

Quantos

Innovative weather risk transfer solutions for all industry sectors

Munich Re is a market leader in the modelling, pricing and trading of weather derivatives. These market-based **bespoke solutions** compensate for our clients' weather-related losses if the realised weather outcome falls outside an established range.

Your challenge

- Your **business performance** is negatively impacted by the combination of adverse weather and commodity price movements
- You would like to **protect your portfolio** against adverse volume and price risks

Use case

- A gas retail company in the UK
- Cold **temperatures and high gas** prices cause higher than expected sales and costly buy-in of energy shortfalls.
- **Warm temperatures, therefore low gas** prices, may also have a negative impact
- A **quanto** is the perfect hedging tool for both risks as it hedges exposure to both price and volume risk

Solution

- Relevant **weather index and commodity** are chosen to best replicate the actual portfolio
- A four-quadrant **quanto** allows the receipt of payouts in adverse price or weather conditions and share revenues in other cases

Example of product definition and associated performance

Four-quadrant quanto

Index

Temperature / NBP prices

Risk

Cold + high prices / warm + low prices

Location

UK (CWV index)

Risk period

Winter (Oct - Mar)

Weather strike

6 CWV (daily)

Gas strike

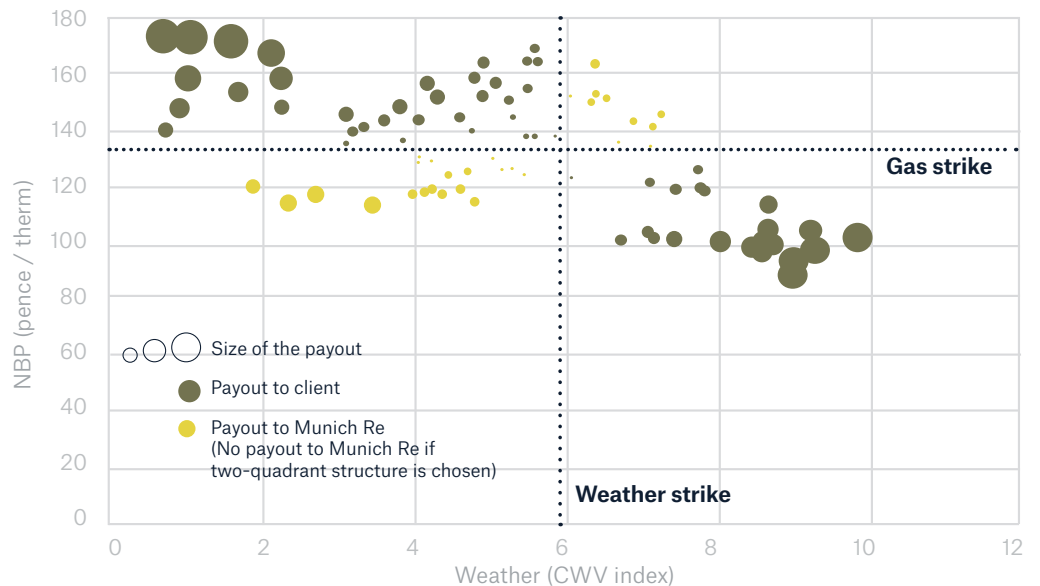
135 pence / therm

Notional

80 kth / CWV / day

Premium





On request



Four-quadrant quanto: A structure in which payments are triggered in all 4 possible outcome scenarios (high / low temperature and high / low price scenarios) **Two-quadrant quanto:** A structure in which payments are only triggered in 2 possible outcome scenarios (usually the low temperature / high price and the high temperature / low price scenarios) **NBP:** National balancing point **CWV:** Composite weather variable


We offer a range of bespoke weather-contingent risk management solutions

1 Weather perils

Wind – Wind speed – Wind power generation – Wind direction		Solar – Hours of sun – Solar irradiation – Solar power generation		Temperature – Avg. / Min. / Max. temperatures – Heating or Cooling Degree Days (HDD, CDD) – Sigmoid function for energy demand		Water – River height – Streamflow – Water power generation	
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Other
Contact us about any weather-related risk you are exposed to.

2 Where

Global coverage – Weather stations – Lat. / Long. coordinates	– Speedwell indices – Third-party data feeds	
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3 Select your commodity exposure

Gas – TTF, NBP, THE, PSV, PEG, ... – LNG prices	Power – European spot and forward markets
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