

## ENVIRONMENTAL ACTION

# ENERGY EFFICIENCY



## GRI 103-2

**Metinvest continues to reduce the energy consumption of its production assets and cut the consumption of natural resources. As part of its systematic approach to saving energy and increasing energy efficiency, the Group has an Energy Programmes Division in the Operational Directorate at the Executive Team level, as well as Energy Management and Energy Efficiency departments at each production asset. The departments are responsible for local production operations and energy efficiency activities, and they provide reports on the effects that have been achieved to the Head of Engineering. We develop energy efficiency targets and energy saving programmes at all assets on an annual basis.**

Since 2013, we have been implementing an energy management system that conforms to the ISO 50001:2011 international standard and eight of the Group's assets have certified their energy management systems as compliant with its requirements<sup>8</sup>. In 2019, Ingulets GOK was certified in accordance with ISO 50001:2018, the newest energy management system standard.

## GRI 103-3

An authorised ISO certification body carries out annual external audits of each asset. In 2019, our assets all successfully passed the external supervisory audits. The external audits confirmed that our documentation management system complies with ISO requirements, which cover standards, protocols, the energy conservation commission and documentation related to energy initiatives. Our internal audit matrix also

includes these issues, which allows us to check our findings even before the external audit.

Metinvest's regular internal audits of energy management systems guide us as we set goals for the year's energy saving programmes. All audits are performed in accordance with our Procedure for Conducting Internal Audits of Energy Management System at Production Sites, which lays out requirements for the composition of the audit committee, the frequency of inspections and reporting procedures. Metinvest has also developed a scoring system for assessing how the ISO is being implemented. We completed nine internal energy management system audits in 2019, allowing us to ascertain the status of these systems at each asset. Ilyich Steel delivered the best results of all production sites, followed by Avdiivka Coke and Mariupol Machining and Repair Plant.

In addition, we have developed and implemented a Methodology for Conducting an Energy Audit at Production Sites, consisting of basic principles and requirements, which lays out a unified approach for energy audits at the Group's assets. This allows us to identify inefficient use of energy resources, select optimal equipment and develop measures to reduce energy consumption. The energy saving committee and energy management teams at each production site are responsible for the auditing process.

8 Central GOK, Zaporizhia Coke, Azovstal, Ilyich Steel, Avdiivka Coke, Inkor Chemicals, Kryvyi Rih Machining and Repair Plant and Mariupol Machining and Repair Plant.



## METINVEST'S SYSTEM FOR MANAGING ENERGY EFFICIENCY

### Technological measures

- Management of raw material quality
- Technological optimisation
- Process automation

### Technical measures

- Equipment repair
- Modernisation and replacement of inefficient equipment
- Development of accounting systems

### Operational measures

- Development of differentiated standards and analysis of deviations
- Optimisation of technical modes and equipment
- Introduction of ISO 50001 and regular audits

#### GRI 302-1; 302-3; 302-4

In 2019, Metinvest decreased its total energy consumption as measured in tonnes of oil equivalent<sup>9</sup> (TOE) by 7% year-on-year by reducing coke usage and increasing pulverised coal injection at Azovstal following the commissioning of blast furnace no. 3.

#### Direct energy use\*, '000 TOE<sup>10</sup>

Year	Natural gas	Heating oil	Coke	Diesel fuel	Petrol	Metallurgical coal	Electric power	Total
2017	1,189.6	0	2,394.7	207.1	2.7	2,840.1	957.3	7,591.5
2018	1,312.0	0	2,256.3	213.5	2.5	3,072.0	975.4	7,831.7
2019	1,259.8	0	2,011.6	221.7	2.0	2,738.3	1,033.0	7,266.4

\* Renewable sources were not used.

<sup>9</sup> A tonne of oil equivalent is a unit of measurement equal to the amount of energy released by burning one tonne of crude oil.

<sup>10</sup> Only purchased (or extracted) fuel was factored into our calculations. The coefficients used for conversion to TOE are as follows: natural gas – 1.15, heating oil – 1.37, coke – 0.94, diesel fuel – 1.45, petrol – 1.49, coal – 0.888, electric power – 0.123.

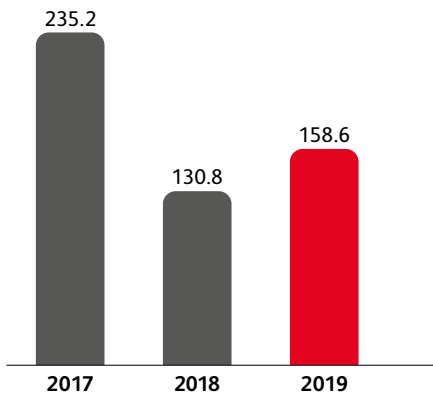
**ENVIRONMENTAL ACTION**  
**ENERGY EFFICIENCY CONTINUED**

We have been able to successfully identify opportunities to recover and utilise energy sources, which allowed us to increase the total amount of energy saved by 22% year-on-year<sup>11</sup>. We completed various energy-saving programmes at our production assets, which led to an economic effect of US\$38.2 million.

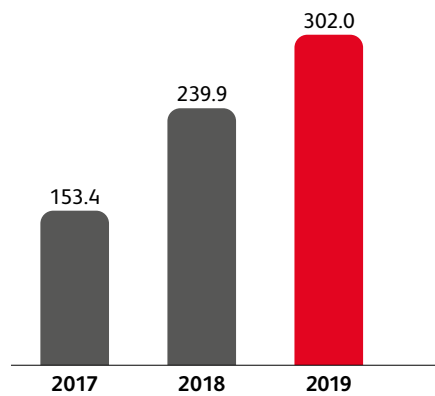
Electricity savings increased by 26% year-on-year thanks to effective modernisation projects at Azovstal, Ilyich Steel, Northern GOK and Central GOK. Such projects included optimising the vacuum filters and vacuum pumps used in operational processes, using blast furnace gas to generate electricity supplies, increasing in-house electricity generation and modernising the lighting system. We will keep working on optimising equipment to reduce idle time and change equipment usage phases to lower electricity costs.

In 2019, Metinvest spent US\$6.9 million on energy efficiency programmes. An increase in the number of energy service projects financed by YASNO Energy Efficiency LLC (YASNO; formerly DTEK ESCO) has resulted in a 39% year-on-year decrease in spending on energy efficiency programmes, while the number of projects went up from four in 2018 to 12 in 2019.

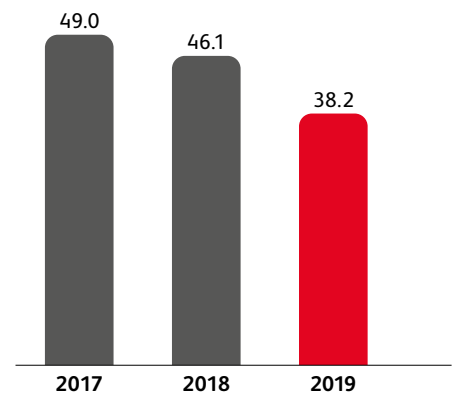
**Total energy saved as a result of energy efficiency measures, '000 TOE**



**Electricity savings, million kWh**



**Economic effect of energy conservation, US\$ million (excl. VAT)**



Note: A 30% decrease in the cost of natural gas has led to a nearly 17% year-on-year reduction in the economic effect of energy conservation.

<sup>11</sup> For more information on energy savings, please refer to Annex 3.

