

Christmas Workshop Energy Finance 2016 | December 12th – December 16th | Abstract

Electricity Forward Curves with Thin Granularity: Theory and Empirical Evidence in the Hourly EPEX Spot Market.

By Andrea Roncoroni:

Abstract:

We put forward a constructive definition of electricity forward price curve with cross-sectional timescale encompassing hourly frequency upward. The curve is jointly consistent to both risk-neutral market information, as represented by baseload and peakload futures quotes, and historical market information, as mirrored by periodical patterns exhibited by time series of day-ahead prices. On a methodological ground, we combine nonparametric filtering with monotone convex interpolation in a way that the resulting forward curve is pathwise smooth and monotonic, cross-sectionally stable, and time local. On an empirical ground, we exhibit these features in the joint context of EPEX Spot and EEX Derivative markets. A backtesting analysis assesses the relative quality of our forward curve estimate compared to the benchmark market model of Benth et al. (2007).