12.7 ENERGY

Reducing the consumption of energy is a permanent challenge in conventional steel production—for both environmental and cost reasons. After all: Energy costs still account for about one fifth of manufacturing costs.

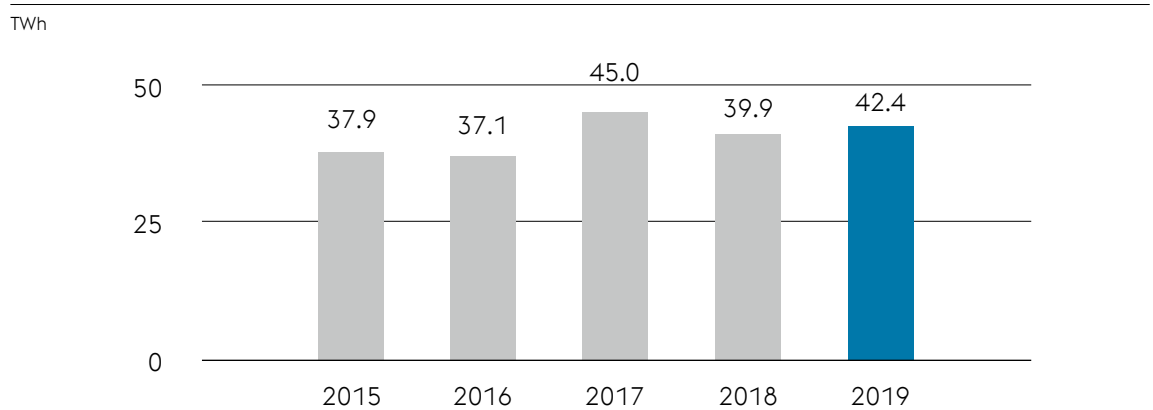
In voestalpine's conventional, integrated steel mills, energy efficiency gains are achieved through the continual optimization of process gas recycling, the use of waste heat potentials, and a comprehensive energy management system (in this respect, see also "Environmental Management Systems," page 64). In Linz (the Group's largest plant), for example, the specific energy consumption level has fallen by 19% since 1990 through process optimization and the cascading utilization of the energy used.

The amount of energy required to reduce the amount of iron ore required in the production of pig iron or crude steel always remains the same, irrespective of the technical processes utilized. Processes currently being researched with respect to decarbonization (see "Climate Protection," page 34) do not significantly lower the absolute need for energy. Instead, they merely replace the energy currently generated from coal or coke with the same volume of electricity from renewable sources and/or, in the long term, with hydrogen generated through green power.

The amount of third-party electricity that the voestalpine Group sources from the external network is negligible at this time, because it covers its energy needs itself mainly through fossil fuels. Process gases are converted into electricity in our own power plants within our steel facilities and are then re-used in downstream processing plants. Moreover, thanks to regenerative sources of energy (hydroelectric power, photovoltaics) many facilities already boast a high degree of energy self-sufficiency.

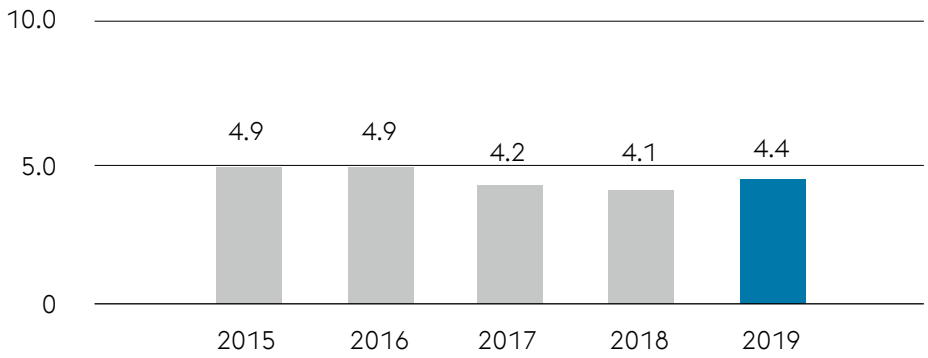
The total energy consumption of the voestalpine Group in the calendar year 2019 was 42.4 TWh (4.4 MWh/t of product), with Linz and Donawitz (the two crude steel facilities) accounting for 25.5 TWh and 6.3 TWh, respectively, and the direct reduction plant in Texas, USA, accounting for 5.4 TWh. The year-over-year increase (2018: absolute 39.9 TWh, specific 4.1 MWh) stems from the shutdown of Blast Furnace A in Linz during the 2018 relining work.

TOTAL ENERGY CONSUMPTION

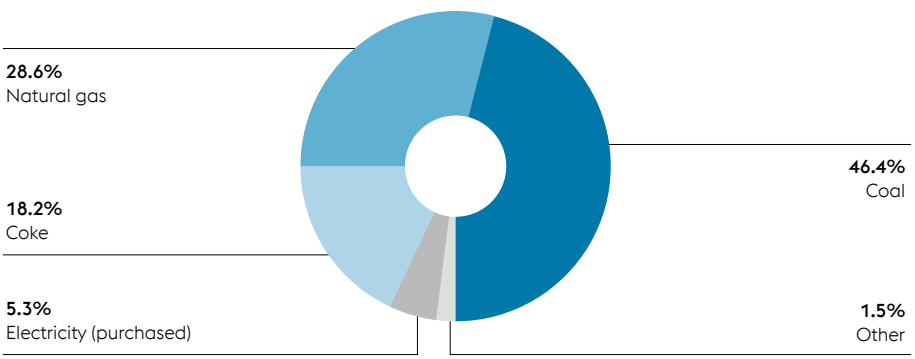


SPECIFIC TOTAL ENERGY CONSUMPTION

MWh/t of product



PERCENTAGE OF ENERGY SOURCES 2019



Coal, natural gas, and coke are the most important sources of energy. In 2019, a mere 5.3% of the energy required was purchased from external networks.