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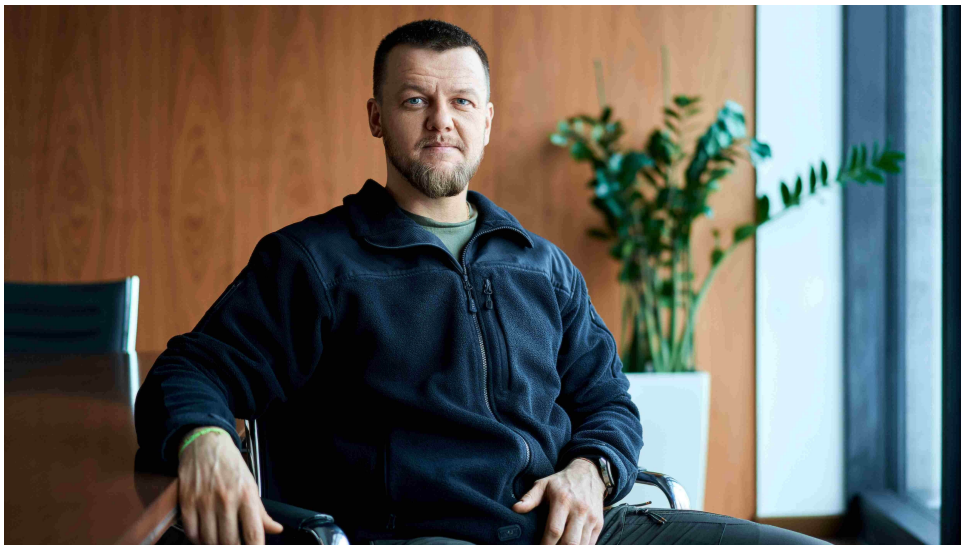
Half of Generation In-House by 2030. How the War and CBAM Are Changing Metinvest's Energy Strategy — Group COO Oleksandr Myronenko for Forbes

Metinvest Group is investing over US$44 million in its own power sources — gas piston and solar power plants — to safeguard production against wartime energy risks. In April, the Group launched its first gas piston power plants, with more to follow by the summer. The next stage will involve constructing nearly 40 MW of solar power generation. The plan is to meet up to half of the Group's needs with in-house capacity by 2030. Oleksandr Myronenko, Metinvest's Chief Operating Officer, spoke to Forbes Ukraine about the investments, the challenges and the energy strategy.



Myronenko said that the Group launched its first gas piston power plant on 15 April. Four units with a combined capacity of 10 MW will strengthen the energy security of the Kamet Steel metallurgical plant, which requires up to 150 MW in total.

By the end of May, Metinvest plans to commission an additional 19 MW of gas piston units at Northern Iron Ore and Central Iron Ore. The total investment in gas generation in 2025 will amount to US$26 million.

In 2025-2026, the Group plans to invest US$18.1 million in 37 MW of solar power plant capacity at Central Iron Ore and Kamet Steel.

The payback period for gas generation is three to four years, and for solar, five to six years. Annual savings of US$8.5 million are expected from using in-house electricity generated by gas piston units, along with a total of US$4.9 million from solar panels.

Myronenko noted that Metinvest, the country's largest electricity consumer, plans to meet 50% of its energy needs with in-house generation within three to four years. In 2024, the Group's average consumption was 672 MW, compared to 1,405 MW in 2021, before the war. For context, Kyiv consumes up to 1,200 MW, according to data from energy company Yasno.

What challenges does Metinvest face on its path to energy independence? Metinvest's Chief Operating Officer explains.

The danger of dependence

Power outages in the general grid are our Achilles' heel — and they never end well for metallurgical equipment.

If a steel plant suddenly loses power, hundreds of tonnes of liquid metal will solidify, and it will take two to three months to remove it from the furnace. Molten pig iron, heated to 1,400 degrees Celsius, can burn out equipment.

If the power supply to a mining and processing plant is suddenly cut, the water pumps will stop operating. This will lead to the flooding of the quarries and processing plants.

To avoid a sudden shutdown of equipment and maintain it in “standby mode” for up to 10 hours until power is restored from the external grid, Metinvest has purchased 242 diesel generators with a total capacity of 22.9 MW at a cost of US$4.3 million. The decision was made following the first blackouts caused by russian attacks on Ukraine’s energy infrastructure.

Such generators are needed just to prevent accidents. To meet its production needs, the Group is developing more powerful power plants, including gas piston and solar ones, as well as considering the installation of gas turbine generators.

Under favourable conditions, Metinvest could achieve 50% energy independence within three to four years. What is required for this? First and foremost, it needs a favourable investment climate and affordable loans with attractive interest rates. It will also depend on external conditions, especially on the course of the war. I cannot say yet how much it will cost and what the energy mix will look like — we are currently developing a strategy.

First gas piston power plants

The idea to install gas piston power plants emerged at Metinvest in response to the blackouts in the autumn of 2022. However, the project was only approved in March 2024, once the Group had sufficient funds available. Metinvest purchased 29 MW of gas piston generation, which will be installed in April-May 2025, using US$26 million of its own funds.

The criteria for selecting the manufacturer of gas piston units included rapid start-up capabilities, generator efficiency, manufacturer service guarantees and cost.

Metinvest had planned to launch its first gas piston power plant at Kamet Steel in January 2025, but this did not happen until April. The hardest part was securing the units on the market amid intense competition from other Ukrainian companies.

Metinvest then lost three months because the initially selected supplier terminated the contract, saying: “I was offered a price one and a half times higher than yours.” It then proved possible to sign a contract with Dalgakiran, another supplier.

The units arrived in February, with the installation and commissioning process carried out in March and April, followed by the launch on 15 April.

Another four gas piston generators from Cummins, with a total capacity of 8 MW, were installed at Central Iron Ore. Northern Iron Ore received four gas piston generators manufactured by Jenbacher with a combined capacity of 11 MW. Following test runs, they will be commissioned in the near future.

New generation infrastructure

Preparing the infrastructure for the gas piston power plants involved constructing roads, laying concrete platforms,

installing transformers and new electrical equipment, connecting gas lines and building protection against shelling. Additionally, the units were distributed across the territories of the plants to ensure sufficient spacing between them. However, it is unlikely that the russians will waste a US$5 million missile to hit a US$1.5 million unit.

The most challenging part was at Central Iron Ore, where a trench had to be dug beneath a railway line and a motorway to lay a gas pipeline to the station.

Green steel and electrometallurgy

Solar power will help to reduce the carbon footprint of Metinvest's steel, although not to the same extent as the modernisation of equipment and a transition to electrometallurgy.

Metinvest plans to shift to electrometallurgy after the war ends. This will require US$8 billion and seven to eight years.

The carbon footprint is important for companies exporting steel to the EU. From early 2026, they will be required to pay a border carbon tax under the Carbon Border Adjustment Mechanism (CBAM).

Metinvest already uses up to 70% green electricity, as the share of nuclear and renewable energy in the energy mix has increased since russia destroyed nearly all of Ukraine's thermal power plants. But we need time to modernise equipment and comply with EU standards. So, I would like Ukraine's CBAM obligations to be postponed by three to five years, taking the war into account.

A step abroad

Metinvest owns five enterprises abroad: a coal mine in the US, two metallurgical plants in Italy, and one each in the UK and Bulgaria.

Currently, Metinvest sees no point in developing energy independence at these enterprises, as they benefit from stable electricity supplies.

However, together with DTEK, we are considering the construction of a solar power plant on the grounds of the Promet plant in Bulgaria. The idea of building a solar power plant there emerged because the plant has a large amount of unused land: its design capacity is 3.5 million tonnes per month, but currently there is only one rolling mill installed with a capacity of 0.7 million tonnes.

The plant's own consumption is relatively low, so there is potential for selling electricity. We will provide the land and infrastructure, while DTEK will handle electricity sales on the European market.

The timeline for the installation is still to be determined. Negotiations are ongoing, and interested parties are visiting the site and carrying out calculations.

In-house generation before the war

Metinvest's enterprises had in-house electricity generation long before the full-scale war, although only at its metallurgical and coking plants. There, combined heat and power (CHP) plants are necessary for producing steam and electricity by utilising gases that are by-products of the production process. They covered a small portion of the plants' electricity consumption. Zaporizhstal covered the largest share of its own needs: up to 35 MW out of 150 MW.

The modernisation of in-house steam generation over the past three years has increased its nominal capacity to 80 MW. In particular, the capacity of the CHP plant at Kamet Steel has been tripled to 28 MW.

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