



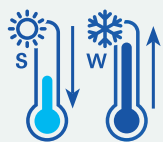
Swiss Re
Corporate Solutions

Managing Temperature Risk





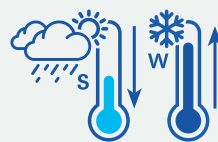
Exposure and application



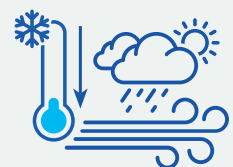
Utilities lose revenues when **summers are cool and winters are warm**



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...)



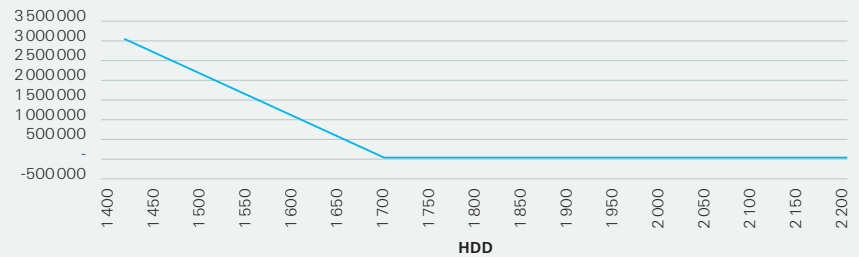
Example of heating degree day protection



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

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

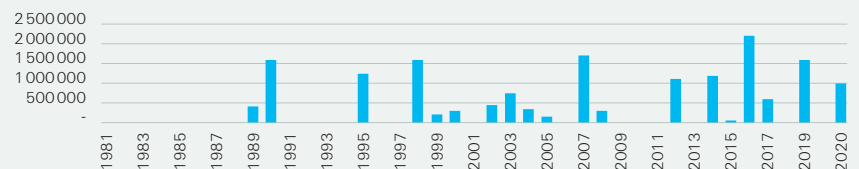
Product Payoff in EUR



HDD London Heathrow NovY-1_MarY

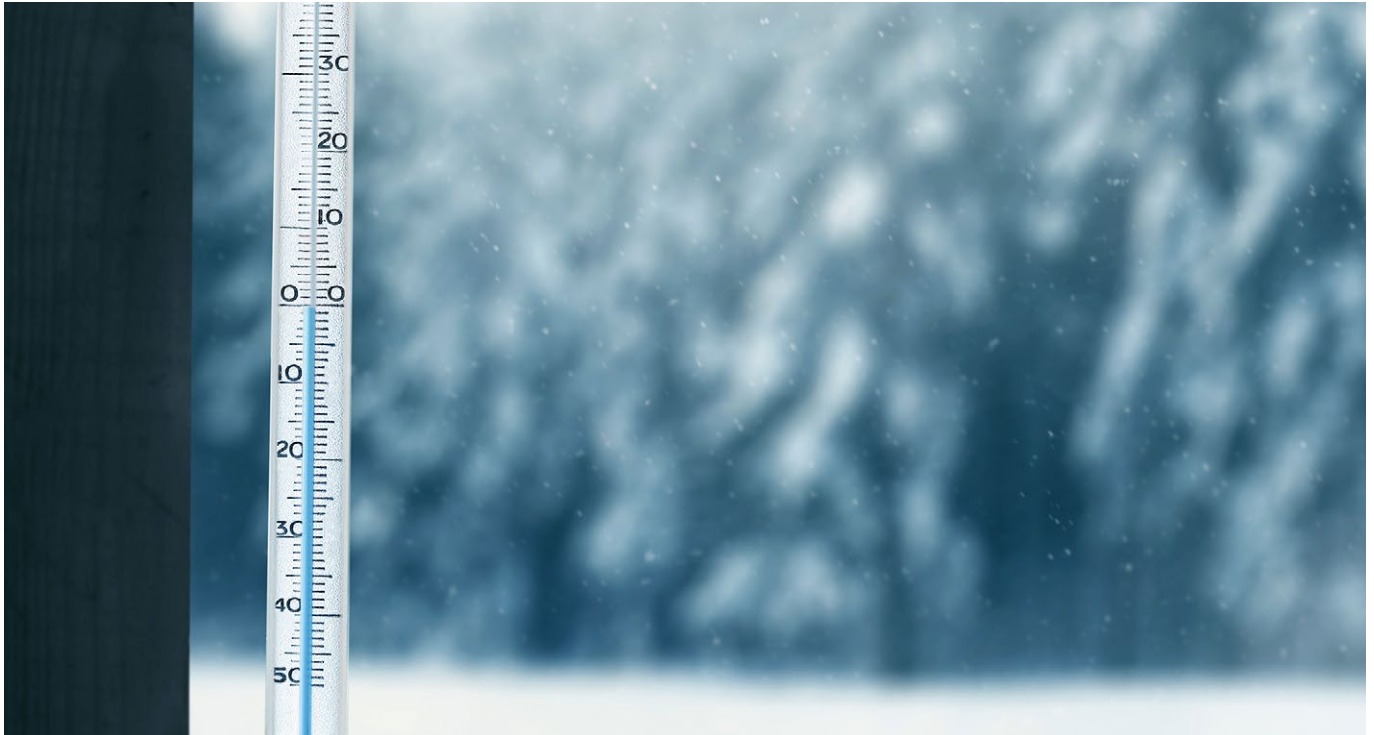


Historical Compensation in EUR





Notional terms



Product:	Warm winter protection via HDD put
Location:	London Heathrow Airport (LHR)
Index:	<p>Heating Degree Days (HDDs): Difference between a day's average temperature and 18, if negative.</p> <p>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</p>
Strike:	1700 HDDs total during Term
Payout:	$\text{MAX}(0, (\text{HDDStrike} - \text{HDDActual})) * \text{Notional}$
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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