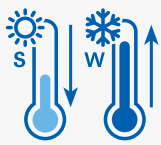


A dramatic landscape photograph featuring large, jagged icebergs in the foreground and middle ground. The sun is setting on the right side of the frame, creating a bright, golden glow that reflects on the water and illuminates the sky with soft, colorful clouds. The water is dark with small ripples and some smaller ice floes scattered across it.

Managing Temperature Risk



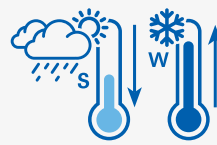
Exposure and application



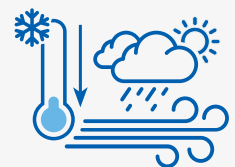
Utilities lose revenues when **summers are cool and winters are warm**



Renewable power producers lose income if there is **less wind, rainfall** or **sunny radiation**



Warm winters or rainy summers hurt many businesses (travel, leisure parks, food and beverages)



Construction costs increase when sites shut down because of **extreme weather** (freezing temperatures, high winds...)



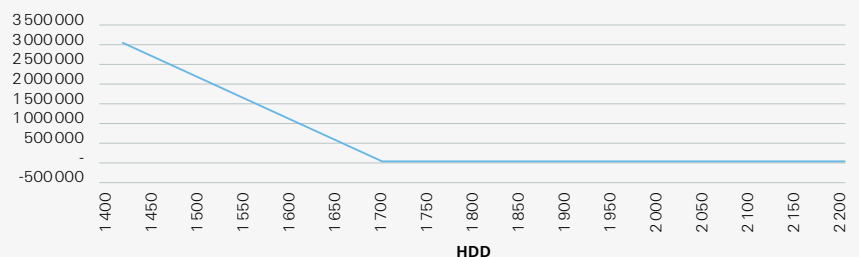
Example of heating degree day protection



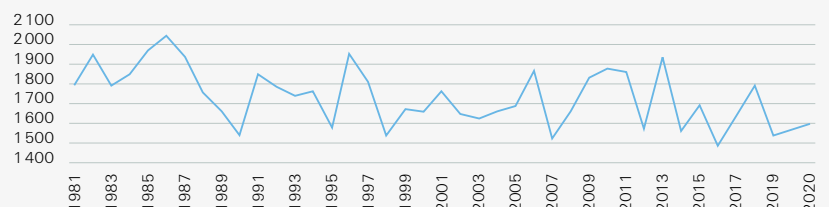
Temperature indices can be used to structure **derivatives** (put, calls, swaps) or **parametric insurance**

Broad variety of **indices available**, including **"Critical Day" count products**

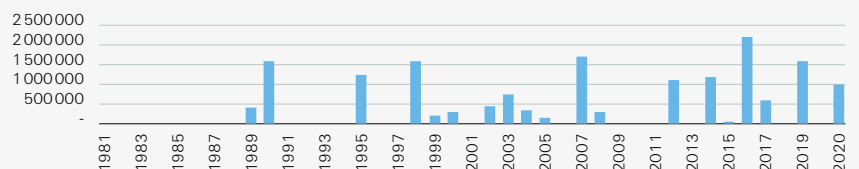
Product Payoff in EUR



HDD London Heathrow NovY-1_MarY

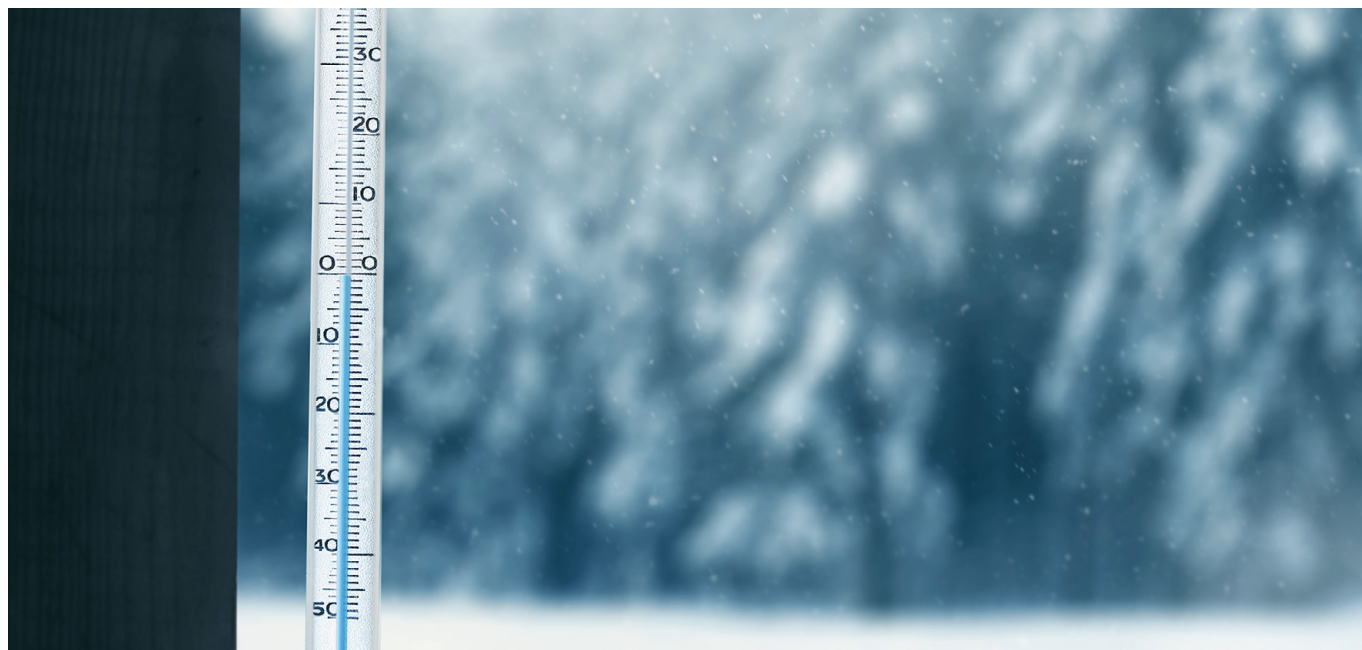


Historical Compensation in EUR





Notional terms



Product	Warm winter protection via HDD put
Location	London Heathrow Airport (LHR)
Index	Heating Degree Days (HDDs): Difference between a day's average temperature and 18, if negative. Examples: If average temperature is superior or equal to 18° C, then HDD count for that day is 0. If average temperature is 11, then HDD count for that day is 7
Strike	1700 HDDs total during Term
Payout	$\text{MAX}(0, (\text{HDDStrike} - \text{HDDActual})) \times \text{Notional}$
Tick or notional	EUR 10 000 per HDD
Term	November to March



Case study



Client	UK household gas retailer
Problem	Demand destruction caused by mild winters can generate significant loss of revenue and profits
Solution	HDD Put compensates clients if average temperature over a season is warmer than normal, by more than one standard deviation
Location	12 locations weighted to match load and service area
Result	Revenues are protected

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