ENWEX temperature

financial temperature swaps

enwex

What will be traded?

Highly standardized index to trade volumes, transferring weather data into tradable structure

Why was it developed?

Reduced correlation between price and volume risks causing need for new hedging instruments

Participants

Gas companies, Utilities, Retailer, Municipals, Insurance companies, Hedge fonds

Improvement vs. recent weather derivatives

Complete standardisation to energy market's needs (MWh logics, day ahead settlement, transparent)

How to calculate ENWEX temperature, e.g. for Germany

- Temperature in °C corresponds to price in €, e.g. 10,25° means 10,25€

- Price calculated out of hourly grid point forecasts for day ahead (local time) 2m temperature

- Weather Model for grid points: ECMWF operational model, 00z update, 0.25° spatial resolution

- Reference locations per market, e.g. for Germany per Bundesland

Region	Latitude	Longitude	weight in %
Baden-Württemberg	48,50	9,00	13,4
Bayern	49,00	11,50	15,9
Brandenburg & Berlin	52,50	13,50	7,5
Hessen	50,50	9,00	7,6
Mecklenburg-Vorpommern	53,75	12,50	1,9
Niedersachsen & Bremen	52,50	9,00	10,5
Nordrhein-Westfalen	51,50	7,50	21,5
Rheinland-Pfalz	50,00	7,25	6,1
Sachsen	51,00	13,50	4,8
Sachsen-Anhalt	52,00	11,75	2,6
Schleswig-Holstein & Hamburg	54,25	9,75	5,7
Thüringen	51,00	11,00	2,5
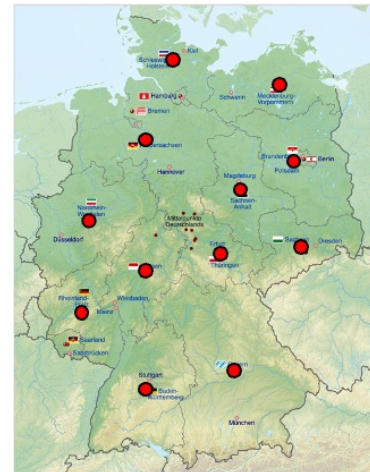
- Index will be calculated by the service provider Energy Weather

- Publishing of day ahead hourly and base index at www.enwex.com (12:00 local CET)

Use case: Storage owner (e.g. 1TWh)

Reservoir filled up along BNetzA target to 95% until 1.November; no hedge via price curve
⇒ Risk for less demand due to mild winter, here e.g. as in November 2022 means less income

Position:
- 10 year climate temperature for November: 6,00°C
=> Storage owner is buyer for ENWEX temperature November (720h) @6,00€

Size:
- November at 6°C usually reflecting 15% of winter heating demand (example!)
=> Appr 1,5% or 15 GWh withdrawl of storage capacity per degree and month
- Average injection prices of 50€ / MWh (example!) causing
  risk per degree temp anomaly of 15.000MWh * 50€ => 75.000
- 75.000€ / 720 hours => 104 contracts long position for November

⇒ buying 104 lots hedges a 75.000€ open risk per degree temperature anomaly in November

Settlement:
- November 2022 settlement for ENWEX temp was 7,27€, so 1,27°C warmer than normal
=> Cashflow: 1,27€ * 720h * 104 lots = 95.097,60€ profit out of hedge

Temperature Germany November 2022
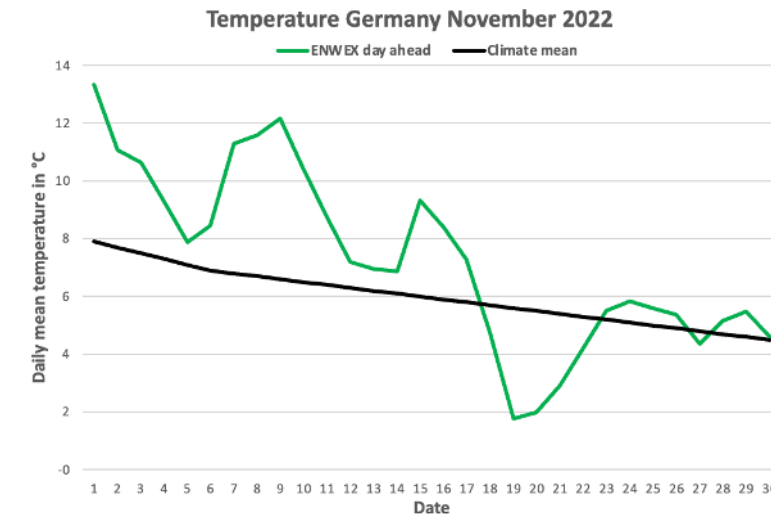
Summary

- Consequent standardisation of weather towards structures of energy markets

- Optimal transparency on calculation and publication of data (incl. free download)

- Usage of weather data only from well credited and independent ECMWF

- In case of acceptance / liquidity, highly scalable concept

=> Instrument to hedge Gas and Power volumes without additional costs