

Can wholesale electricity prices support “subsidy-free” generation investment in Europe?

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Abstract Using a Pan-European electricity dispatch model we find that with higher variable renewable energy (VRE) production wholesale power prices may no longer serve as a long-run signal for generation investment in 2025. If wind and solar are to be self-financing by 2025 under the current European market design, they would need to be operating in circumstances which combine lower capital cost with higher fossil fuel and/or carbon prices. In the absence of these conditions, long term subsidy mechanisms would need to continue in order to meet European renewable electricity targets. More VRE production will exacerbate the ‘*missing money*’ problem for conventional generation. Thus, closures of unprofitable fossil fuel generation would sharpen and increase energy-only prices but would put more pressure on ancillary services markets to support system stability. Thus, the question of the need for a market redesign to let the market guide investments in both renewables and conventional generation would seem to remain.

Keywords electricity market design; electricity regulation; wind energy; solar energy; electricity generation investment; ancillary services; capacity remuneration mechanisms; energy-only prices.

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