News

Industry sector calls for financial support for energy efficiency investment

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EU governments and regulators need to create new methods of financial support for investment in industrial energy efficiency, says Exergy CFO Luca Pozzoni.

As things stand in 2022, with COP26 behind us, much work needs to be done if governments and industries are to meet their net zero emissions targets for 2050 – and that work will require financing. According to the International Energy Agency (IEA)'s Energy Efficiency 2021 report, energy efficiency investment was projected to rise by 10% in 2021 to almost $300bn, due in part to help from proactive government policies along with the greater economic recovery. However, overall annual investment would need to triple by 2030 to meet the levels required in the IEA Net Zero Emissions by 2050 Scenario.

Similarly, the rate of improvement for energy efficiency would need to double from current levels to match the 2050 Scenario, recovering to its ten-year average after its worst year in a decade in 2020, where investment in energy efficiency contracted by an estimated 1%. Global energy intensity, used to measure the economy's energy efficiency, fell by 1.9% after a mere 0.5% in 2020. This is, of course, still well below the 4% decrease outlined in the 2050 Scenario for the 2020–2030 period.

The 2050 Scenario makes it clear that energy efficiency is the fastest pathway towards decarbonisation, and indeed, the prime factor in enabling green energy sources to outpace demand. The scenario sees the global economy grow by 40% by 2030, due to increasing populations and incomes, and yet involves 7% less primary energy. Only industrial energy consumption would be expected to rise by 2030 – increasing by around 8%. Even so, substantial progress in material and energy efficiency would allow the global economy to produce 9% more steel, 21% more chemicals and 5% more cement per year by that point.


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However, the path to get there is a stony one, with a number of obstacles in the way. According to IEA's World Energy Investment 2021 report, investment in industry energy efficiency is heavily affected by policies such as energy performance standards and incentive mechanisms for energy savings and emissions reductions. Currently, only 35% of the global industrial energy demand is covered by energy efficiency policies, a deficit that needs to be narrowed to deliver the scale-up of investment that would be required in climate driven scenarios.

An industry in need of support

For Luca Pozzoni, CFO of Exergy, an Italy-based organic rankine cycle (ORC) provider offering waste heat recovery solutions for the oil and gas, power and heavy industry sectors, there is currently a lack of support in Europe for financing energy efficiency projects in industry – and cites current legislation in Italy as particularly in need of updating.

"We have to think in the short to middle term," Pozzoni explains. "If governments are to support the decarbonisation of the industry sector, they should do so with a specific tax credit at the beginning of investment." Currently, the main form of support from governments comes in the form of tax breaks, or other mediums only come at the end of an investment project, meaning that all upfront costs are initially handled by the investors.

For example, in Italy, tax credit for ordinary new tangible investments have been extended for the next three years at 6%. Outside of that, the new budget provides no additional measures for tangible support to the industrial sector with regards to investment in energy efficiency improvement, with the goal of enabling companies to become fully or partially autonomous in terms of energy consumption.

"I think the tax credit should arrive at least up to 30%, 35% or 40% of the full investment if it's to be effective – at the beginning," he notes. Alternatively, it could be worth considering offering a certain amount of the support tax credit at the beginning of the investment and a second amount at the end, once the power plant is operational and it starts producing clean energy.

Pozzoni calls on governments within the European Union to define a certain amount of a specific tax credit for this area, noting that US has already thought up something similar through its Build Back Better programme, which aims to allocate a 30% tax credit for the implementation of waste heat recovery technology in industrial sites to improve energy efficiency and decrease the carbon footprint.

In the UK, the government developed the Industrial Energy Efficiency Accelerator (IEEA) programme that aims to increase the number of energy efficiency technologies available to industry to help reduce energy consumption and cut carbon emissions. Up to £13m has been made available to the programme, which will be awarded to projects that can install and test energy efficiency technologies operating at scale in an industrial setting.

Key challenges and benefits of investment

One of the main challenges for improving energy efficiency is the growth in the demand for commodities due to the economic recovery in 2021, which has increased pressure on supply chains and creating shortages and bottlenecks across the board, the IEA's Energy Efficiency 2021 report states. Such shortages have increased prices, driven up the costs of construction projects and products that are vital for improving energy efficiency, and risked diluting the impact of ongoing energy efficiency investment.

Similarly, while investors in energy efficiency may be able to make back their investment within a few years, during that period the investors are shouldering the cost of increasing energy and gas prices. Those unable to bear the brunt of this cost will simply hold back from committing funds to investing in energy efficiency.

As Pozzoni points out, this is the opposite of what any government with a true desire to tackle emissions should want. At the same time, there are greater benefits to be achieved through tackling energy efficiency in heavy industries than elsewhere – after all, it makes sense to put your investment into the heaviest emitters. The industrial sector is the second largest source of CO_2 emissions after the power sector, with total emissions of about 8.7Gt CO_2 in 2020. However, almost 70% of this is made up by three heavy industries – chemicals, steel and cement – which consume 60% of industrial energy usage.

One of the main reasons to prioritise investments in energy efficiency, Pozzoni notes, is that the technology already exists. Common short and medium-term methods to reduce emissions include switching from wet to dry production processes and using recovered waste heat to produce electricity, and these targets can be achieved with products already on the market. While financial resources can be allocated to improve technology or to study new technologies, those are long term plans that won't address the issues that need to be solved today. Right now, investment is needed to boost the adoption of energy efficiency technologies in order to start achieving results within the next five to ten years.

Of course, once a project has been made energy efficient, it then opens up further opportunities for its operators. This could involve selling on electricity produced on site back to the grid – in most cases, it will allow a site to use that energy to address part of the demand within the facility's own operations.

"It is the time to use the technology that we have in our hand today," says Pozzoni. "We need both the European Union and individual European governments to support [energy efficiency] conversion with a direct injection of cash." Without such a move, he notes, investment in energy efficiency is going to halt in the industrial sector until energy prices start decreasing or at least begin to stabilise. On the other hand, investment in this sector now, with the technology that already exists, would help to address these rising energy costs and reign them back in. All the industrial sector requires is the financial support to allow it to do so.