

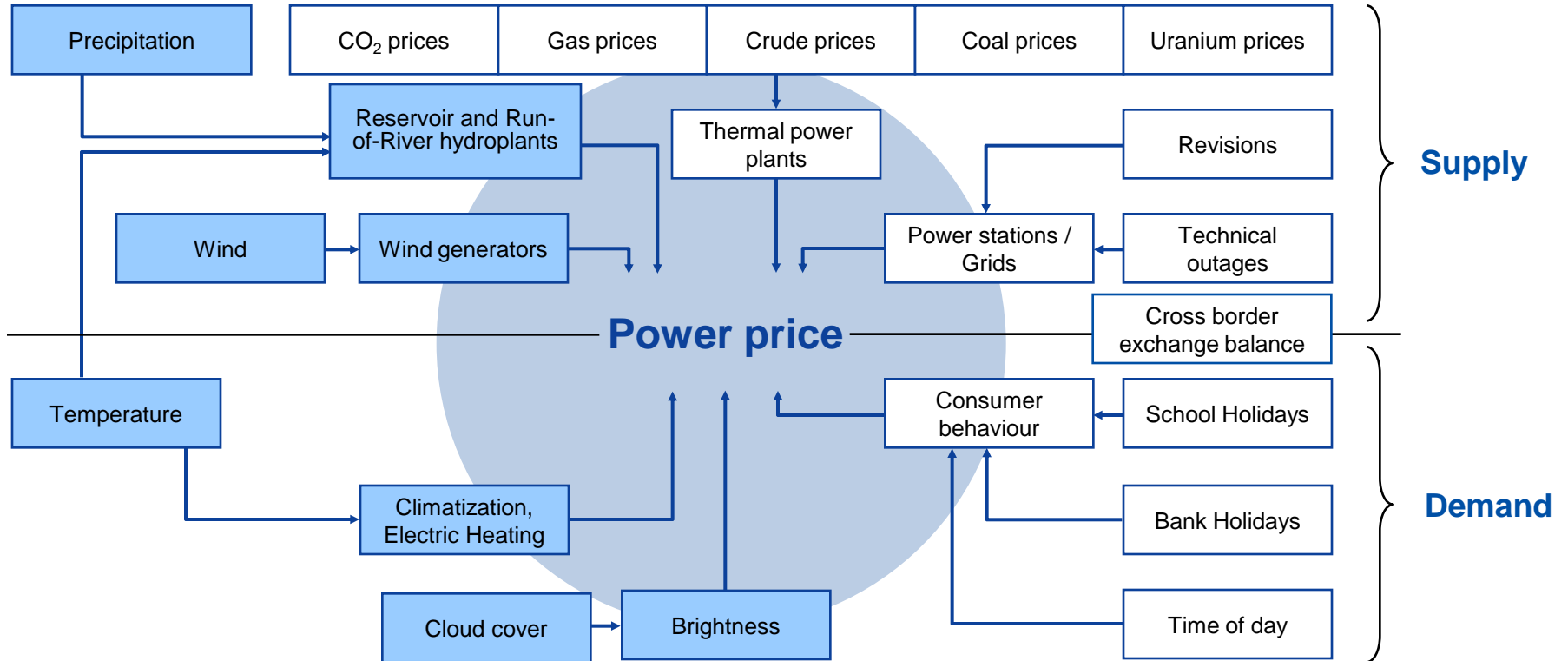
Why are Weather Futures so Painfully Slow in Europe?

And what could possibly help? - A learners tale

5-7 November 2008 WRMA Meeting Berlin, Germany
Eric Stein, RWE Supply & Trading



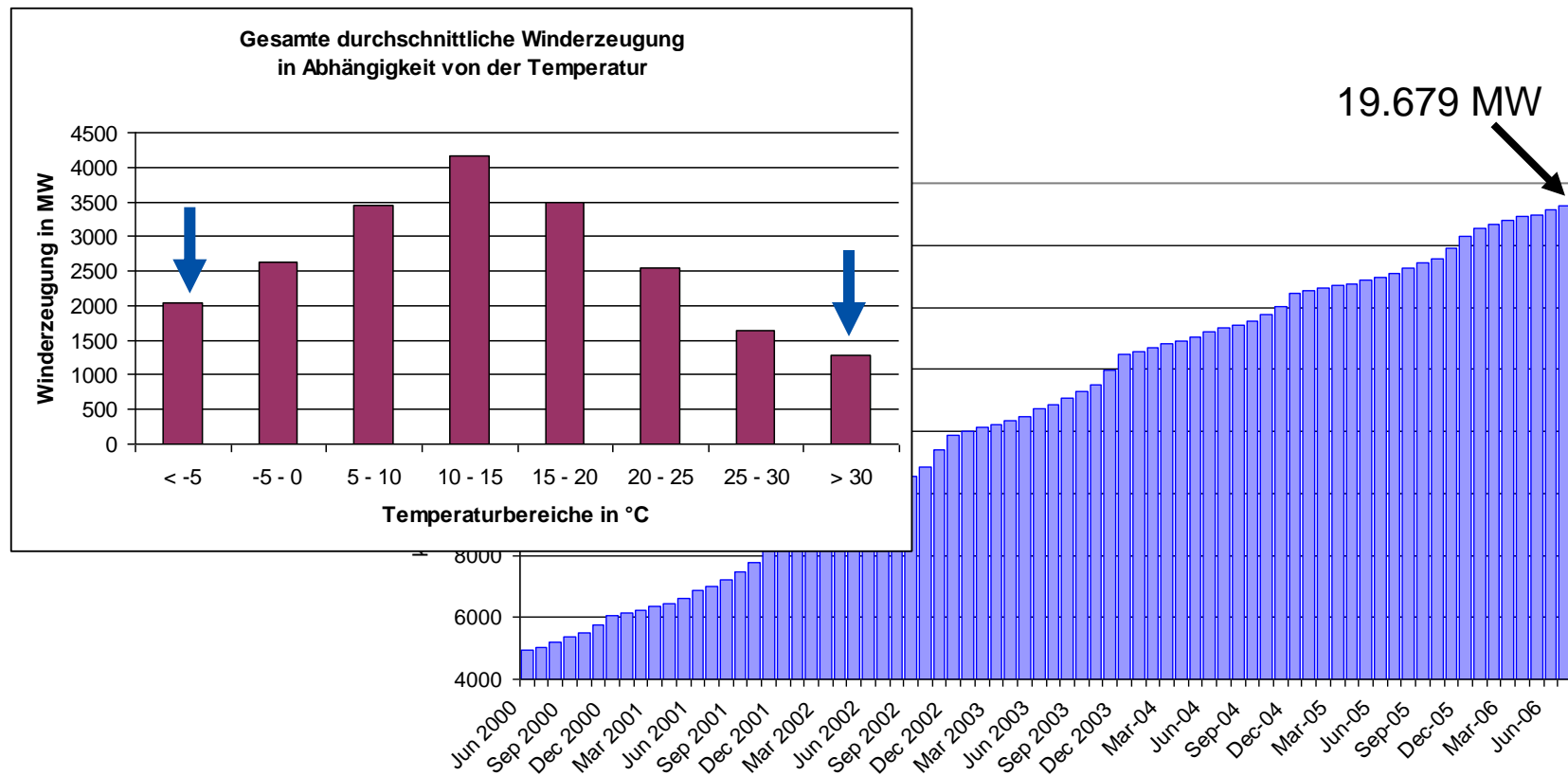
Weather is a fundamental factor for both power demand and supply



- > Future markets are also reflecting price (hence weather) expectations of market participants.

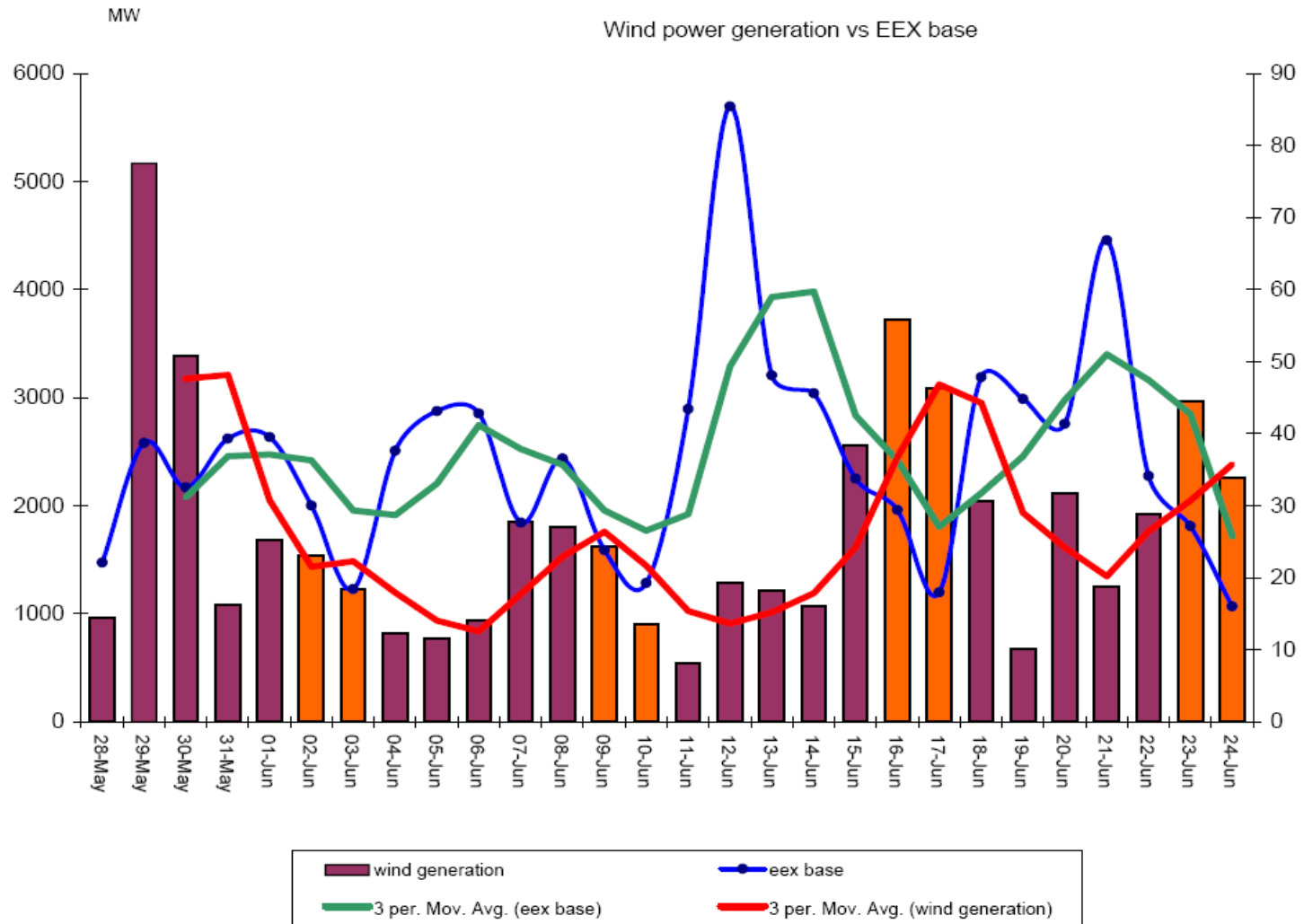
Wind as a fundamental factor

Germany has almost 20,000 MW of installed wind capacity. However, wind farms often do not deliver when they are needed most – under extreme temperatures and high load consumption



Example: Spotmarket (EEX Phelix Base), May – June 2007

On average every GW of additional wind is worth a price difference of about EUR 1.00



Liquidity Overview 2005 to 2007

Total Volume and Number of Trades			
Front Month Swaps 2005-2007			
	location	lots	trades
contracts	London	16545	301
	Paris	1353	50
	Amsterdam	2566	40
	Essen	450	7
	Berlin	1500	20
	New York	288000	5300

High motivation for RWEST (or any European utility) to trade Weather Derivatives

Weather parameters are a significant risk for asset owning companies and have a large impact on proprietary trading portfolios, particularly in Power and Gas.

Standard instruments in weather trading focus on volume risk by relating a pre-defined tick value to changes in a weather variable such as temperature. However, trading the volume risk improves capability to risk-manage combined price-/volume risk as well.

Monthly weather futures could be used to hedge the weather exposure of monthly power and gas futures with a high flexibility against unexpected events, for example during extended revision cycles, or via the temperature/wind correlation during months with exceedingly below or above average wind generation.

The number of Meteorologists/Climatologists on utilities trading floors is increasing, allowing to take on a position based on in-house weather expertise. This capability currently provides advice to the trading desks, where weather often is traded implicitly. It would be an appropriate basis to also trade weather explicitly in a secondary market.

Speed-up the set-up of a Weather Desk and helping with product approvals.

Non-theoretical practical user guides. Example trades. How to evaluate risk. How to calculate limits. For example: given the way instruments price a conventional VaR measure cannot be applied. However, RWEST reports the existing exposures in weather derivatives through an Earnings-at-Risk approach, which captures the distribution of net-payoffs at outturn (with instruments being held until expiry).

Ready available historic weather data, historic trades, volumes, quotes to show real liquidity.

Product specifications including trading hours/holidays, codes, ISDA contracts, should be available from one single source.

Trades and quotes data should be available on e.g. Bloomberg and/or Reuters

European markets should reflect European reality

Tick size in Euro - weather traders should trade weather not FX.

Appropriate European base temperatures: 16 degC instead of 18 degC ?

Non-metric measures are patriotic/romantic, but not scientific: Use international SI measures, e.g. degC, m/s, hPa(mb), mm etc. No gallons, ounces or tablespoons, or Fahrenheit.

Neutral and independent market data - quality controlled and available. Good interfaces.

More sites. More parameters. E.g. wind or precipitation

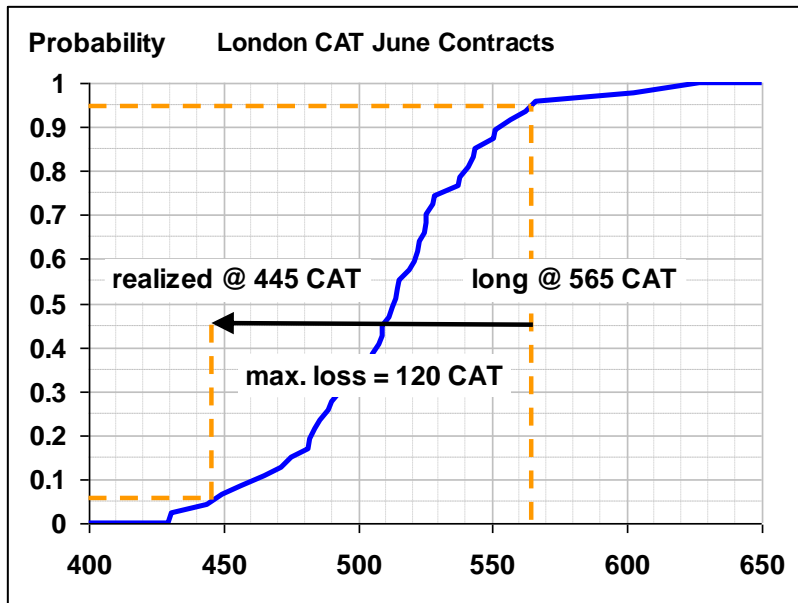
European Trading Hours - possibly oriented at the GFS 12 GMT run.

If no trade - there should be a daily end-of-day quote.

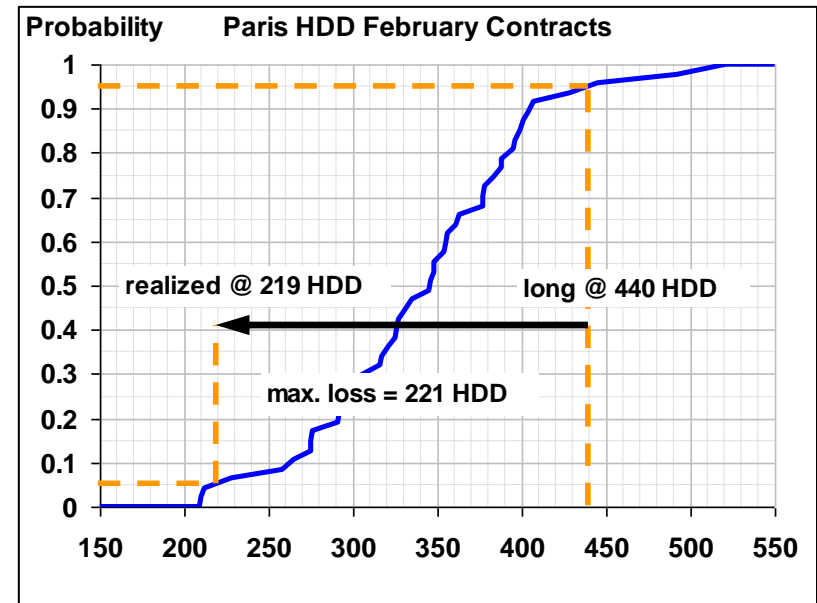
CME needs to look for European partner - activities so far seem to be half-hearted and not coming to a result.

Earnings-at-Risk Illustration – CAT and HDD

Linear detrended temperature data from the 1961 – 2007 interval from Paris and London have been used to calculate Earnings at Risk of two contracts with high notional values and high volatility. Both are usually much smaller in other contracts, e.g. with HDD's for October. Furthermore the expected maximum loss shown below is rather theoretical value than a realistic one.



- > The loss of 120 CAT traded as a standard contract of 50 lots would be equivalent to a loss of £ 120,000



- > The loss of 221 HDD traded as a standard contract of 50 lots would be equivalent to a loss of £ 221,000

Thank You

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