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## **DTEK Renewables Team Develops Algorithm To Improve Forecasting of Electricity Generation From Renewable Sources**



**DTEK Renewables**' specialists have themselves developed and are putting into operation an algorithm to forecast electricity generation, which within three months has shown better forecasting results for wind farms than those provided by contractors.

To forecast its own electricity generation, DTEK Renewables previously held a long-term tender where 13 companies took part and eventually selected 3 for cooperation. They provide professional forecasting services that are closest to the actual generation figures.

At the same time, the company's specialists decided to use their own experience and expertise to assess opportunities for improving the generation forecasts.

Having assessed global benchmarks, DTEK Renewables employees began to develop their own forecasting algorithm even before the full-scale Russian invasion of Ukraine.

Step by step, the team of two colleagues made new discoveries that showed that each company providing forecasting services has both its advantages and certain shortcomings in data.

**Kostiantyn Stiopin, DTEK Renewables' Technical Supervision and Commissioning Manager**, is a creative personality and innovator who always asks himself the question: "How can we make existing solutions better?" In his spare time, he was engaged in improvements and created a forecasting algorithm.

"Even in such difficult times, we need to find better forecasting solutions. After all, the load on the energy system and its balancing depends on the accuracy of the forecast. I expect that the developed algorithm can reduce the total imbalances for our three operating plants by more than 20 GWh per year," said Kostiantyn Stiopin.

At a certain stage, **Andrii Horb, Chief Specialist of the Operations Department**, joined the project and helped Kostiantyn understand the level of accuracy compared to other companies' data. Andrii compared and analysed the indicators and gave Kostiantyn feedback so that he could improve his model.

To achieve even better project performance, the team is working to ensure that the software can train itself and improve accuracy using artificial intelligence technologies.

"This is not the first time our innovation team has proven its effectiveness, as it was with Nikopolska and Pokrovska Solar Farms, where we managed to optimise the operation of the plants and increase generation. With such specialists, who are proactive and take a proactive approach to work, our business successfully overcomes any technical obstacles, challenges and trials," says **Oleh Solovei, Deputy CEO of DTEK Renewables**.

The results of the data verification for 2024 showed that DTEK Renewables' own developments are on average 2% more accurate (for a period of 3 months) than the indicators of the world leaders in the forecasting market with whom the company cooperates. The employee's development improves the forecast, reducing the volume of imbalances by 2.5 GW from the average forecast for three months.

"Even a 1% improvement in forecasting is a significant step forward. A more accurate forecast also has a positive impact on Ukraine's energy system, which is especially important in the current volatile environment. If the entire renewable energy sector can improve forecasting by at least 1%, it will be an even more noticeable and important step towards a more reliable operation of the energy system," said Oleh Solovei.

Currently, the company's proprietary development is being piloted at DTEK Tiligulska WEP along with the generation calculations of the other two suppliers for more accurate forecasting. Kostiantyn Stiopin is also working on an algorithm to improve generation forecasts for solar farms and once the results are confirmed, the model will also be used for solar farms generation forecasting.