



Analysis and Recommendations on Dispatching Orders in the Balancing Market

Kyiv, Ukraine
December, 2020

Current Challenge

- **Up regulation bidding caps linked to DAM caps** motivates producers to focus trading on Balancing Power Market (BPM) instead of DAM and IDM
- When the system is in surplus, some generators **rely on down-regulation orders** and the **margin between DAM/IDM price and BPM down-regulation price** that leads to;
 - Difference between commercial and physical schedules up to 3 GW requiring huge efforts from dispatchers to balance the system in real time;
 - Frequent activation of balancing energy (dispatch orders) in opposite directions during the same hour;
 - Increased down-regulation orders for UkrHydroEnergo's pumped-storage plants (PSP) during low-load hours towards activation later during high-load hours within the same day;
 - Significant difference between debits and credits of the uplift account UA-I.

Dispatch Orders

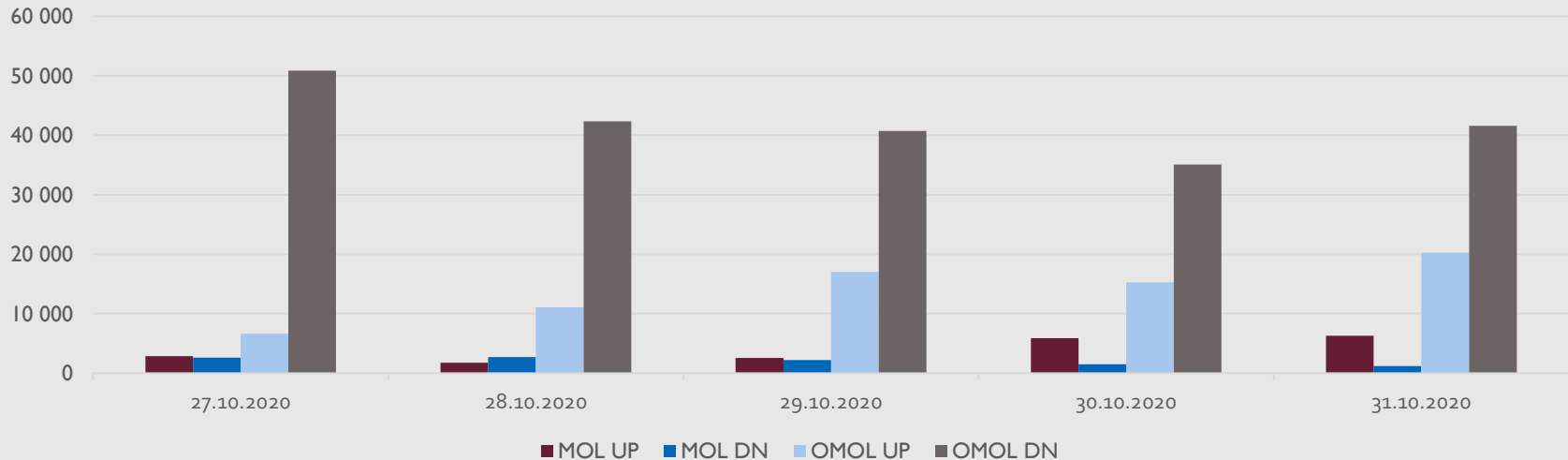
In addition to the merit-order-list (MOL) instructions, in order to balance the system and ensure limited net exchange with the neighboring systems, dispatchers has been issuing large volumes of out-of-MOL (OMOL) so that required balancing reserves for up and down regulation are secured.

Generators	Reasons for reduced generation (downregulation)	Reasons for increased generation (upregulation)
TPP, CHP	<ul style="list-style-type: none"> ensure required volume of automated ancillary services reserves at HPPs, TPPs and CHPs restore required volume of manual reserves (mFRR) for downregulation at units providing such services keep the plant off, although it is in cold state and hence not considered in the day-ahead planning stage as it is expected to generate based on trading results (to ensure that surplus in the system does not worsen when the plant starts generating) 	<ul style="list-style-type: none"> ensure the balance when PSPs are switched to pumping mode upon downregulation orders (since the system cannot be balanced during peak hours without starting the PSP in generator mode due) ensure the required volume of upregulation reserves
HPP	<ul style="list-style-type: none"> optimize the use of hydro resources 	<ul style="list-style-type: none"> optimizing the use of hydro resources
PSP	<ul style="list-style-type: none"> switch to pumping mode to ensure the required downregulation reserves 	<ul style="list-style-type: none"> generation mode to ensure the required upregulation reserves
Renewables	<ul style="list-style-type: none"> all other measures are exhausted to maintain the required up and down regulation reserves 	

MOL and OMOL Instructions

Considering that OMOL instruction volumes can be significantly higher than volumes provided by MOL instructions (especially for downregulation), there is a necessity to address the issue. Otherwise, **real-time prices for up and down regulation and imbalances does not reflect the real costs** and uplift account UA-I grows substantially.

MOL and OMOL orders, MWh

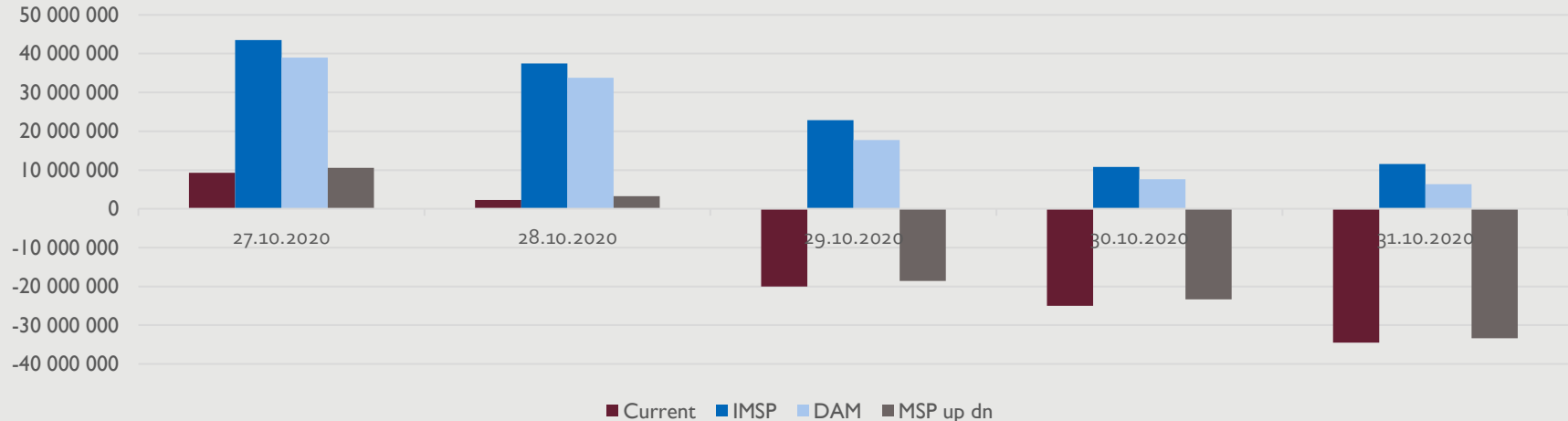


Pricing Approaches – Impact on TSO (the Settlement Administrator)

The financial result of TSO (surplus or deficit) under different pricing scenarios below for OMOL:

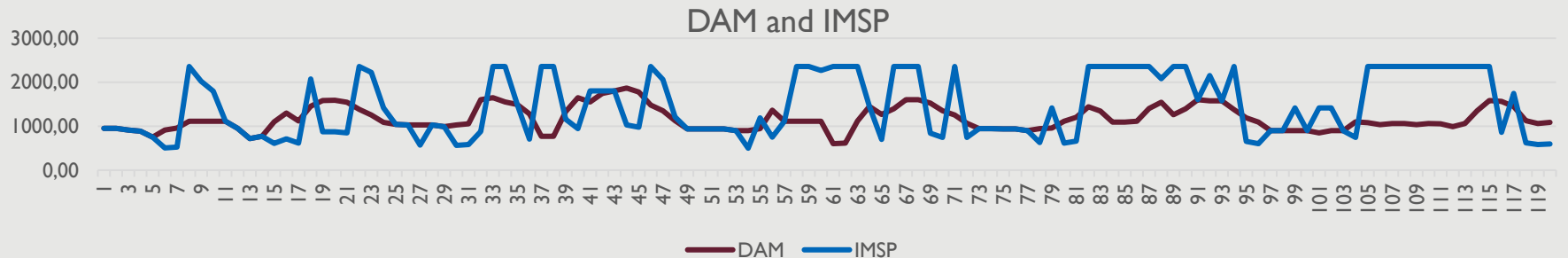
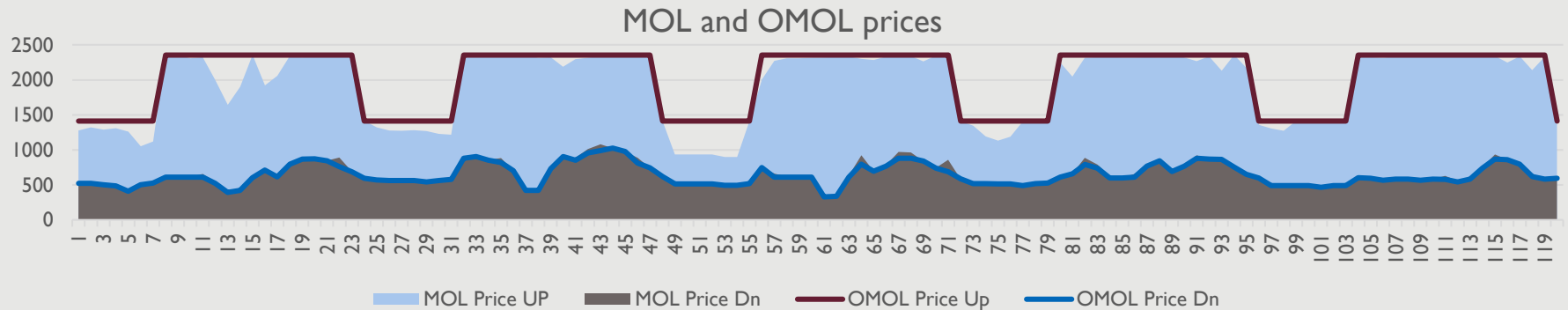
1. As is (paid at bid prices that are mostly at the cap level)
2. Using IMSP (imbalance marginal settlement price).
3. Using DAM price
4. Using balancing market marginal prices (MSPup and MSPdn)

TSO result, UAH



Pricing Approaches – Impact on Market Players (MPs)

Using IMSP may lead to controversies whereas DAM price can help to mitigate potential abuse by MPs. On the other hand, **using MSPup and MSPdn can also be considered** because when IMSP or DAM price is used MPs will simply try to take position within MOL and continue receiving orders as long as dispatchers need. Hence, issue of actual cost for up and down regulation and imbalances are resolved.



Recommendations

- PSPs should not get the down-regulation orders for switching to pumping mode. Otherwise, it is a clear abuse of market position. UkrHydro must buy required energy in market segments, preferably bilaterally from EnergoAtom, which has off-peak energy after PSO obligations. Downregulation orders for pumping should be considered only as exceptions in emergency cases.
- Specific requirements on using PSPs by the dispatchers should be addressed in the Grid Code.
- Ukrenergo should develop a clear procedure for OMOL instructions. The procedure must be approved by NEURC and include all acceptable cases categorized and explained.
- To eliminate the attractiveness of the BPM, day zone upregulation bidding caps should be linked to actual DAM prices while night zone upregulation caps might stay linked to DAM bidding caps.
- In order to avoid abuses by producers during the quarantine, increasing downregulation bidding cap up to 80-90% of actual DAM prices should be considered.
- After a more detailed analysis, several other options can be considered for pricing of MOL and OMOL instructions to avoid abuses and decrease total balancing cost, hence uplift UA-I account size. Each past month and case should be carefully analyzed for a permanent solution.

— Thank you!

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