Energy saving in industry

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14 ways to save energy in factories

Energy demand is expected to be much lower across all industrial sectors in 2020, as lockdowns have reduced production and consumer demand. The difference in the scale of drops in energy use between energy-intensive and less energy-intensive sub-sectors (the "structural effect") will be a big determinant of changes in overall industry sector energy intensity. The last major financial crisis in 2008-09 showed that government stimulus spending can favour more energy-intensive industrial output. This crisis could have a similar outcome, depending on the design of stimulus packages.

Technical efficiency progress faces several challenges in the absence of targeted policy interventions, as shown by the example of high-efficiency industrial motors, where the crisis could sideline efficiency investments, especially from light industries where significant energy savings potential exists.

Industrial energy consumption is expected to be significantly lower in 2020 due to lower production. Across most industries, production was lower in the first half of 2020 than in the first half of 2019. Lockdowns reducing workers" movements curtailed production, while demand for upstream products fell from other sectors of the economy.

In India, the world"s second largest producer of cement, cement production was about 85% lower than in the same period in 2019, due to a combination of cement facility closures and weaker construction activity, both in India and in countries to which it exports cement. Investment in new building construction and retrofits, a major end-use for cement, is expected to decline by around 10% globally in 2020.

Certain sectors have already rebounded, particularly in China. After lockdowns were lifted in March-April, China"s steel sector increased production beyond 2019 levels for the first half of 2020, while reports suggest cement production also rebounded strongly in May. However, the net yearly result for 2020 is still expected to show lower industrial production and energy demand than would have occurred without the Covid-19 crisis.

The impacts of lower industrial production have flowed through to energy use. In the United States, electricity use by industry was 9% lower year-on-year in April, while natural gas use by industry fell 8% in May 2020, the largest year-on-year decline since the last global recession in 2009. Although industrial gas use had been flat before the pandemic (growing by only 0.1% in 2019) the pandemic has cut demand significantly, with the US Energy Information Administration projecting that industrial gas use will fall by 4.4% in 2020.

Stimulus spending has already helped revive upstream industries such as iron and steel

In some countries, government economic stimulus measures targeting industry are already reviving industrial

production. In China, 4638km of railway and urban rail infrastructure, worth USD14.7billion, was approved between January to June 2020 to help stimulate demand. These projects alone are expected to consume 23.8milliontonnes of steel, around 5% of China"s steel production, in the first half of 2020.

Likewise, a growing preference for private travel because of the health crisis, steady demand, as well as new stimulus measures for electric vehicles, are also likely to boost demand for iron and steel used in automobile manufacturing, in addition to reviving the automobile sector.

From an energy perspective, if the output of less energy-intensive industrial1 sub-sectors (such as textiles, machinery and equipment) declines more than the output of more energy-intensive sub-sectors (such as iron and steel, and cement), the overall energy intensity of industry would increase in the next few years. This is referred to as the "structural effect" on industrial energy intensity.

In the United States and Europe, lower consumer spending because of the current crisis has hurt manufacturing of less energy-intensive durable goods, such as motor vehicles, to a greater degree than more energy-intensive chemicals manufacturing, for example. It is currently too early to discern if global industrial output has shifted towards more energy-intensive manufacturing as a share of industrial output in 2020. However, in the UnitedStates, if data from the second half of 2020 are similar to the first half of the year, industry is likely to become more energy intensive, primarily due to a relatively larger share of output from the energy-intensive chemicals sector.

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