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Projekt: The Transition to a Renewable Electricity System and its Interactions with Other Policy Aims (TRIPOD)

[Dachzeile]

The EEG as the core instrument in German climate policy

An opinion by Marc Melliger, Johan Lilliestam, Richard Thonig, Léonore Hälg and Sebastian Sewerin

Some German political parties and economists suggest ending the Renewable Energy Sources Act (EEG) surcharge in the power bill and instead financing renewables through the carbon tax. While the recent carbon pricing debate has focused on equity and political feasibility, it has neglected the elephant in the room: how would this change affect Germany's ability to meet the 2030 climate goals? Here, we show that this refinancing would put climate goals at risk. Purely market-based renewables are not yet viable, the change could therefore slow down their already sluggish deployment. We thus argue that the EEG remains the quintessential instrument for German climate policy in the coming decade.

The charged debate about the surcharge

As the 2021 federal election campaigns of German parties are gaining momentum, questions of climate change and social equity are moving to the centre of the debate. One question revolves around the carbon tax on fuels and heating. Most parties have planned to increase it. But to ensure electability, they need a good financial redistribution mechanism. A popular proposal is to abandon the EEG surcharge in the German power bill. If this were to happen, existing and future EEG projects would be financed solely through the income from the carbon tax.

While this proposal has broad support from energy economists, politicians, and consultants [\[1\]\[2\]](#), others criticise the social and environmental effects it might have [\[3\]\[4\]](#). There is also the argument that resulting investment incentives are indirect and only affect a share of

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companies [3]. For this reason, we agree with Lehmann that direct expenses for industrial policies would be more productive.

Support schemes like auctioned premiums or feed-in tariffs enabled by the EEG have been essential to expanding renewables. If Germany changes the financing of the EEG law, future support will depend on federal budget negotiations and EU state aid decisions. This might lead EEG support instruments to end prematurely a risk for meeting the 2030 climate goals.

The problem with renewables in the current market

But why is it a risk to end support? Renewables are getting cheaper, and some projects are already subsidy free. Isn't now the time to end support? We don't think so. While support in the sense of "additional money" will become less important, support systems tackle some fundamental problems.

First, renewables do not fit well with the existing wholesale market. Marketprice signals are of little use for wind or PV. As their production depends on weather conditions, they are quite inflexible and cannot increase output in response to prices. More importantly, renewables currently cannibalise their own revenues. When only renewables meet the power demand, they fully determine the wholesale power price. Because this price is based on shortterm running costs basically zero as sunshine and wind are freemarket revenues will be very low. Hence, the question is not whether to end support, but what to replace it with.

Exposing renewables to the market is a risky option

A market-based renewables expansion would rely on the carbon price and flexible demand. What does this mean? First, thanks to a high carbon price, producers of carbonneutral power earn a higher income. Second, with sufficient demand flexibility, companies and households can shift their power consumption to times when renewable production is high, and prices are low which would then increase the price again.

In theory, these points allow for profitable renewables projects. However, demand is currently inflexible and the willingness of consumers to adapt unclear, so Germany first needs better technical and institutional solutions to harness the full potential of flexible demand. Moreover, European carbon prices are volatile and thus hard to predict. Above all, they can only affect the price if there is carbon in the system. As renewables take over, there will be fewer and fewer hours of fossil generation; and when 100 percent renewables has been reached, perhaps during the 2030s, there will be no carbon left in the power system, and the carbon price will not affect the electricity price at all. This uncertainty already affects projects that are planned today, as their project lifetime is typically 25 years or longer.

Thus, the market solution may incentivise investments today, but its effect in the short term is uncertain and questionable in the long term. Even if the market could organise the power



plant dispatch in a manner that keeps prices above zero [5], it may still be hard to keep the prices high enough, making investment cost recovery highly uncertain for investors.

Rethinking “the market” for the needs of renewables and their producers

With the EEG solution, we suggest raising auctions from a support instrument to the central market mechanism. It will regulate prices and be better adapted to the needs of renewables. Because competitive auctions will still determine prices, investors cannot make windfall profits (or less so) but earn sufficient income to cover their technology and capital costs. In addition, auctions are a practical tool to distribute grid access.

Research shows that guaranteed access to the grid and predictable prices lower risks [6][7][8]. This in turn lowers capital costs and bids in auctions, which decreases the costs of the energy transition. Stable and granted financing for EEG projects will also lower associated policy risks. We therefore believe that the EEG solution is cost-effective, despite its direct state involvement.

A rapid expansion of renewables is still the most important task for politics

In a nutshell, intermittency and integration issues are unresolved, stability still relies on conventional generation, demand flexibility has a long way to go and the viability of carbon prices in a renewable power system is questionable. Markets are thus not ready to provide a self-sustained investment environment for renewables. EEG auctions, by contrast, currently provide a risk-reducing, cost-effective and stable framework for expanding renewable capacity.

By 2030 (and beyond), Germany needs to rapidly expand renewable capacity and ensure enough capacity is added, policymakers should keep auctions as the principal support instrument. If the German government puts EEG projects on shaky ground, the future of the EEG and hence the future of renewables deployment in Germany will be less certain.

While social equity is very important, there are other means to create a fair system [3][4][9]. It is now time for the debate to move on to the question: **How are we going to build enough renewable capacity by 2030? This remains the key question of any climate policy, and the EEG the most important tool to reach it.**

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