

Review on Long-Term Trends of North-West European Power Market

- Quick update

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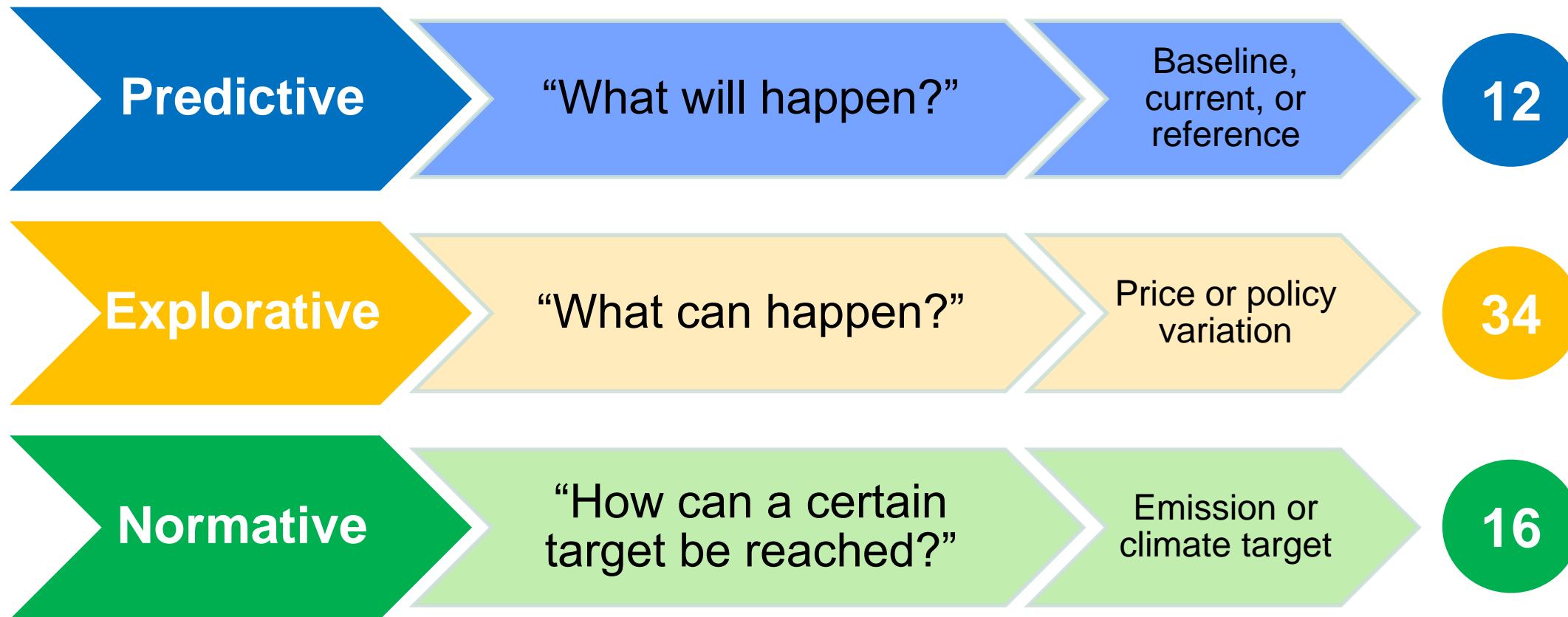
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Introduction

- To summarize the trends and differences of assumptions among various power market studies and identify uncertainties in market drivers.
- 25 Studies
 - World Energy Outlook
 - EU Reference Scenario, TYNDP
 - Nordic Energy Technology Perspectives
 - Kraftmarkedsanalyse (NVE), Langsiktig markedsanalyse (Statnett), Elpris outlook (Dansk Energi), Scenarier över Sveriges energisystem
 - ... and more
- 62 Scenarios

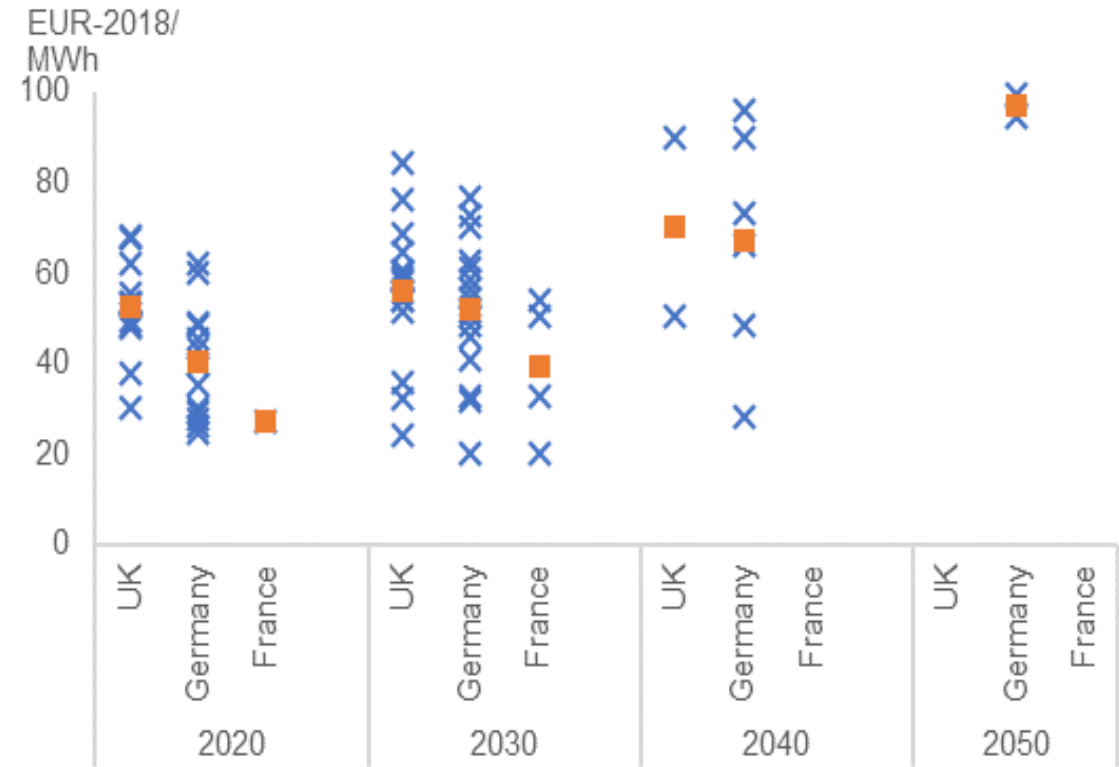
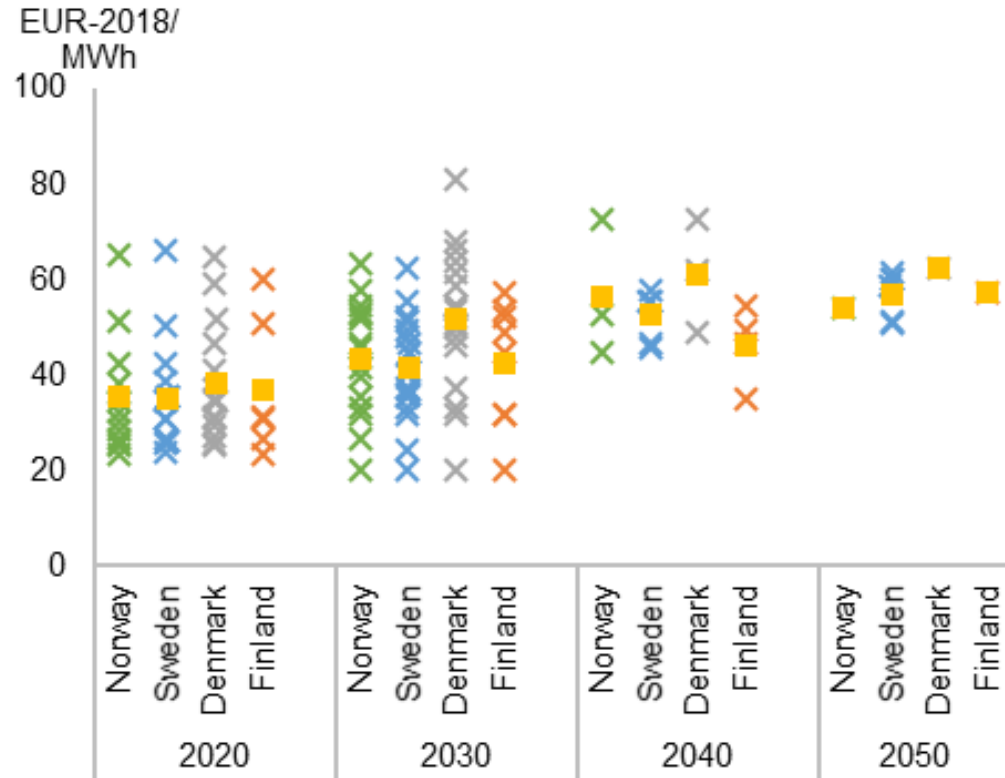
Scenario Topology



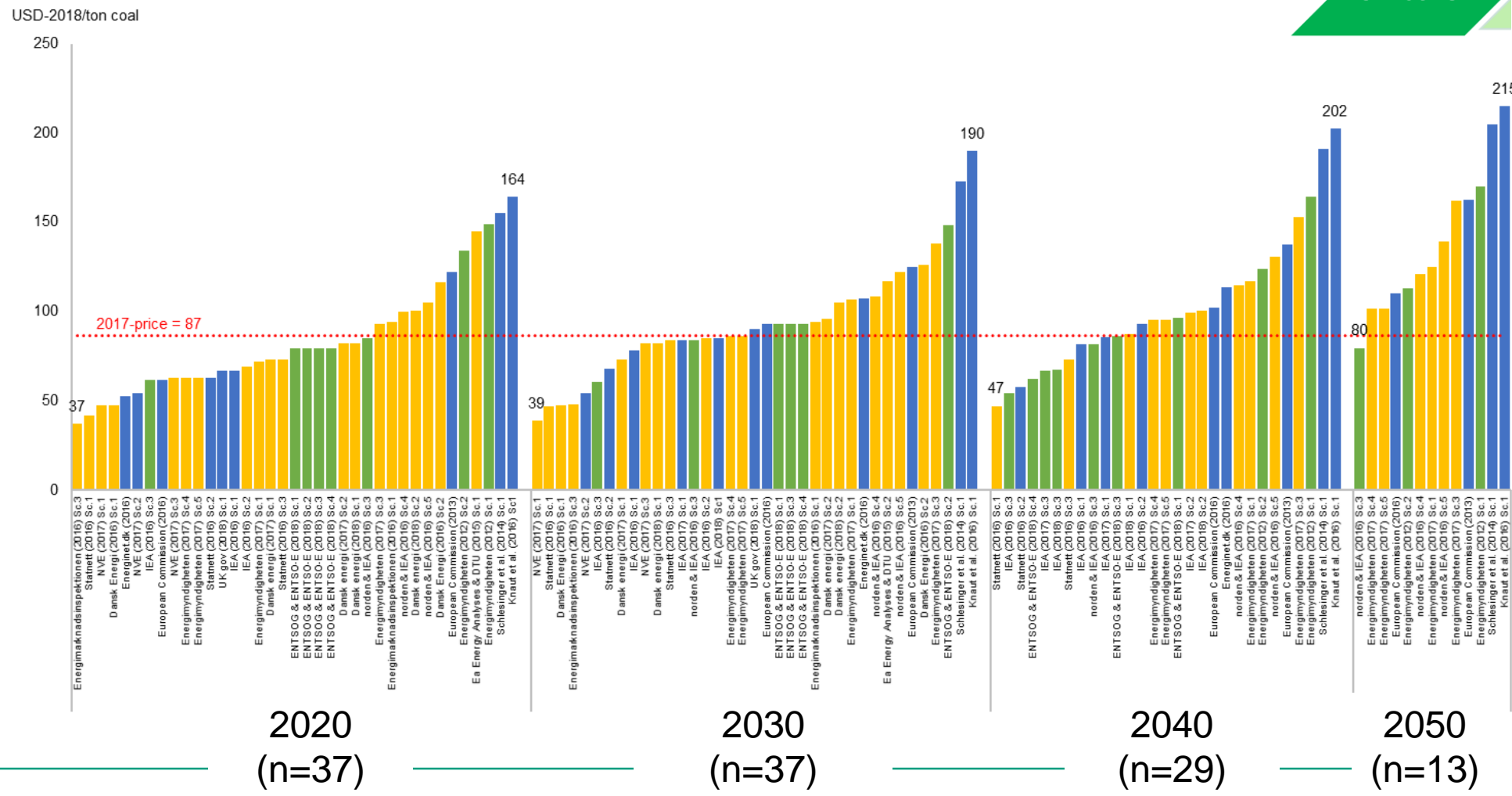
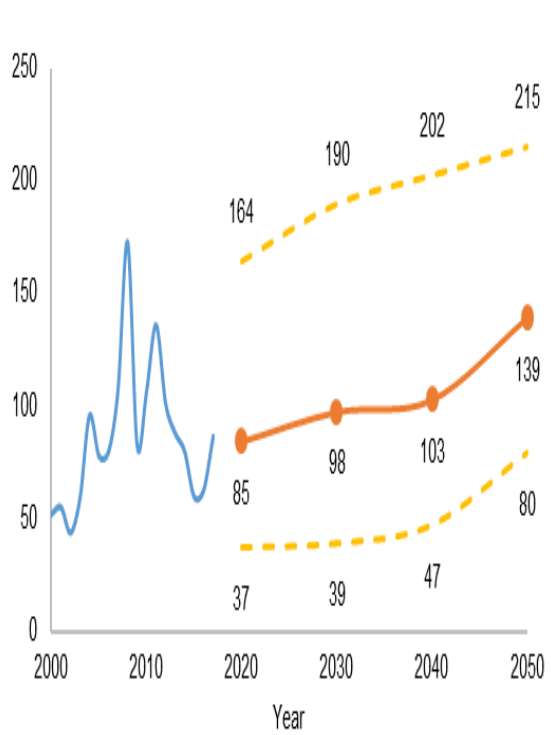


Summary

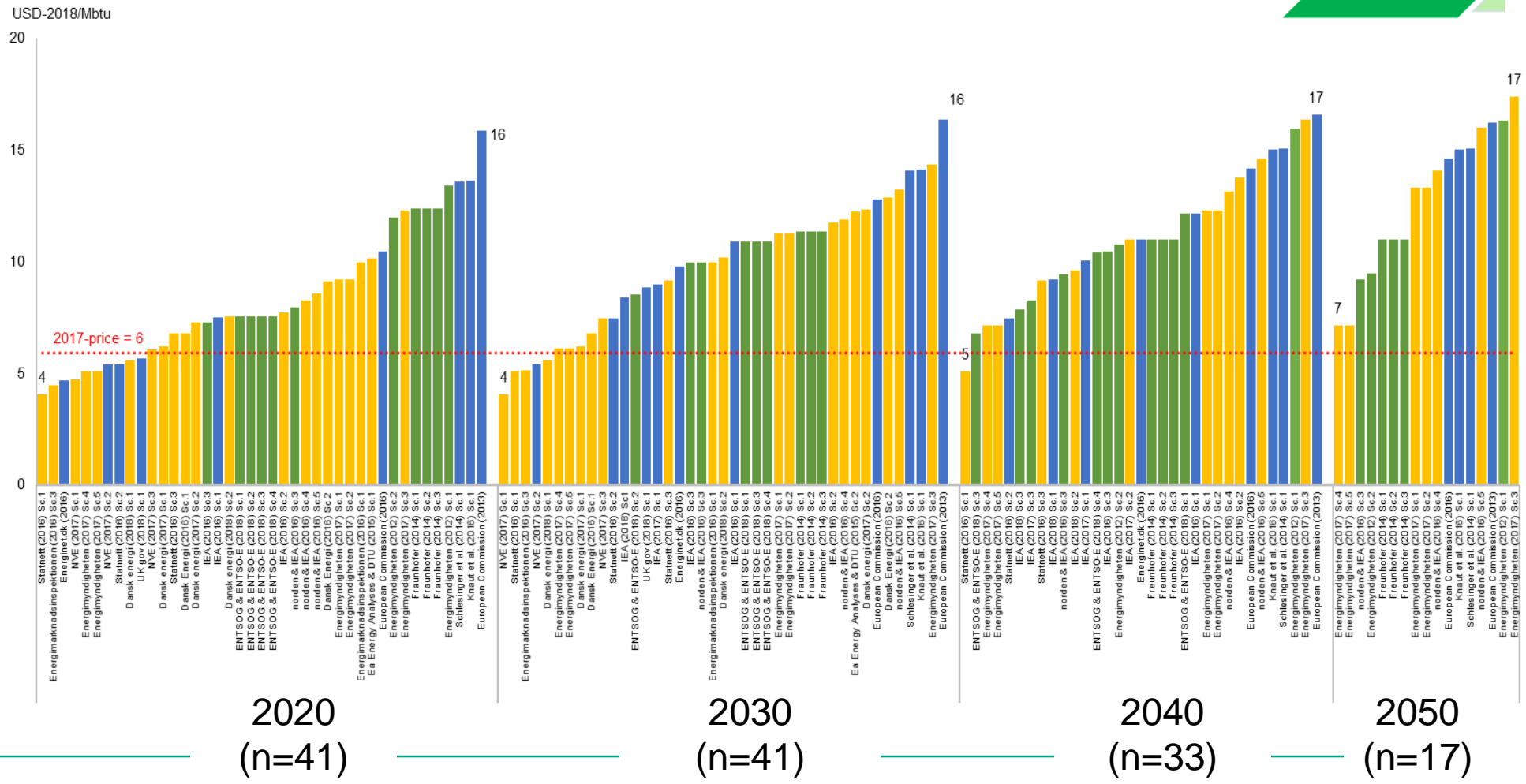
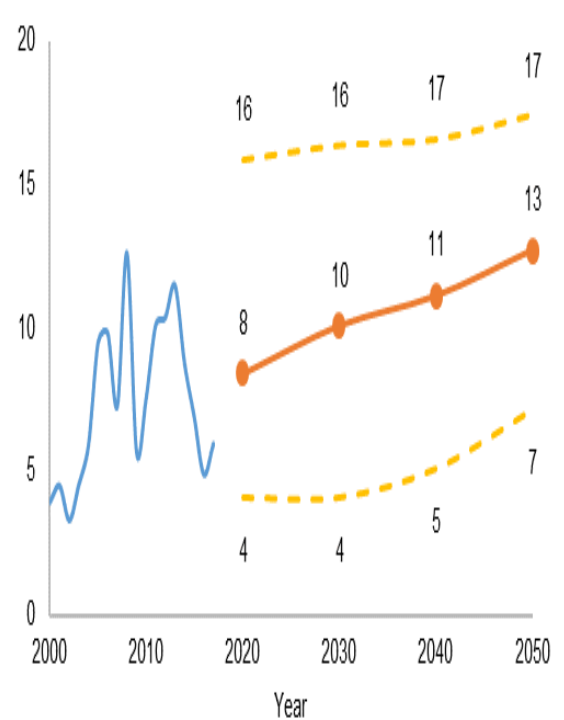
Power prices



Coal prices



Gas prices



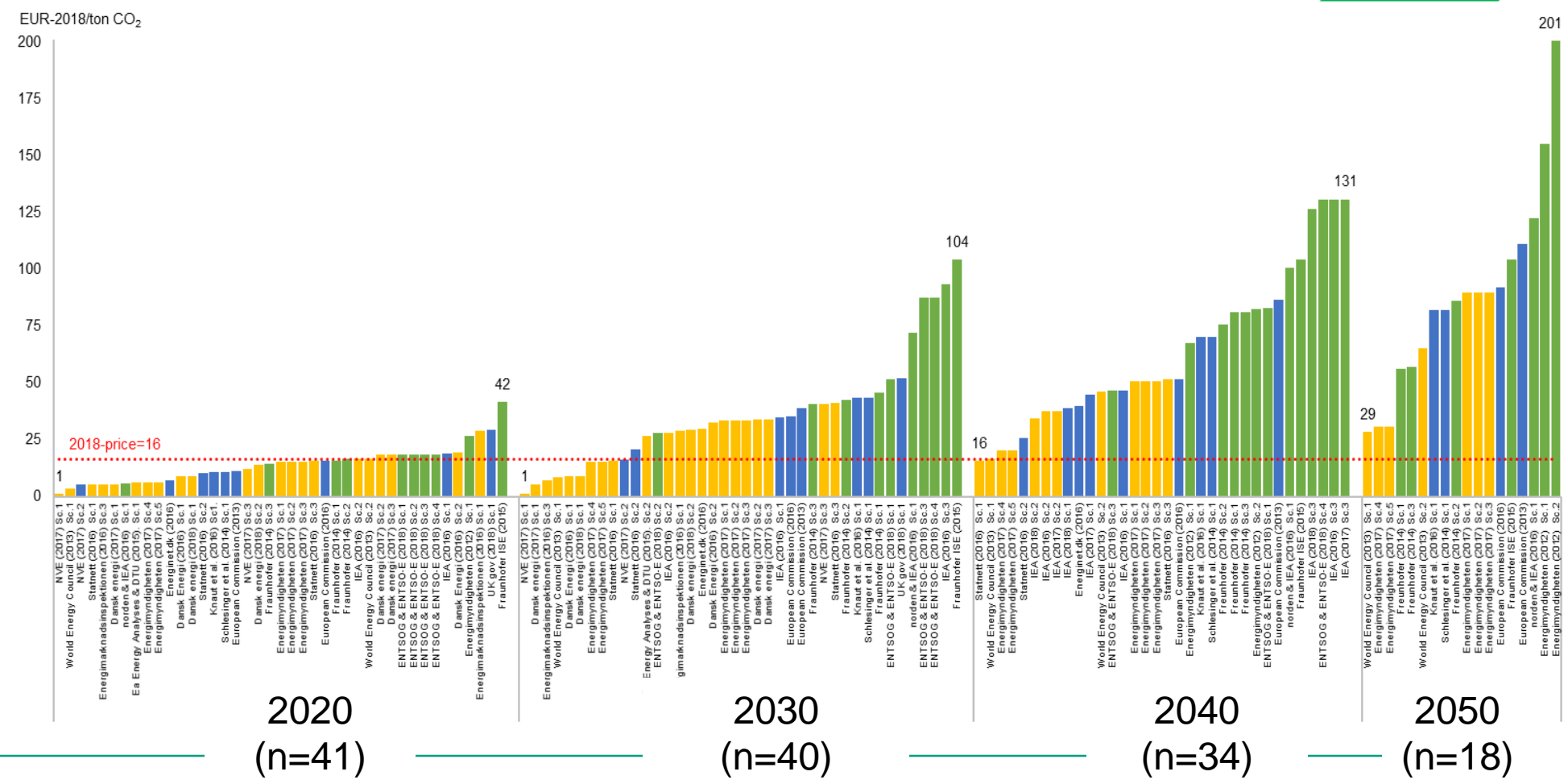
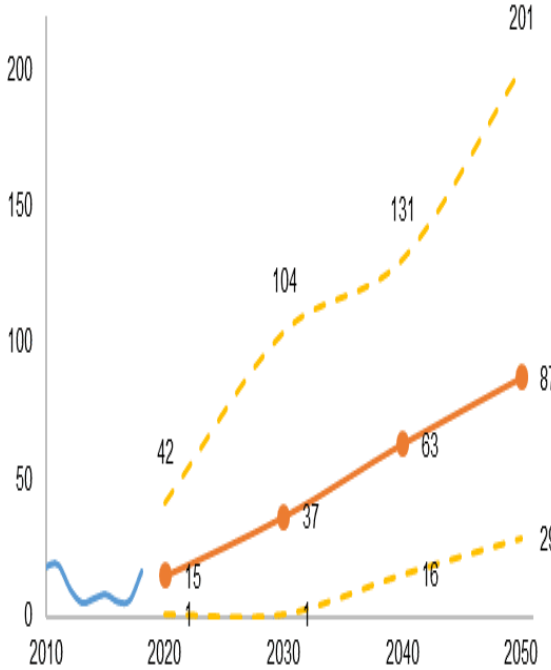
2020
(n=41)

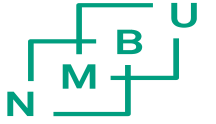
2030
(n=41)

2040
(n=33)

2050
(n=17)

Carbon prices





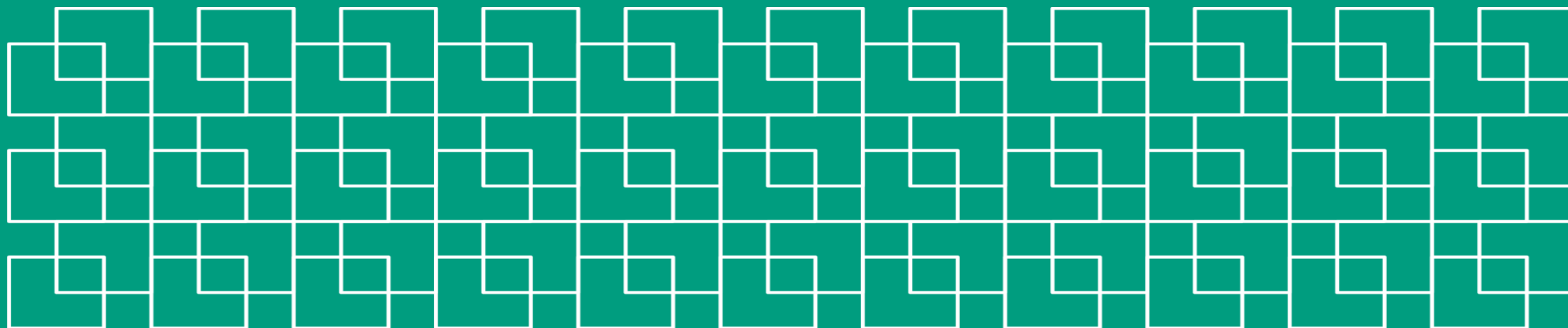
Conclusions

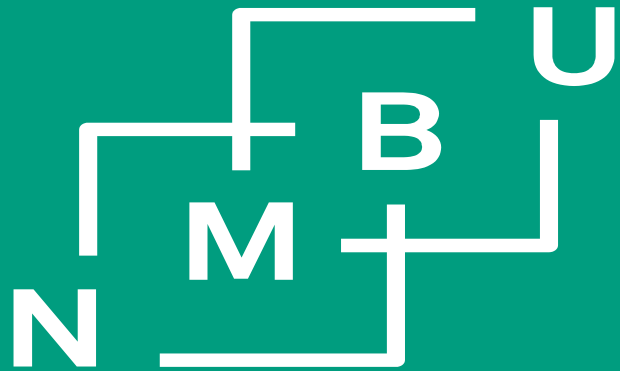
- Agree on increased power, fuel and carbon prices
 - but opinions on the range vary
- Normative scenarios show a distinct cluster of high carbon prices
 - but no clear pattern observed in terms of fuel prices

Recommendations for future outlooks

- ✓ Increase transparency
 - for example: justify assumptions, indicate input references
- ✓ Stay critical towards in applied input source
 - WEO and EU Reference Scenario are the main reference
 - Re-examine the linkage between demand, supply and costs
- ✓ Broaden the scenario focus
 - for example: changing of climate and weather data
- ✓ Display power price volatility, in addition to annual average
 - valuable information for investments
- ✓ Distinguish between short- and long term impacts
 - exogenous vs endogenous investment modelling

Takk!





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