



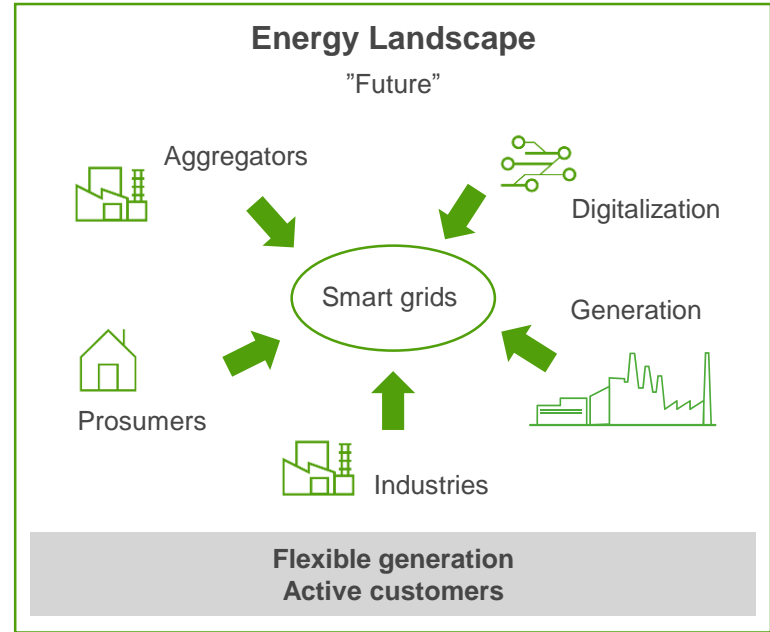
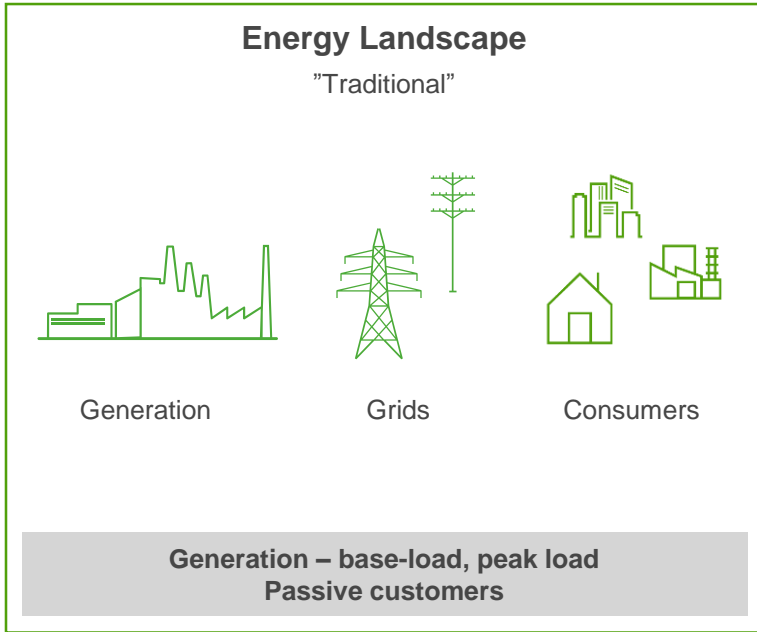
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UPM Energy Electricity everywhere

Tapio Korpeinen
CFO, UPM-Kymmene Corporation
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31 May 2018

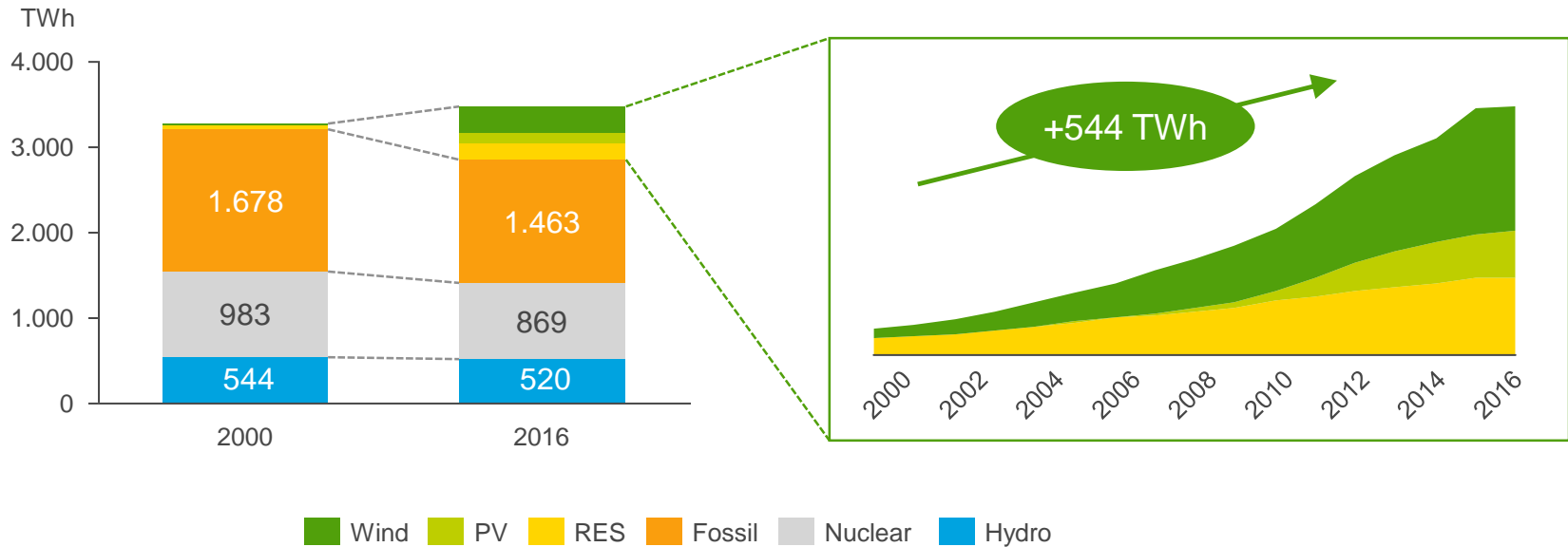


Electricity everywhere – new market realities challenge the status quo



European Power Generation supply has changed towards more renewable generation

Total electricity generation – EU 28 + NOR + CH



Source: BP annual statistical review, Eurostat



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Decarbonisation of the European power sector accelerated by coal phase out plans



Coal phase out plan take place
in most EU countries



European power industry
accelerates carbon reduction



Majority of coal phase out
will happen after 2025

UPM Energy CO₂ price roller coaster

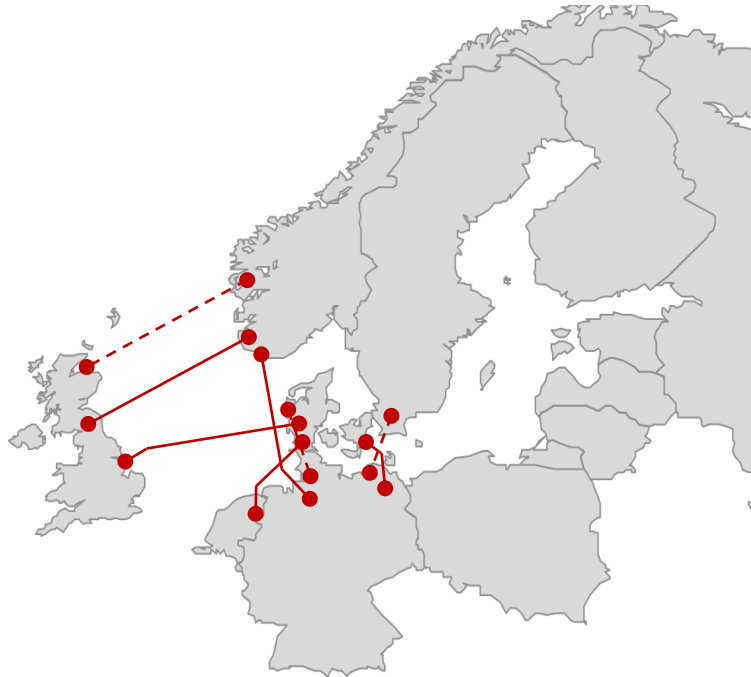


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Nordic power market will be increasingly connected to the Continent and UK



New interconnectors

Kriegers Flak	0.4 GW (2018) – DK : GER
Cobra	0.7 GW (2019) – DK : NL
Jutland	1.0 GW (2020) – DK : GER
Nord Link	1.4 GW (2020) – NOR : GER
North Sea Link	1.4 GW (2021) – NOR : UK
Jutland	0.5 GW (2022) – DK : GER
NorthConnect	1.4 GW (2022) – NOR : SCT
Viking Link	1.4 GW (2023) – DK : UK
Hansa Power Bridge	0.7 GW (2026) – SWE : GER

- — ● under construction
- - - - ● planning

Source: Statnet, Fingrid, Energinet, Svenska Kraftnät, Entso-E TYNDP 2016, Project web sites

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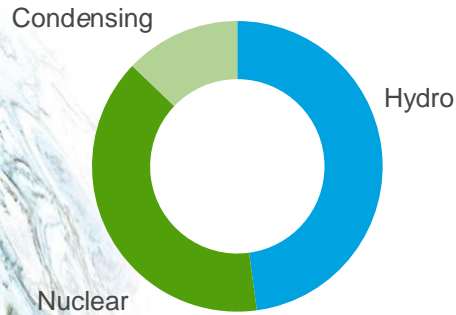
UPM's power generation – competitive in all market conditions



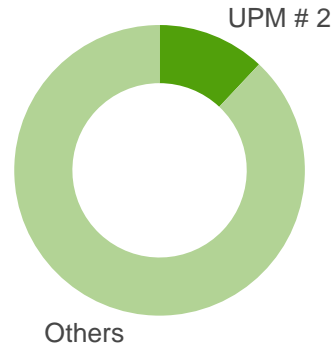
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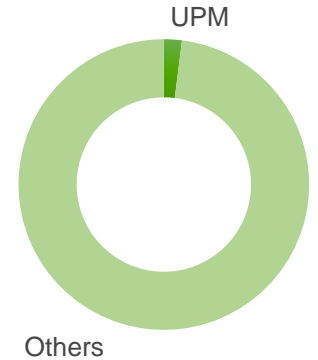
UPM's power generation assets



UPM in Finland

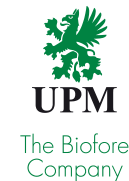


UPM in Nordics



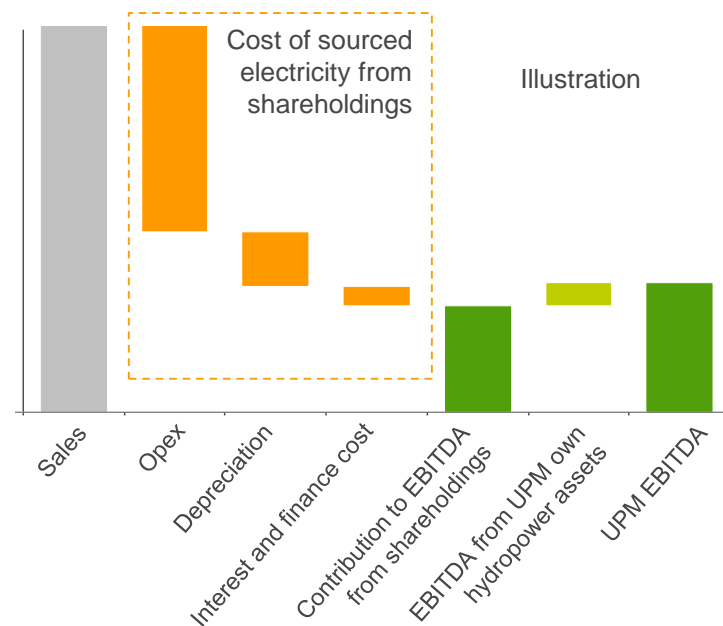
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UPM Energy's power generation	MW	EURm
Hydropower holdings	551	705
Nuclear power OL1 and OL2	584	1,082
Nuclear power OL3 under construction	(494)	215
Condensing power	191	2
UPM Energy's shareholdings in total, valued at fair value	1,327	2,004
UPM own hydropower assets	160	
UPM Energy's in total (excl. OL3)	1,487	
UPM Energy capital employed		2,322

UPM Energy sources electricity from part owned energy companies at full cost (cost-price principle, mankala principle)



OL3 EPR project

- Project on the home stretch
- A settlement agreement signed by TVO and plant supplier consortium focus on start-up
- Star-up scheduled in May 2019
- Fixed total investment costs for TVO: EUR 5.5bn

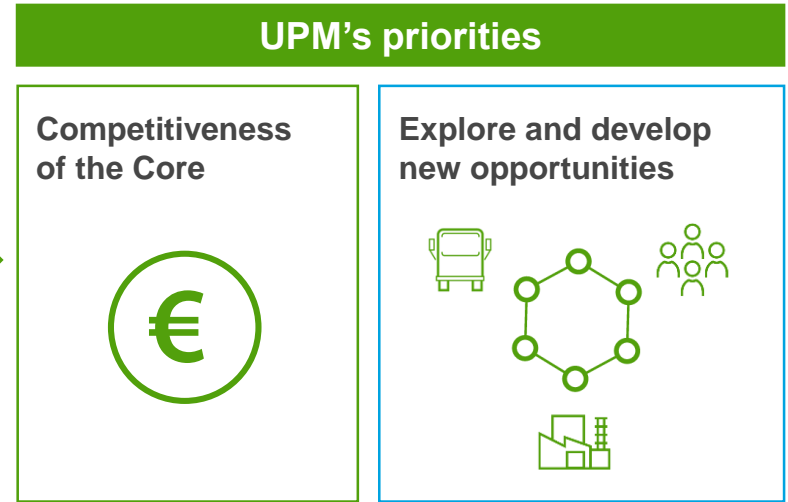
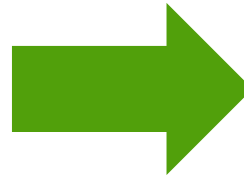
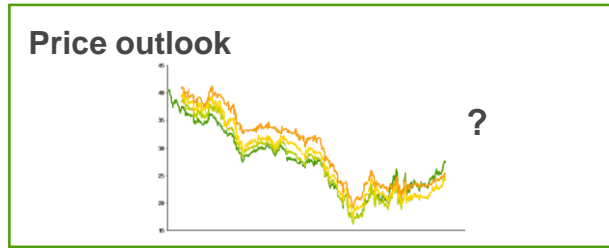


Service offering: competitive edge from selling expertise industrial-scale electricity consumers



- Leveraging UPM's experience in industrial scale energy consuming and generation operations
- Helps customers integrate their industrial processes into the electricity market
- By monitoring the price of electricity, understanding the inherent flexibility of processes and predicting the consumption enables electricity consumers to keep price risk under control and reap major benefits

Explore while keeping competitiveness





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