



Long-term gas demand forecasting – Weather Risk

Agenda

- Importance of long-term forecasts
- Challenges of forecasting longer horizons
- Typical long-term forecast
- Weather Risk method
- Results – Austrian case

Importance of long-term forecasts

Long-term gas forecasting is an essential part of the strategic decision-making process

Investment planning

- Gas sellers want to know the demand in the territorial area in order to organize their supply chain and plan infrastructure investments
- The minimum period for this type of decision is 5 years

Operational planning

- Demand forecasts contribute to the safe, reliable and efficient operational planning of the transport/distribution systems
- Typically, up to 1 year ahead

Security of supply

- Demand forecasts are a key element of security of supply analyses

Challenges of forecasting longer horizons



Lack of reliable weather forecasts after 14 days

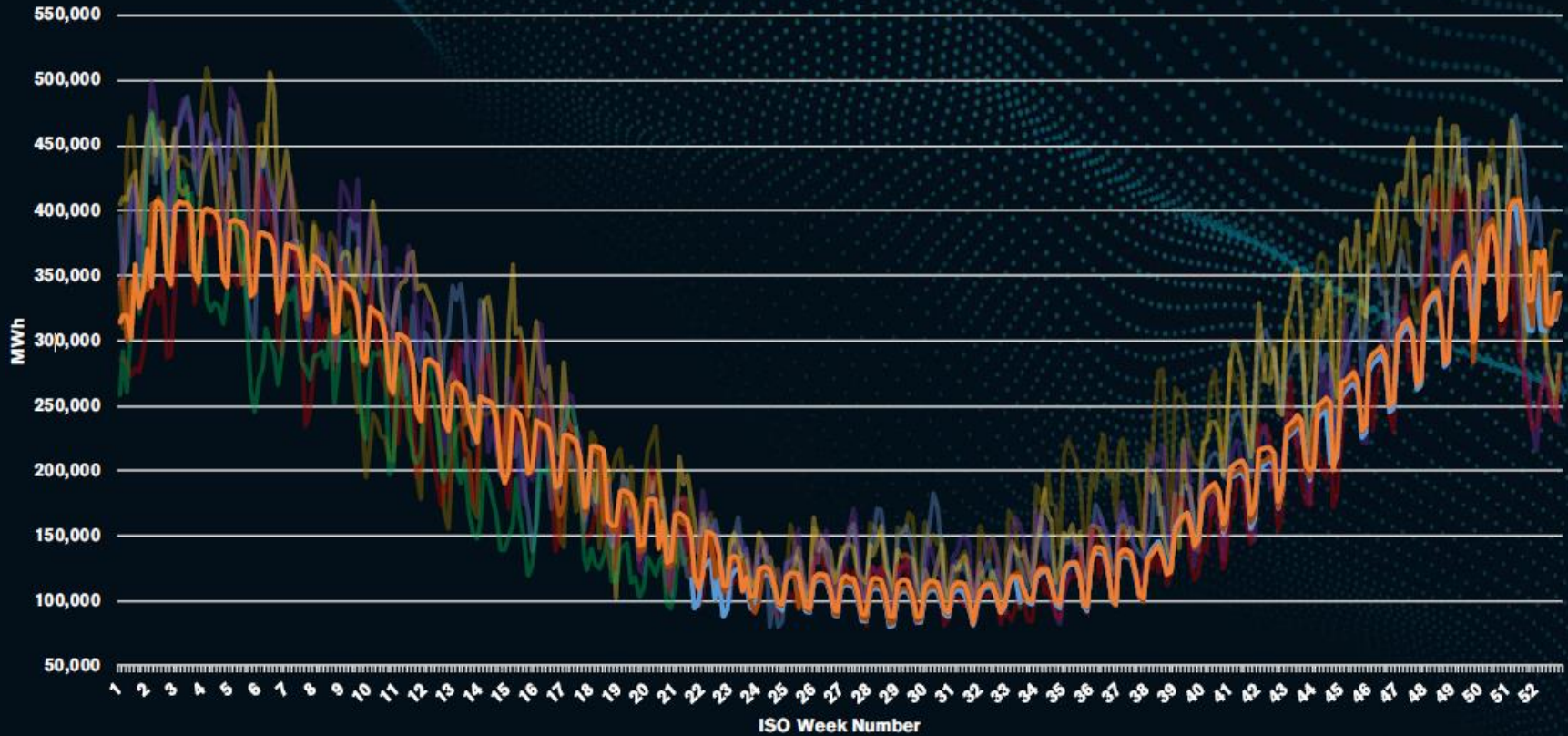


Long-term forecasting is always inaccurate



Requirement to take into account slow-moving trends

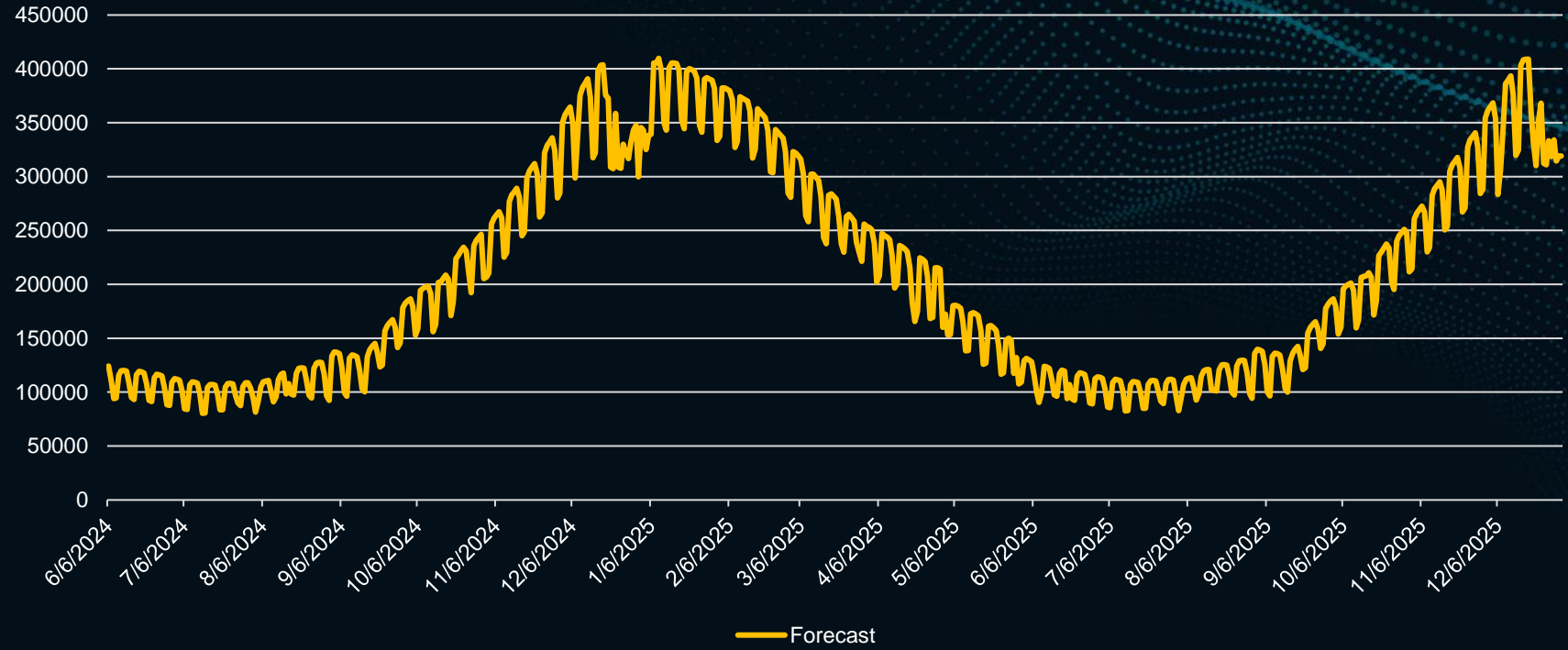
Austria Gas Demand Comparison



- Weather Adjusted Load 2019
- Weather Adjusted Load 2020
- Weather Adjusted Load 2021
- Weather Adjusted Load 2022
- Weather Adjusted Load 2023
- Weather Adjusted Load 2024
- Forecast 2024
- Forecast 2025
- Forecast 2026

Typical long-term forecast

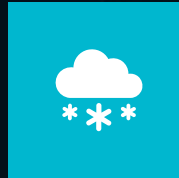
Austria Gas Demand – Seasonal Averages



Weather Risk method



Pseudo **Monte Carlo**
simulation



Use **historic weather** as
forecast input



Up to 150
different
scenarios

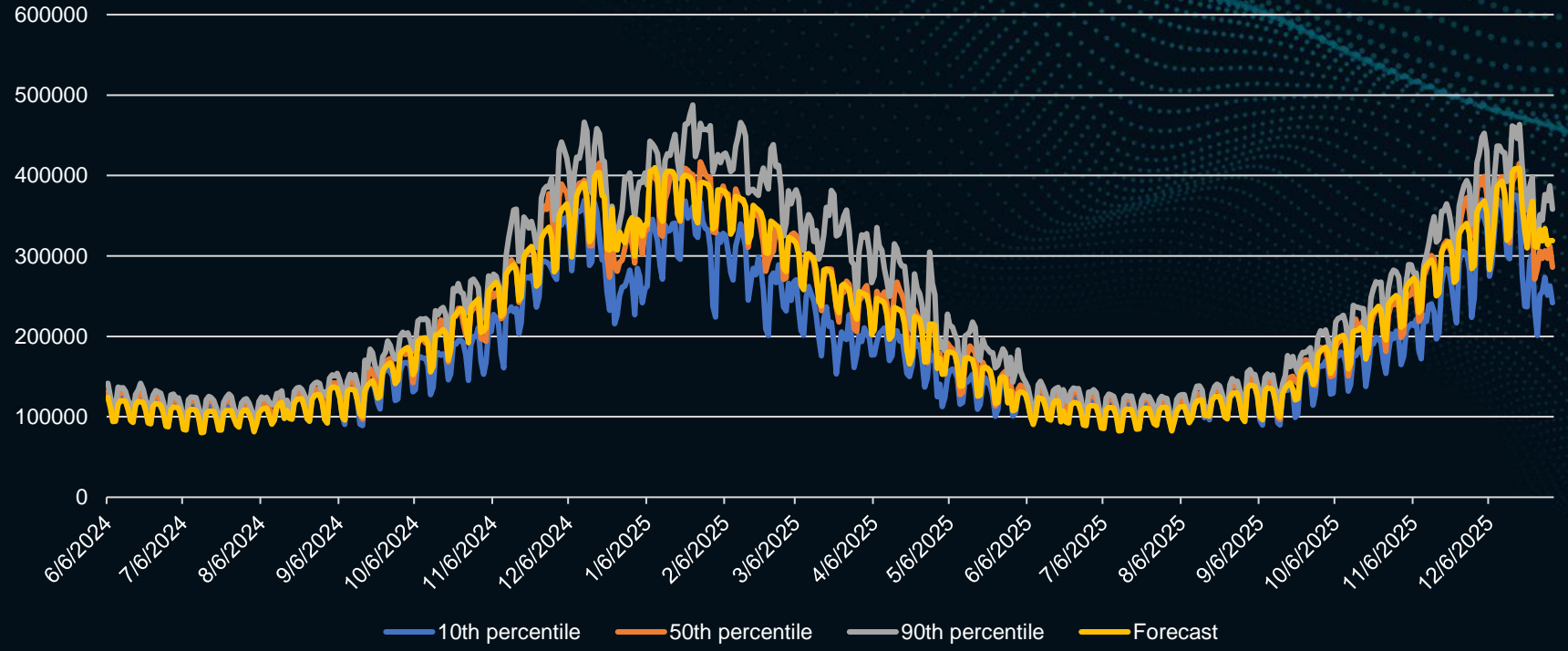
Weather Risk method - example

	01/01/2020	02/01/2020	03/01/2020 ...	29/01/2020	30/01/2020	31/01/2020
Temperature (C)	3.24	-1.6	-3.64 ...	4.57	2.46	0.51
Wind speed (k)	8.59	4.45	6.22 ...	8.92	4.52	4.28
Wind direction (degree)	235.83	31.67	15.42 ...	150.83	39.58	41.67
Humidity (%)	66.75	86.25	95.88 ...	80.17	89.46	88.88
Cloud Cover (octa)	4.63	1.71	6.58 ...	5.33	6.71	4.21
Precipitation (mm)	0	0	0 ...	0.29	0.07	0



Weather Risk method - percentiles

Austria Gas Demand



Weather Risk method – weather years

Austria Gas Demand



Thank you!