# Presentation: How are bids selected?
**Bid selection basics**

Q: Is the price the most significant parameter when bids are selected, or does for instance geographical location matter?

A: Bids will be selected mainly based on price.

# Presentation: Cases based on your question
**Short activations**

Q: If everybody use the presented example of conditionally linked bids to avoid short activations, the effect would be the same as when no one uses it?

A: The example illustrates <u>one</u> example of how conditionally linked bids can be used to avoid short activations. All assets have different conditions and different cost which the bid should cover, which in turn the bid attributes should be used to reflect.

Q: If the AOF selects a conditionally linked bid for QH1, does it mean that the algorithm will also activate the linked bids for next QHs?

A: The AOF optimizes for each QH and will not look into future QHs. It does not look further ahead than the next QH. Activation of a conditionally linked bid only means that the linked bids in the following QH will be made available for activation, and not that they will actually be activated.

Q: Is it correct that the AOF will only optimize for the next QH and select bids only based on bid price, not bid attributes?

A: The AOF optimize to minimize cost. The bid attributes will tell the algorithm which bids that will be available but the algorithm will not consider how the selected bids will affect the availability of bids in next quarter.

Q: Why are B1 and C1 made unavailable when A1 is activated?

A: Complex bids can only be activated all at once or partly, at one single point in time. More information can be found [here.](here.)

Q: Is the technical link connected to the Multipart bid group or the individual bid component?

A: The technical link is between the multipart bid groups, not the bid components in the bid group. I.e. the presentation was inaccurate. The direct activation of A1 will not only make the bid component A2 unavailable but instead make the whole multipart bid group unavailable. It will have the same effect as presented and the capacity of the cheapest bid component can still be submitted to the capacity market and fulfill your commitment.

**Direct activation in the last QH of an hour**

Q: How come the different TSOs accept different solutions?

A: Svk's dispatchers have raised the importance of knowing that the direct activations will always be kept for the following QH. With the solution Statnett chose, the dispatchers would never know how the activations would be for the first QH in the hour, so this could not be accepted by Svk. For the solution Fingrid chose, at least the dispatchers know for sure that the BSPs will not deliver in the following hour. Svk see it very important to have delivery according to the standard product.

Q: Will the capacity market go to 15 min?

A: There is no plan in the near future for 15 min in the capacity markets.

Q: For the BRPs and BSPs, this will to be taken into account for each hour when planning production. If it is only a problem for the TSO a few hours each year, should we not change to another solution?

A: We encourage you to reply to the public consultation of the BSP agreement. If we receive a lot of input about this, we might need to make a new evaluation of possible solutions.

We can see that we received a lot of input regarding this in the consultation of the BSP agreement and at the meeting, we will therefore evaluate this again and inform you of the decision as soon as possible.

## Presentation: Bid availability
### Heartbeat

Q: In case you miss the heartbeat QH-18 and your bids are not sent to the AOF for scheduled activation, but get the communication up so you are available for direct activation – does this affect your fulfillment in case you have an obligation from the capacity market?

A: To fulfill an obligation from the capacity market, you need to be available for both schedules and direct activation. In the example above, you would not fulfill the obligation since you are not available for scheduled activation due to missing heartbeat.

Q: What will happen in case one major BSP is unavailable due to missing heartbeat?

A: Svk will use available bids and not make any corrections to prices. If a market player has IT-problems that can affect the market they should investigate their obligation to publish that information.

Q: If it's only one of the heartbeats that is important for determining the availability for each QH, can Svk resend the heartbeat a minute later in case a BSP is failing to answer?

A: The timing before we send all bids to the AOF is already tight, we have two minutes to send bids to the AOF after the last heartbeat in t-18. Additional heartbeats will be hard to implement.

# Presentation: How are the mFRR- and imbalance price calculated?

**Principles for pricing**

Q: Why is the price in the next quarter affected because of the direct activation in the previous quarter?

A: Because the direct activation will stay activated into the next quarter. For the second quarter, the BSP will get at least the price for the quarter of the activation, or a better price.

Q: How is the dominating direction in a quarter determined?

A: The dominating direction is determined by all activations (scheduled and direct) across bidding zones, i.e. for the uncongested area. The dominating direction will be determined for the hour until go-live of 15 min MTU. After 15 min MTU, the dominating direction will be determined per 15 min.

Q: How can the price be different in two adjacent areas even though we do not have any congestion between the two areas?

A: Due to direct activation being a local process and therefore it only impacts the price in the TSOs control area where the direct activation was made the price may vary between bidding zones.

Q: Can you use the BRP-agreement to regulate the wind power plants tendency to stop producing when the (mFRR/spot?) price becomes negative?

A: It is included in the BRP agreement section 3.2.1.

Q: Can the operator see this behavior (sudden stop of wind power at negative prices) in real time and adjust the mFRR demand?

A: If the operator in the control center observes this behavior and that the automatic balancing is not regulating in a favorable way, he/she may adjust the mFRR request. Svk are currently developing processes for different scenarios where adjusting the mFRR request will be one of the operator's tools for solving an issue.

Q: Why are we in the Nordics activating mFRR proactive instead of reactive as they do in the rest of Europe?

A: This question is complex and hard to answer in this meeting. But two reasons why we balance the system in the way we do is 1) that we can forecast imbalances

and we can use mFRR (difference from Europe, more difficult to forecast imbalances there). And 2) the Nordic mFRR resources are cheap, fast and easy to use. Historically we have used mFRR to balance our system but it is possible that it might change.

Q: When will we implement an energy market for aFRR?

A: We will not have a common Nordic energy activation market for aFRR as we have with mFRR, we will start trading aFRR energy when we join PICASSO.

Q: What will the reference price be when we join MARI?

A: Day-ahead price will not be used as reference price in MARI. There will be no cap and floor for bid prices. How to determine the imbalance price in MTUs without regulation is yet to be decided in Sweden.

**Pricing when the connection to Nordic AOF is lost**

Q: Is 99% a reasonable demand for IT availability?

A: 99 % availability requirement is for the Nordic price calculation module, the availability requirement for the AOF is higher.

**In case of low bid volume**

Q: Will these "emergency" activations (bidless activation) affect the imbalance price?

A: No, bidless activations that we will request in a situation when the bid volume is so low that we cannot maintain system stability will not impact the imbalance price.

Q: How do the emergency activations (bidless activation) work in the control room? Which regulation object or BSP do Svenska kraftnät choose and how are they activated?

A: Same routine as today, the operator in our controlroom will call the BSP and agree on the volume for activation, then they will register it in our market system.

Q: Is it supposed to be pay as bid for emergency activation or should we have some other function?

A: Bids will be paid the bid price.

Q: Is this emergency activation (bidless activation) activated by phone or electronic?

A: Same routine as today, they will be contacted by phone

Q: Can a BSP say no to the emergency activation (bidless activation)?

A: When Svenska kraftnät ask for additional mFRR-bids it is OK to say no, but if we are in such an emergency state that Svenska kraftnät due to operational security reasons ask to regulate a resource you are obliged to act on the request. Please see BSP Agreement section 5.6.

Q: Can SVK use disturbance reserve (storningsreserven) instead of this emergency activation? When is this activated compared to the disturbance reserve, are there some well-defined limits that the control room use?

A: Yes SVK can use the disturbance reserve in emergency situations.

**Analysis on imbalance price and activation income in mFRR EAM**

Q: Can the analysis on net imbalance cost and net activation income be done a longer period? The short period is misleading.

A: Unfortunately we do not have enough good quality data to make it for a longer time period.

Q: Can we say why the net imbalance cost in Sweden is lower compared to other control areas?

A: It is hard to say anything about trends as the analysis is made over a short period.

Q: Will the algorithm ever activate too much? Will it have to activate the exact amount even when an indivisible bid is at the marginal? Use of elastic demand?

A: Svk have implemented what we call "tolerance band", tolerance band allows for more activation (5 MW) if that is more cost efficient than to activate the exact mFRR-request.

**Settlement**

Q: What will BSPs receive in the report from Svk? MW or MWh?

A: Svk will report the activation in MW and the start time.

Q: Will the energy delivered in different QHs get different prices?
A: All the activated energy will get the price from the QH or QHs of the bid.

Q: Can we see in eSett what we get paid?

A: The quantity displayed in eSett will be per regulation object, separate for scheduled and direct activation, per direction. If the same regulating object is activated in succeeding QHs for different amount of MWs, you would need to

calculate the expected delivered energy according to the standard product in order to follow up on which part of the energy to allocate to the respective bids.

**BSP access net and next steps**

*Terms*

*MPLS: Multiprotocol Label Switching, or MPLS, is a networking technology that routes traffic using the shortest path based on "labels," rather than network addresses, to handle forwarding over private wide area networks.*

*ECP: ECP, or Energy Communication Platform, is an information exchange platform designed and maintained by ENTSO-E, the European Network of Transmission System Operators for Electricity. It offers a secure and reliable way for exchanging electronic messages between transmission system operators and other market participants. ECP is based on the Market Data Exchange Standards (MADES), which ensures that the information sent can only be read by the intended recipient*

*VRF: In IP-based computer networks, virtual routing and forwarding (VRF) is a technology that allows multiple instances of a routing table to co-exist within the same router at the same time.*

*SLA: A service-level agreement (SLA) is a contract between a service provider and its customers that documents what services the provider will furnish and defines the service standards the provider is obligated to meet.*

Q: Will the price differ between small and larger BSP?

A: Edielportal state that the BSP must set up at least one (1) connection in addition to the existing Internet connection. Prefereable is two MPLS connection. One for each datacenter. Furthermore, the choice of SLA level will also govern the availability and simplify for the BSP when issues occur. Thus the prices vary with ambition on service required

Q: Since only a "major" BSP will have to implement this, what is the definition of a major BSP?

A: Stated in the Edielportal. See [Generell tekniska Edielanvisning](#) and chapter 3.2.1.

Q: Germany are switching from one to another communication options, are we planning to use the same as Germany?

A: Don't know

Q: Last meeting we discussed sharing "vendors" and that 5 BSP would be able to share a vendor. Is this still an option? Are Telia and Tele2 ok with a vendor?

A: Telia/Tele2 only deliver connection with a set of VRF's. The content of the MPLS VRF connection is thus not of Telias and Tele2 concern. Svk has not shared any views on how the BSPs will use the MPLS connection. All connection arrangements is set up between Telia/Tele2 and the BSP. The VRFs can contain ECP traffic from BSPs or other types of traffic.

Q: If we have a third party vendor, and the vendor signs. The actors need internet to communicate with the vendor and that is a single point of failure. So is this helpful/necessary?

A: How the BSP set up the connection and internal routing is something that Svk cannot affect. However we strongly recommend that since you set up a redundant connection to Svk, single points of failures are managed.

Q: Since this only is implemented at Svenska kraftnät and not the other Nordic TSOs and we have a Nordic mFRR market, will this really make the whole system safer?

A: It will make the transmission between BSP and Svk more available. Not safer. Other TSO are looking for their own way

Q: Is the main reason for this is that Svk should be able to block all internet traffic?

A: Internet allows global access to incoming ports to Svk and BSP. DDOS and Zeroday exploits are the main objects of concern. Others may exist.

Q: Shouldn't SVK have the agreement with Telia and Tele2 instead? Since it is Svenska kraftnät that want this and the functionality is for Svenska kraftnät.

A: Svk cannot govern how the BSP set up their solution with Telia/Tele2. Also Svk cannot act as a go between for BSP access to Telia/Tele2 net since it will then need to set up an organization as a network provider proxy towards Telia/Tele2. Also, Svk cannot make private arrangements with BSP subcontractors. Thus Svk has delegated the responsibility and set up to the BSP and its subcontractors.

**Next step – go live planning**

Q: Statnett have communicated 10 o-clock in the morning for go-live mFRR EAM, is this true?

A: Time for go-live has not been decided yet. Statnett has informed in a stakeholder meeting that it might be at 10 o'clock. Svk will inform when we have a joint Nordic decision on time for go-live.