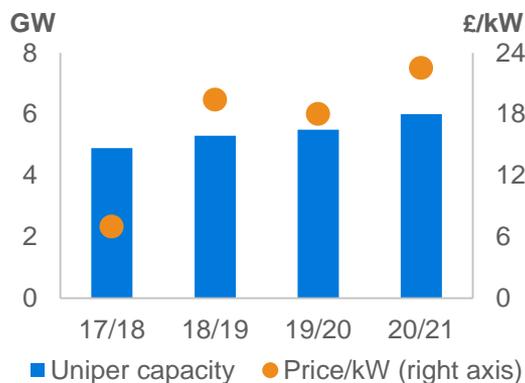
Growing willingness to reward availability of dispatchable capacity

Capacity market and strategic reserve schemes

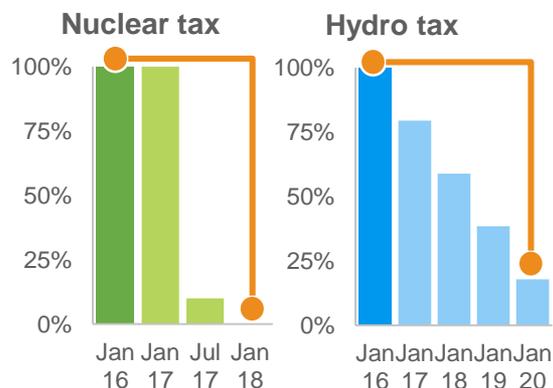


- Capacity market schemes
- Strategic reserve schemes

UK capacity market auctions



Swedish taxes reduced



Key highlights

Strategic reserve schemes

- German winter reserve remuneration remains inadequate
- Sweden's TSO secures Uniper plant for strategic reserve

New capacity market schemes

- UK secures generation capacities from October 2017 onwards
- France embarked on capacity market for 2017

Energy taxes reduced

- Swedish government secures existing generation base by reducing tax burdens

Market trends – key messages



- Tighter markets ahead

- Promoting a more interconnected market
- Working on a revival of ETS market regime

- Putting security of supply on political radar
- Reduction of carbon intensity (via coal)
- More market based support of renewable energy

- Upward pressure on prices

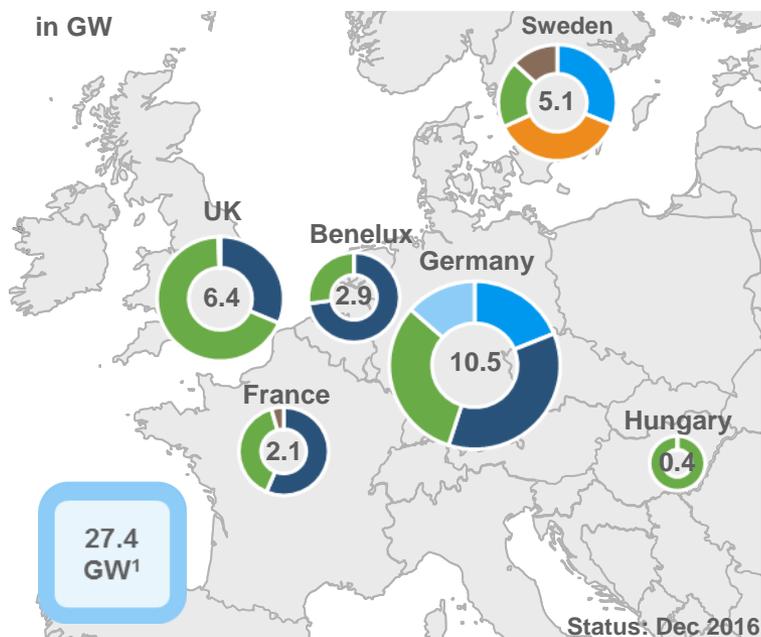
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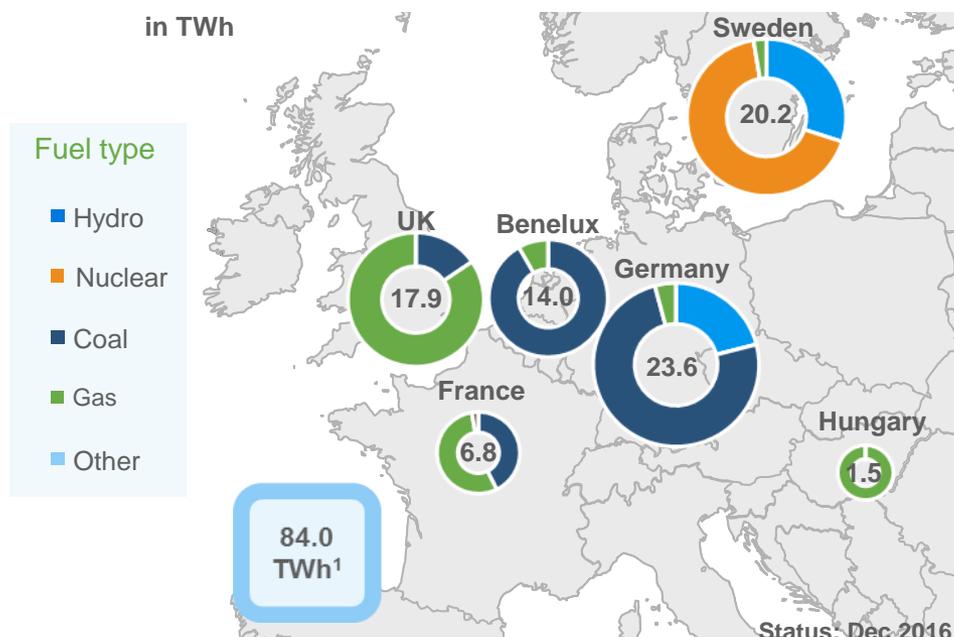


A well-balanced and regionally diversified generation portfolio

Net capacity by country and fuel type



Electricity production by fuel type



Key message

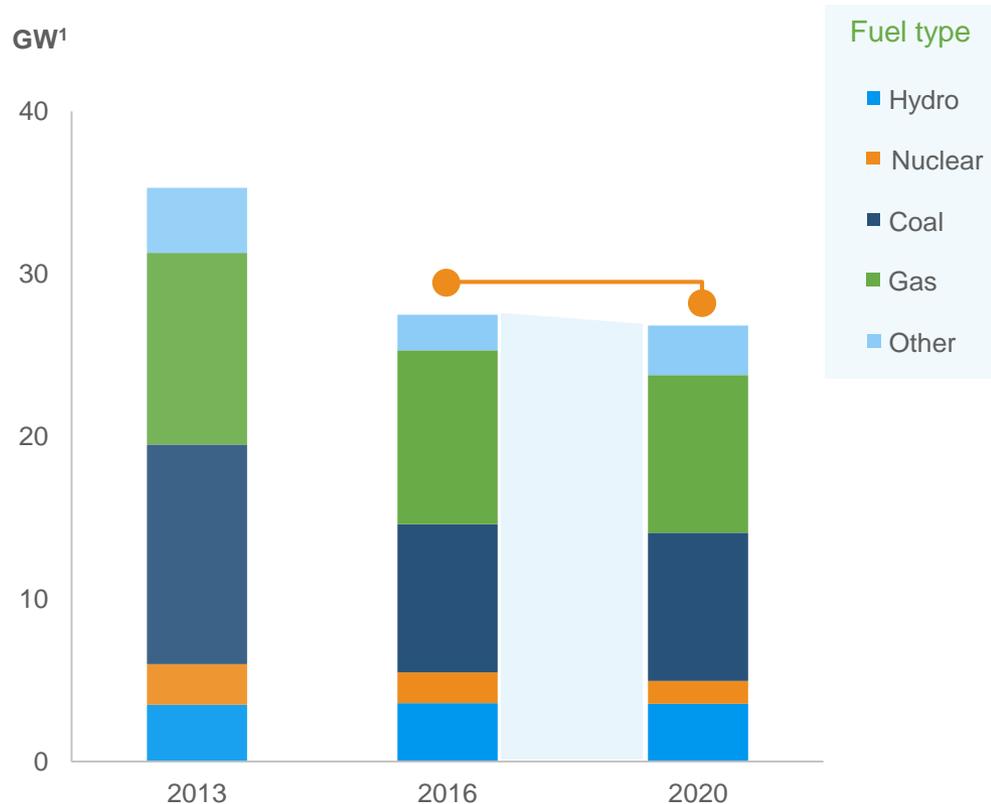
- North-western Europe is our home turf
- Representing the markets with the clearest upside price lever within Europe

Key message

- Strong volumes in most of our core markets
- German utilization leaves clear upside once market metrics are changing

Portfolio clean-up almost complete

European Generation – Existing capacity and future trends



Key highlights

Closure plans widely executed

- Closure plans of coal plants fully executed until mid of 2017
- Closure of some old oil plants in Germany envisaged

Portfolio stability until 2020

- Datteln 4 coal plant close to be up and running
- Planned mothballing or phase-off of gas plants blocked by regulator

Portfolio in good shape

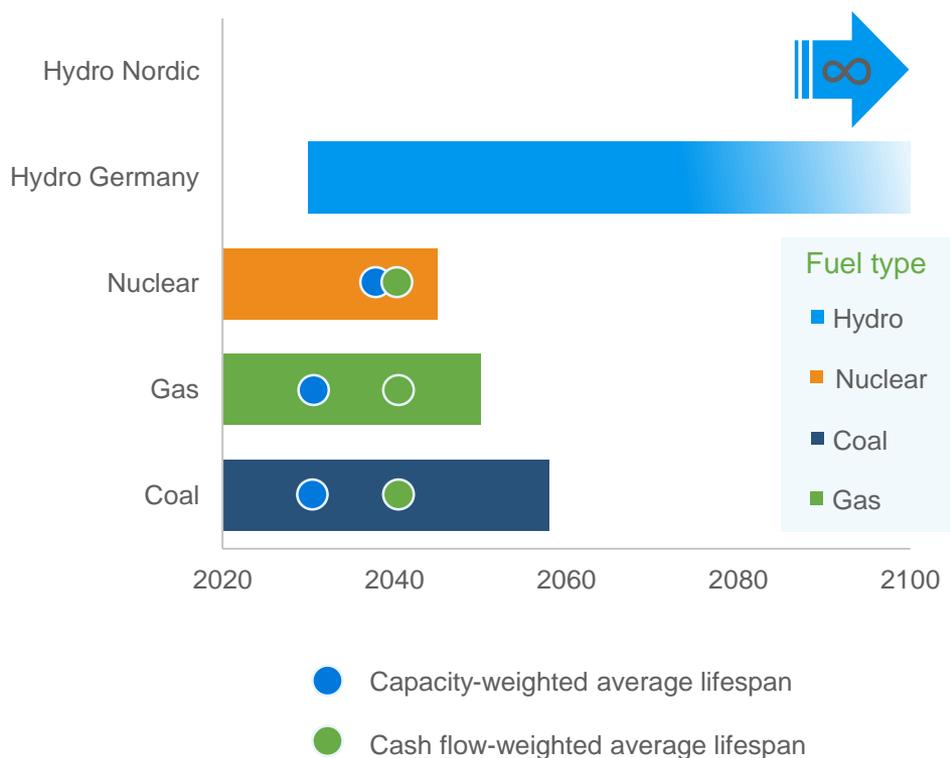
- All plants cash flow positive
- Exception is related to our coal plants in France

Playing the optionality

- Gas capacities prepared to benefit from security-of-supply needs

Long remaining lifespans across main fuel types

Technical lifespan, expiry of concessions and economic lifespans by fuel type from 2020 to 2100+



Key highlights

Hydro fleet

- Lifespan for Swedish hydro plants ad infinitum – no expiry of concessions
- German hydro – current concessions largely expire between 2030 and 2050 – extension feasible

Nuclear fleet

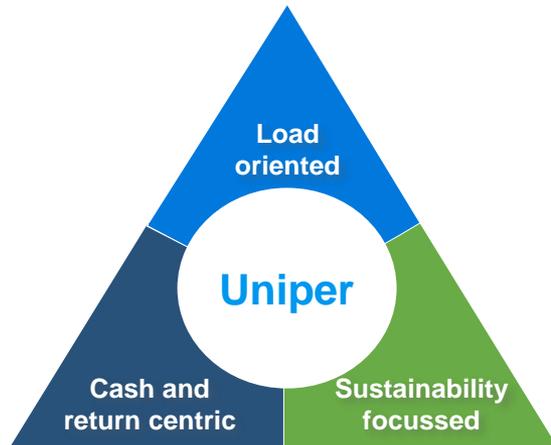
- Oskarshamn 1 (OKG) off-grid since June 2017
- OKG 3 with concession up to 2045
- Minority owned Forsmark 1,2,3 and Ringhals plants 3,4 plants with concessions up to early 2040ties

Fossil fleet (Coal/Gas)

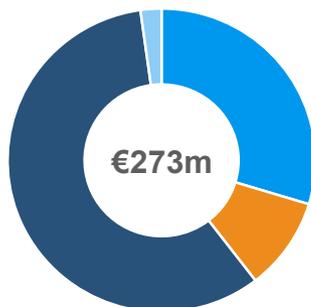
- Gas fleet with CF-weighted lifespan until end 2030ties
- Coal fleet with CF-weighted avg remaining technical life well into the early 2040s

Operational excellence – Strict optimization of maintenance capex

Valued-driven maintenance capex



Maintenance capex – Split 2016



Type

- Hydro
- Nuclear
- Fossil
- Other

Key highlights

Successful change in approach

- Lower sustainable investments levels for maintenance and replacement
- Major positive impact by switching from standard periods to load oriented maintenance investment

Focus on security and reliability

- Core to focus on inverse relationship between investments and risks
- Security for staff, for reliability and focus on environment comes first

European Generation portfolio strength – key messages

Home turf

- Operating in European markets with strongest upside price drivers

Portfolio mix

- Balanced mix of stable non-wholesale earnings and optionality from reviving market prices

Portfolio lifespan

- Portfolio with an essential share of power plants with long residual lifespan

Sustainability

- Sizeable CO₂ free generation sources

Operational excellence

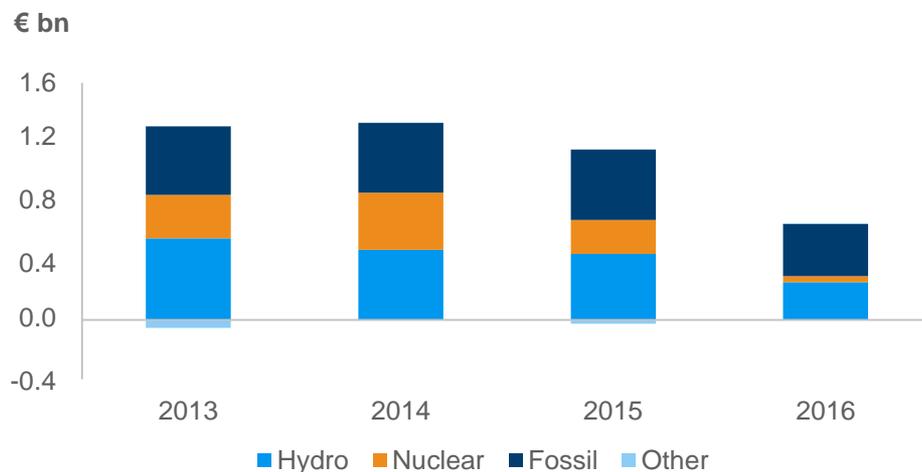
- Optimized capex plans and improved reliability of plants

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Earnings hit trough in 2016

European Generation – Sub-segment EBITDA 2013 - 2016



European Generation: Segment EBIT(DA) 2013 - 2016

€m	2013	2014	2015	2016
EBITDA	1,254	1,331	1,125	654
EBIT	504	539	506	126

Key highlights

Outright prices

- Outright power prices heavily down between 2013 and 2016 for
 - Germany: c.59 €/MWh to c.37 €/MWh
 - Nordic: c.44 €/MWh to c.33 €/MWh

Dark and spark spreads (CDS, CSS)

- Spread overall turned to the negative between 2013 and 2016
 - Germany: CDS halved, CSS reviving
 - NL: CDS clearly down, CSS improving
 - F: CDS stable, CSS clearly reviving
 - UK: CDS tumbled, solid CSS improving

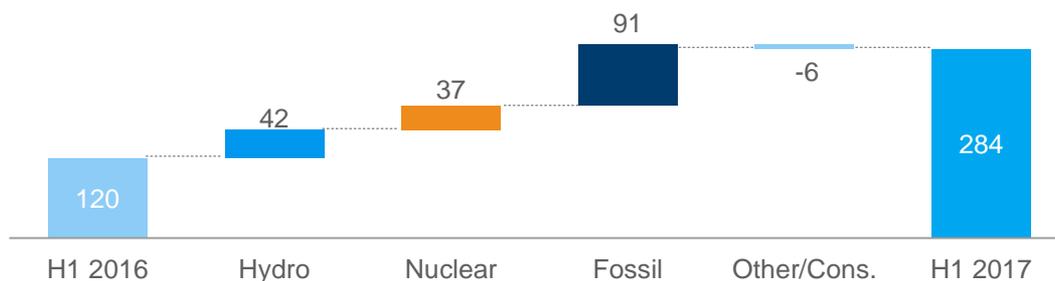
Strategic decisions for optimization

- Several cost cutting initiatives embarked upon
- Phasing-out cash flow negative plants
- Shutdown concentrating on coal plants and two nuclear plants in the Nordic market

H1 2017 – Increase across all activities

Adj. EBIT development by sub-segment in H1 2017

€m



Adj. EBIT(DA) in H1 2017

€m	EBITDA H1 2017	EBIT H1 2017
Hydro	169	141
Nuclear	77	45
Fossil	288	125
Other/Consolidation	-27	-27
Total	507	284

Main effects

Hydro fleet ■

- (+) Lapse of 2016 restructuring one-off

Nuclear fleet ■

- (+) Positive volume effects:
 - Ringhals 2 back in operation
 - Shift of Oskarshamn 3 maintenance into Q3
 - Oskarshamn 1 running flat out on finishing straight
- (-) Lower achieved prices

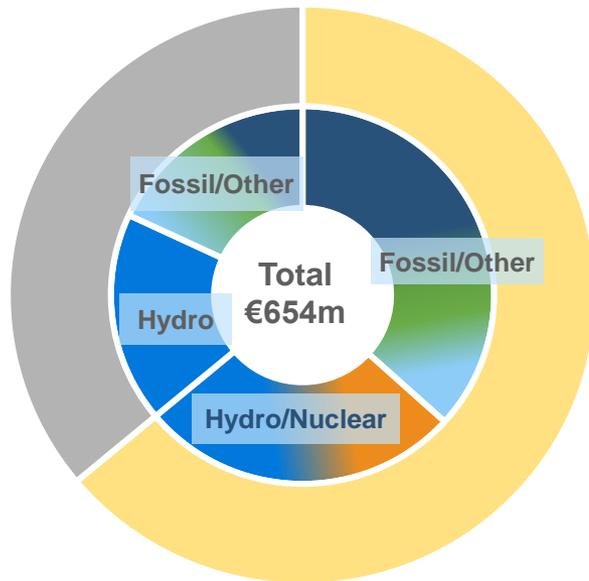
Fossil ■

- (+) Lower depreciation
- (+) Cost savings
- (-) Further pressure on spreads

Attractive mix of stable and market driven elements

European Generation – EBITDA split 2016

Non-wholesale



Share of total

Fuel type

- Hydro
- Nuclear
- Coal
- Gas
- Other

Wholesale

Key highlights

Balanced earnings mix

- Stable ~60% / ~40% wholesale / non-wholesale earnings mix over the last three years
- Quality of earnings will improve with rising non-wholesale earnings streams

Non-wholesale earnings

- Solid and stable earnings contribution by hydro business
- Earnings of fossil/other business impacted by one-offs

Wholesale earnings

- Earnings of outright fleet impacted by lower hedged prices
- Growing earnings contribution from our international fossil business

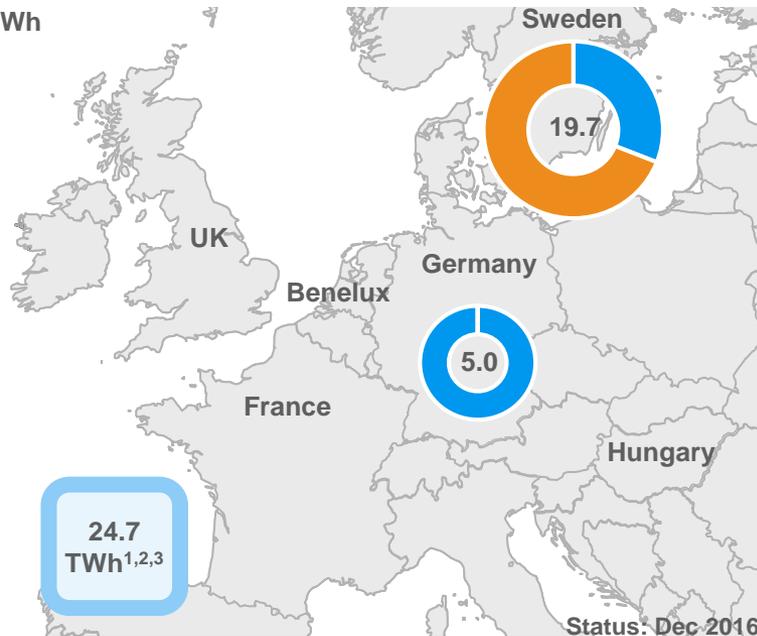
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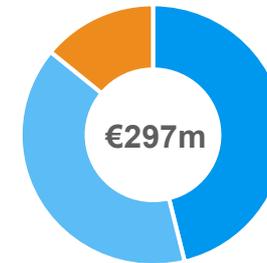
Profitable outright portfolio

Portfolio – Outright fleet

in TWh



Outright fleet – EBITDA split 2016



■ Hydro Germany² ■ Hydro SWE ■ Nuclear SWE

Key highlights of 2016

Hydro

- Impacted by lower power prices
- Negative volume effect due to dry period in Sweden
- Provisioning for restructuring program burdens

Nuclear

- Impacted by lower power prices
- Additional provisioning following regular reassessment of our long-term obligations

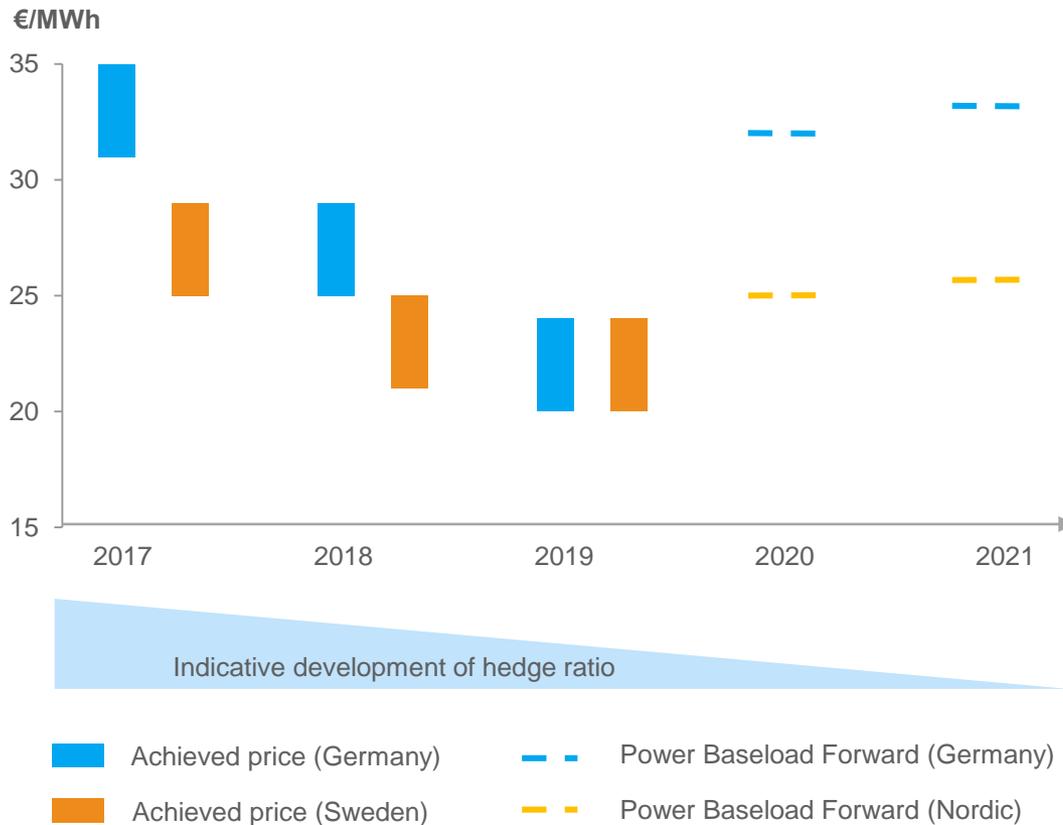
1. Accounting view.

2. Hydro Germany includes non-wholesale related business (2.3 TWh; EBITDA: €0.1bn).

3. Excluding hydro LTCs in connection with assets in Austria and Switzerland.

Outright portfolio with price upside into 2020

Outright position – Baseload power price¹



Key highlights

Price drivers

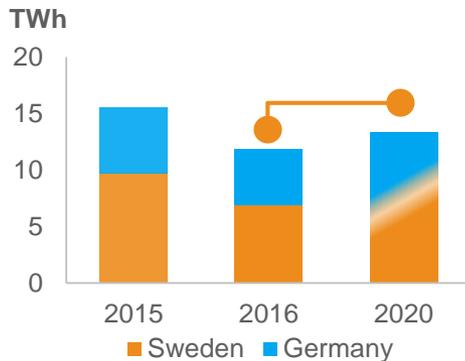
- Coal prices remain a key driver
- Carbon prices should revive as an essential price factor driver with adjusted EU regulations
- Impacts from structural price effects with tightening of electricity supplies looming

Uniper's hedging policy with some flexibility

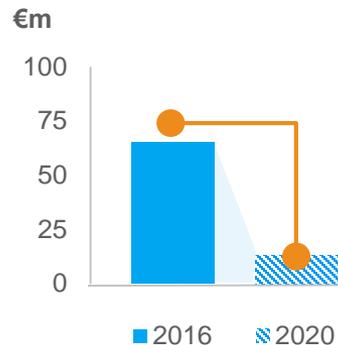
- Uniper in principle sticks to a conservative hedging approach
- Improved financial base giving more flexibility

Hydro earnings at turning point

Volumes^{1,2}



Swedish hydro tax lowered



Earnings lever 2020 vs 2016



- Better volumes due to efficiency gains and with normalized hydrology
- Lower hydro property tax in Sweden
- Cost cuts
- Stable non-wholesale earnings



- Drop in average hedged prices

Earnings trend 2020 vs 2016



Key highlights

Upside for output

- Efficiency measures widely advanced
- More volume in an average hydro year

Cost relief

- c.80% lower property tax in Sweden
- Important cost cutting initiated
- Capex optimization executed

Premium assets

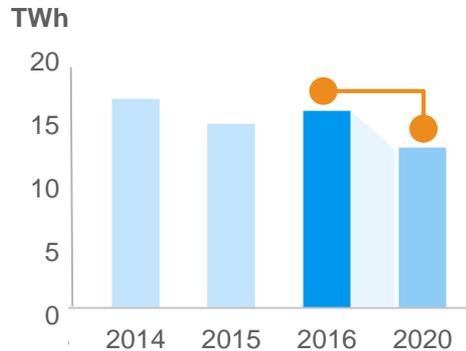
- Actively managing risk to achieve premium vs. wholesale price
- LTC contracts with long duration
- Small hydro in Germany benefitting from EEG

Long-term earnings lever

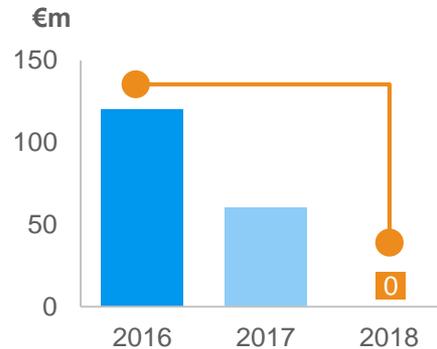
- Large part of the fleet with strong sensitivity on market prices
- Some downside protection from LTC business

Prospects of nuclear fleet improving

Volume¹



Lower nuclear tax relieves costs



Earnings lever 2020 vs 2016



- Omission of nuclear tax
- Lapse of large one-off effect (new KAF-related provision in 2016)
- Cost cuts



- Drop in avg hedged prices
- Lower volume following phase-out

Earnings trend 2020 vs 2016



Key highlights

Volumes down, availability up

- Improved availabilities in remaining units
- Volume down with closing of OKG 1 in mid 2017; Ringhals 2 out in mid 2019 and Ringhals 1 in mid 2020
- Safety update of OKG 3 planned for 2020, enables operations to 2045

Nuclear tax abolished

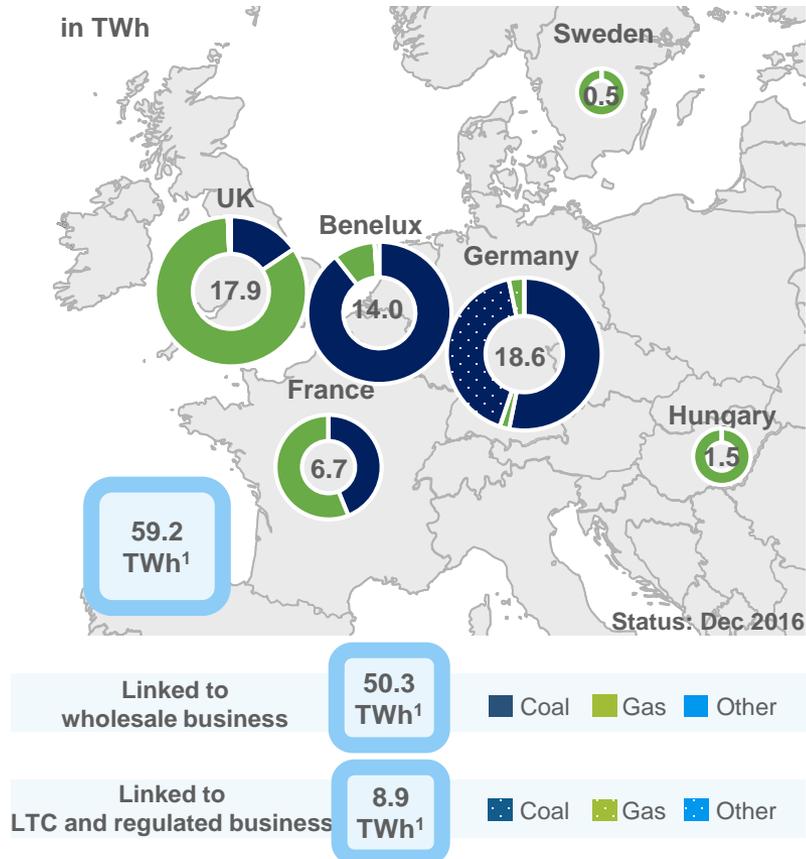
- 90% reduction in July 2017
- Tax completely abolished in Jan. 2018

Long-term earnings lever

- Market price increase directly translates in equivalent EBITDA effect for nuclear

Spread fleet with heterogeneous set of price drivers

Portfolio – Spread fleet



Key highlights

UK – mixed trend

- Market generally more balanced between coal and gas
- Capacity market reduced the markets risk premium
- Recently dark spreads significantly under pressure
- Coal plant Ratcliffe most modern UK coal plant

Germany – limited spread exposure

- In current carbon prices hard coal mostly price setter
- Uniper coal fleet competitive
- Gas plants still largely out of the money

France – improved spreads

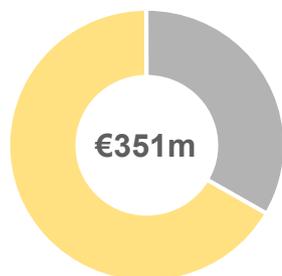
- Uncertain availability of nuclear and hydro supportive
- Our fleet linked to mid load and peak load prices

Benelux – very solid dark spreads

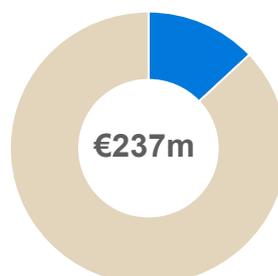
- Like in Germany hard coal is price setting
- Key asset is Maasvlakte 3 plant which is running base load

Spread fleet stabilizing in weak spread environment

Fossil fleet – EBITDA split 2016 Fossil – Wholesale EBITDA 2016



■ Wholesale ■ Non-wholesale



■ Germany ■ International

Earnings lever 2020 vs 2016¹



- France with good spreads
- Germany with better spark spreads
- Cost cuts



- NL with phase-out of old Maasvlakte 1+2 coal plants
- UK with low spreads due to launch of capacity market scheme

Earnings trend 2020 vs 2016¹



Key highlights

Spread fleet

- 85% of volumes related to wholesale business
- Non-wholesale share dominated by LTC business
- Weak dark and spark spreads

Country mix

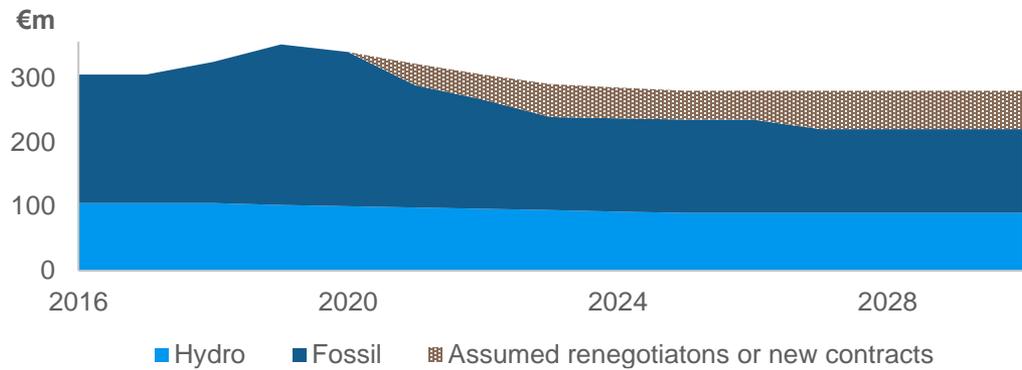
- German business dominated by LTC business with good margins
- International earnings contribution mainly coming from NL and France

Long-term earnings lever

- Tighter markets should lead to better spreads
- Coal exit in Europe should raise utilization of gas plants

Long-term contracts as stable earnings generator

LTCs – EBITDA contribution long-term



Earnings lever 2020 vs 2016



- Datteln 4 coal plant on track for delivery from H1 2018 on
- Hydro as stable contributor



- Some LTCs expire

Earnings trend 2020 vs 2016



Key highlights

Business benefits from delivering tailor-made energy

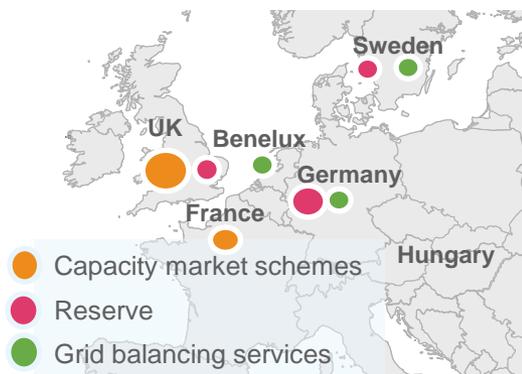
- Delivering energy within integrated energy hubs
- More than 90% of LTC EBITDA generated within Germany
- German coal plants as main suppliers to industrial customers
- German hydro involved in LTC business (e.g. to German Railways) and EEG-related business

Long-term earnings lever

- Earnings based on many different sources
- Datteln 4 plant as main contributor
- Hydro as stable contributor until 2030 and beyond

Regulated business of increasing importance

Importance of services



Earnings lever 2020 vs 2016

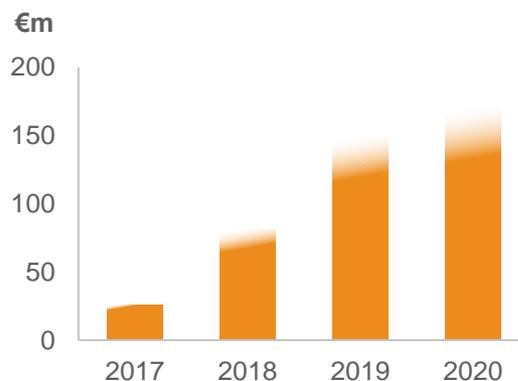


- UK capacity market regime as strongest lever
- Optimization measures



- No clarity on an adequate grid remuneration in Germany

Capacity markets – EBITDA



Key highlights

Capacity market mechanism as major earnings driver

- Contribution of UK capacity markets as most essential earnings driver

Reserve markets weak but with upside potential

- Uniper's southern German plants the main contributor to grid reserve
- Germany grid reserve remuneration still inadequate

Limited contribution from grid balancing

- Solid market share in a competitive market environment

Long-term earnings lever

- Higher rewards for existing fossil fleet with tighter markets
- New service offers

Earnings trend 2020 vs 2016



Attractive additional earnings streams

French wind & solar assets

- 94 MW capacity of renewables
- Contracted on long-term in France based on 11 contracts
- Last contracts expire in 2031

Maasvlakte 3 – Energy hub

- Steam, cooling water and other products are delivered to the customer provided by MPP3 and auxiliary assets
- Uniper receives waste from its customer to be combusted in MPP3
- Capacity fee and variable cost compensation
- Contract until 2031

Wood pellets co-firing

- Wood pellets and meat bone meal to replace c.15% of coal feed-in
- Benefits from subsidy regime guaranteed for eight years
- Full commissioning expected in Q4 2018

Delivering middle double-digit million Euro earnings

Outright and spread portfolio – key messages

Outright fleet

- Strong beneficiary of market price recovery
- Hydro with flexible fleet in good markets and locations
- Nuclear rebuilding its business case with political support

Spread fleet

- Support from spread revival
- International spread fleet mainly linked to wholesale market, German fleet less exposed due to LTC related business

LTC business

- Will remain an essential earnings contributor of our German portfolio
- A noticeable part of earnings streams are secured over the next ten years and longer

Regulated business

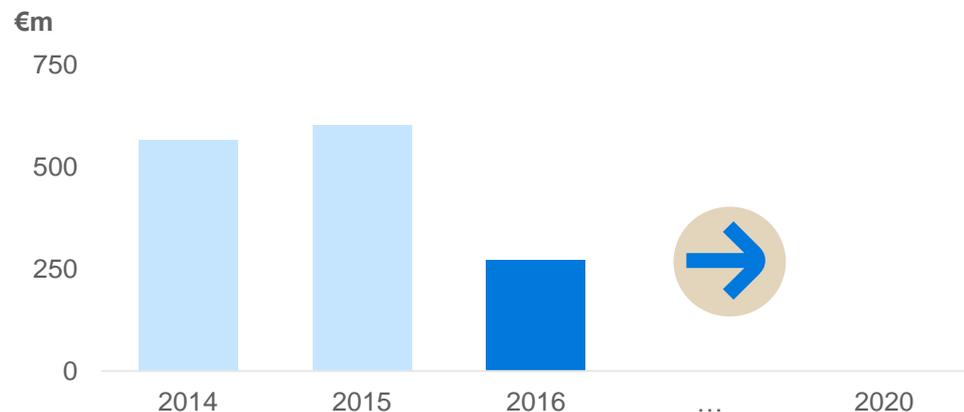
- Strong earnings driver with launch of capacity market regimes
- German portfolio includes optionality to commercialise assets better

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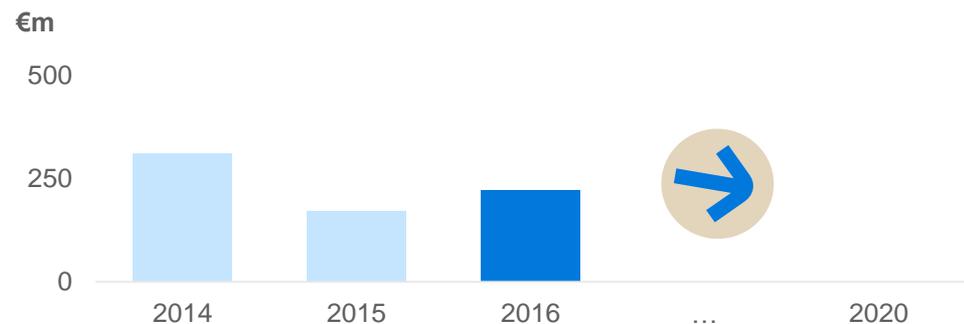
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Disciplined capex policy

European Generation – Maintenance capex¹



European Generation – Growth capex



Key highlights

Maintenance capex benefits from revised policy

- Stable maintenance capex planned
- Safety rates and availability levels planned to be raised further

Growth capex down with finalization of Datteln 4 investment

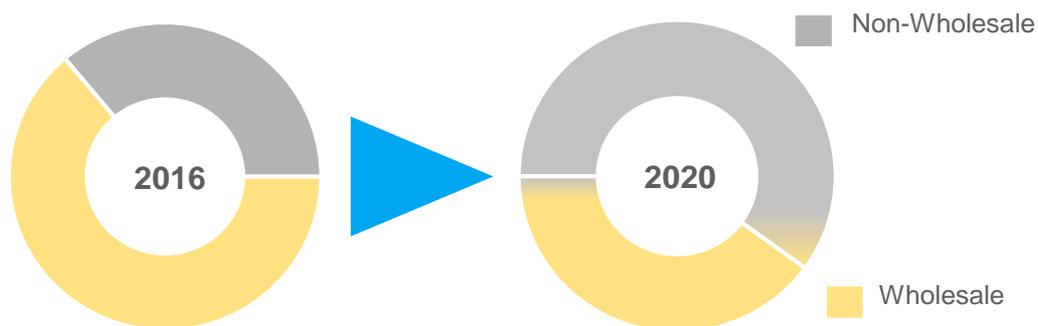
- Current growth plan with finalisation of Datteln 4 plant (c.€0.3bn in 2017/18) widely executed
- Largest upcoming project is the safety upgrade of the Swedish nuclear plant Oskarshamn 3 (<€0.1bn)

Visible earnings growth

European Generation – Main earnings triggers until 2020



European Generation – Indicative EBITDA split



Key highlights

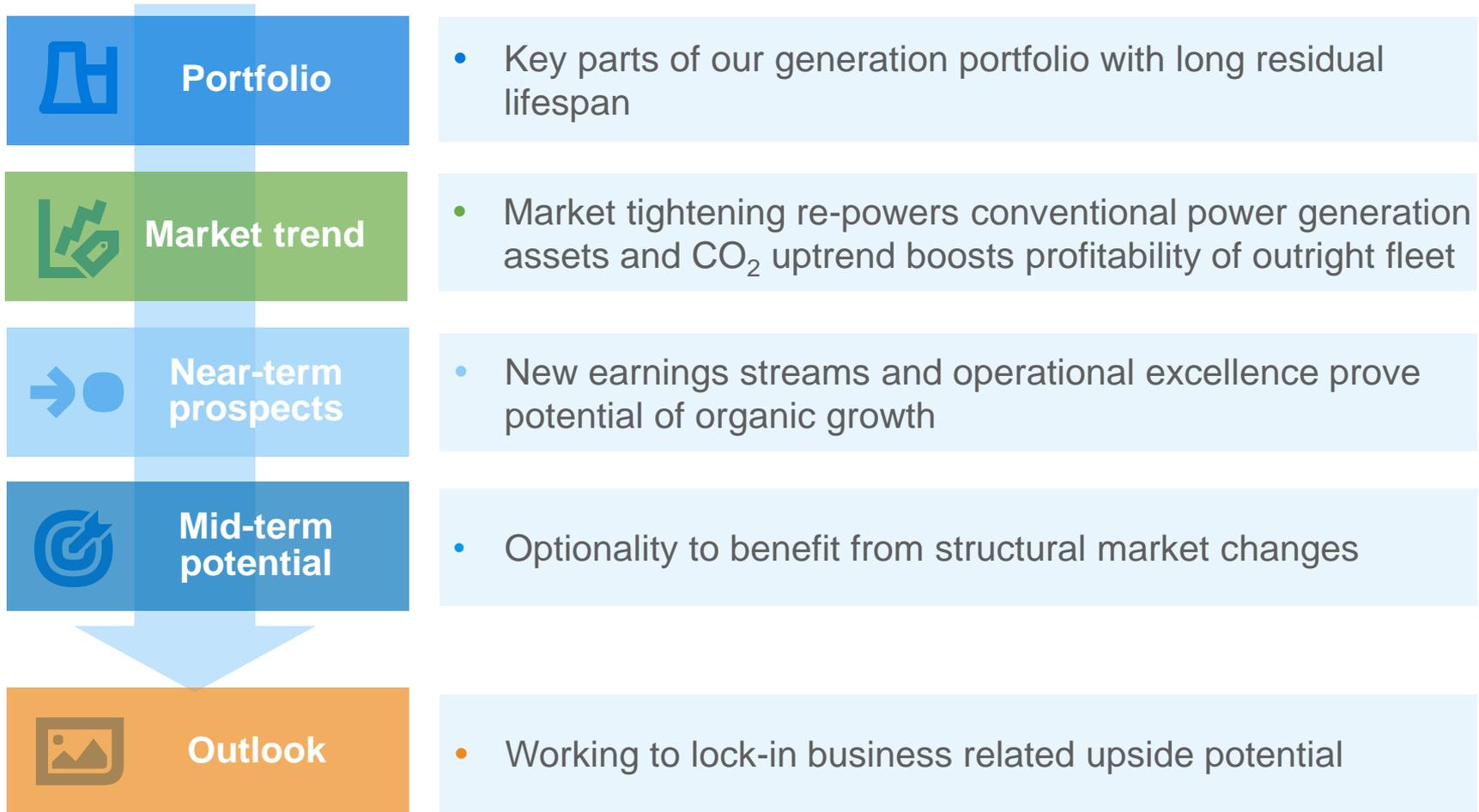
Quality of earnings improving

- Non-wholesale business as main earnings driver with capacity payments and rising LTC contribution
- Stable wholesale earnings despite weaker hedged outright prices
- Cost cutting effects showing up

Long-term earnings lever

- Outright fleet with strongly linked to wholesale price trend
- Net beneficiary of higher CO₂ prices
- Fossil fleet with optionality based on expected revival of spreads and introduction of new security-of-supply schemes

Key elements of the story



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