

Empowering the balancing markets for the energy transition

Confidentiality class: None (C1)

February 22

Vattenfall's views on the on the future of balancing markets.

The balancing markets are becoming increasingly mature. With new technologies allowing for shorter lead-time for activation, balancing markets will become the centerpiece of the electricity positions going forward on the path to carbon neutrality. To ensure that these markets keep up with the pace of the energy transition, we make recommendations for their functioning. These are:

- Cross-border cooperation
- Pooling of resources and renewable assets
- Reconsideration of price caps
- Further digitization and transparency

We argue that with these principles for market development, the right investment signals for renewable sources are given, while allowing the balancing markets to flourish at the same time. The measures should be seen as means to ensure a level playing field where all classes of assets can assume their responsibility and be part of the solution. Balancing markets are to meet the increasing demand for flexibility that is a consequence of the share of renewable power in the grid with unavoidable swings and deviations.

The legal framework already allows to take the steps we suggest and we therefore invite TSOs to take the initiative to forge ahead.

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Vattenfall is a European energy company with approximately 20,000 employees. For more than 100 years we have electrified industries, supplied energy to people's homes and modernized our way of living through innovation and cooperation. Our goal is to make fossil-free living possible within one generation. Everything we do and the decisions we take shall lead to this goal. This is the basis of Vattenfall's strategy, and we advocate for a regulatory environment that makes this transition possible – in the energy sector and beyond in transport, industry etc.



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Background

Balancing markets play an important role for the stability of the electricity grid. After closure of the “market timeframes” of long-term, day-ahead, intraday, the balancing markets provide a forum to match portfolios and ensure supply and demand are matched. With the increased roll out of renewable sources and accompanying uncertainty on their production due to changing weather conditions, the balancing markets play an ever more important role. We propose market-based principles to support both the rollout of renewables and system security.

State of play of the balancing market integration

The EU electricity market is rapidly adapting to keep in lockstep with the energy transition. Market integration is progressing, especially the day-ahead (DA) and intraday (ID) markets are becoming increasingly mature. While the focus in the regulatory discussions has been on these short-term markets, increasing attention should be also given to the balancing markets and their design. With new technologies allowing for shorter lead-time for activation, balancing markets will become the center piece of the electricity positions going forward on the path to carbon neutrality. Balancing markets are key to meet the increasing demand for flexibility that is a consequence of the growing share of renewable power in the grid with its unavoidable swings and deviations in production. It is essential that balancing markets are designed such that they attract high liquidity and efficient pricing. This will guarantee safe operation of the grid at efficient costs.

The establishment of the cooperation for Frequency Containment Reserves (FCR) and the development of the new balancing platforms for manual (mFRR) and automatic frequency restoration reserve (aFRR), MARI and PICASSO in 2022 in line with the Electricity Balancing Guideline (EBGL) are a welcome first step in further balancing market integration. These examples should be used as an accelerator for future integration projects. The concept is proven; now let's pick up the pace on cross-border cooperation, pooling of capacities, and market-oriented approaches for all balancing markets. Vattenfall invites TSOs to be the driver of this integration. To engage in a constructive discussion, Vattenfall suggests the following aspects going forward:

- **Cross-border cooperation:** an integrated market ensures that extreme price hikes can be levelled across countries and ensure the market works efficiently. Efforts should be made to further harmonize entry requirements into balancing markets, so that barriers to entry are minimized. This calls for further coordination between member states on the outline of their market design. Moreover, the product types should be integrated on a pan-European level. Specifically, 15 minute products have the future, so that maximum optimization of portfolios can be achieved. It follows that this harmonization should be applied throughout integrated balancing markets.
- **Pooling of resources and renewable assets:** TSOs should develop balancing products that stimulate the pooling of resources and RES assets. Concretely, this should allow to combine RES assets such as combined wind and solar or RES/storage hybrids. In addition, pre-requirements to participate in the market should be relaxed. It is for example currently very hard to meet pre-qualifying requirements for wind assets in Germany, with in fact only one asset qualifying at the moment. This illustrates that there is a need for realistic requirements, especially for ramping down procedures. This can be achieved by only taking the outcome of the pool into consideration for the pre-qualification, and not the individual components in the pool. Contractually, availability, longer contract procurement or duration (i.e. month ahead), and symmetric products should be tendered separately (i.e. up and down in different auctions not together). By pooling renewables, they can take responsibility for balancing more easily, not only reaping the benefits of the market. The market design

does not have to be adapted specifically for RES infeed, but RES should have a level playing field to leverage against conventional assets.

- **Efficient markets:** Balancing markets need to be designed such that they attract high liquidity and work well with the spot and intraday markets. Besides ensuring that enough balancing capacity and power is available, this is also needed to ensure efficient price formation. In the current German balancing markets it is for instance being observed that the “RAM” – intraday markets for activation power- are not very liquid as seemingly many market participants prefer the secured income from intraday markets compared to uncertain income for activation power as the likelihood of being called is sometimes small. This is unideal as it means that there is little reserve margin in the offered activation power and also, that prices are formed on limited liquidity.
- **Reconsideration of role of price caps:** In an efficient and mature market with high information transparency, prices will be formed efficiently and interventions in free price formation will be neither needed nor desirable. However, as of today, balancing markets are not yet mature markets as they lack high information transparency and liquidity. Until markets are fully mature (i.e., with an integrated cross-border design and sufficient participation to ensure a transparent bidding process), price caps can be an interim measure to compensate for the lack of transparency, to ensure generators are not surprised by price spikes that could potentially lead to them going bankrupt in case of extreme spikes. This way, price caps are an interim measure while root causes in market design are being addressed. Until this point is reached, price caps should be harmonized and set at a reasonable level, with a transparent methodology on how to reach the amounts for the caps. Their purpose should be to ensure that sufficient capacity is offered to the market, while avoiding extreme hikes that would push market participants out of the market. For example, the height of the cap could be taken from a percentage of the Value of Lost Load (VoLL) or should be flexibly adapted to reflect the price levels on an individual day, by multiplying the spot price with a factor x . At least, the height of the price cap should be sufficient to avoid it being hit all too often, but to cushion in excesses. This logic has already been applied to the DA and ID market (as enshrined in article 10 of the Electricity Regulation (EU) 2019/943)). The periodic review of the height of the limit helps to ensure that flexibility on the price caps can be maintained and followed by market participants. Moreover, if technical price limits are to be in place, their impact on the algorithm performance and the rationale for a certain price cap as opposed to the increased social welfare should be transparently demonstrated.
- **Further digitization and transparency:** On a more practical level, TSOs should investigate how to integrate virtual generators over larger geographic areas, also to keep in step with the ongoing digitalization. This calls for further investments in the auction tooling and software from TSOs. This should ensure they are up to date, or at least sufficiently stable to facilitate the market developments. Moreover, the transparency on the grid status should be enhanced to show imbalances and activations in real time. This information is needed for market participants to optimize their portfolios. Best practices of such implementation are found in the UK and Dutch market, whereas the German market could still make significant improvements.

Vattenfall looks forward to continuing a constructive dialogue with all partners involved to commonly achieve the market that best serves the climate and societal goals as soon as possible. The legal framework already allows to take such steps and TSOs could take the initiative to forge ahead. In particular, we are eager to engage on these identified barriers for RES access: shorter lead-time for activation, increasing stabilization and digitization, further cross-border integration; and most importantly, using a consistent market design that ensures high liquidity and efficient price formation.