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Heavy industry could grow global output while using up to 45% less energy by 2050

- 30-50% of costs for heavy industry come from energy consumption
- 25-45% reduction in energy use across aluminium, aviation, cement, plastics & chemicals, shipping and steel is achievable through energy productivity measures including longer product lifetimes and higher recycling rates
- A c.40%-60% reduction in "green premiums" for aviation and shipping is possible by combining energy productivity with decarbonisation

London, 15 April 2026. Improving energy productivity can meet rising needs for housing, mobility and goods while reducing reliance on expensive fossil fuels and the need for new energy infrastructure, says a new report from the Energy Transitions Commission (ETC) and Mission Possible Partnership (MPP) published today.

Energy productivity measures the economic value generated from each unit of energy – improving it delivers the same (or greater) output from less energy. The report shows that more efficient ships, planes and industrial plants, using less material, using things for longer and recycling more can reduce the cost and complexity of decarbonising energy-intensive industries while strengthening industrial competitiveness.

Energy-intensive sectors, aluminium, aviation, cement, plastics & chemicals, shipping and steel, form the foundations of modern economies: our houses, transport and goods. Together, these sectors account for around a quarter of global energy demand.

By 2025, steel, aluminium, cement and plastics & chemicals demand is expected to grow 25%-100%, aviation 150%, and shipping 45%, driven by rising global prosperity, urbanisation and industrialisation. This growth could be delivered using 25-45% less energy and at lower cost, by improving energy productivity, compared to a scenario with no productivity gains, says the new briefing ***Harnessing energy productivity for industrial competitiveness.***

Three complementary strategies can reduce energy demand across energy-intensive sectors:

1. Technical efficiency - reducing the kWh input required to deliver the same product or service.
2. Service efficiency - reducing the volume of product or service required to deliver the same standard.
3. Material efficiency - reducing the material input to deliver a given product.

“Clean electricity and low-carbon fuels are essential to decarbonise steel, cement, plastics & chemicals, aluminium, aviation and shipping - and while they carry modest “green premiums”, these are manageable at consumer level. Improving energy productivity by using materials more efficiently and deploying better technologies, enables us to meet rising demand for buildings, products and transport while reducing energy demand and related costs,” said **Adair Turner, Co-Chair of the Energy Transitions Commission.**

“The energy crisis provoked by the conflict in the Middle East is a reminder of how exposed many economies still are to fossil energy supply disruptions and price spikes that feed through into everything from transport and industry to food production. The shift to clean industrial supply chains, anchored to a much greater extent in domestically produced energy, chemicals, and materials (including recycled materials), is essential to make economies more resilient. And using these resources more effectively will make the transition cheaper and faster.” said **Faustine Delasalle, CEO of Mission Possible Partnership.**

The opportunity is substantial. Recycling aluminium is approximately 95% less energy-intensive than new production. In cement, reducing clinker content and optimising building design represent the largest levers to lower energy requirements.

Decarbonising some energy-intensive sectors requires a transition to low-carbon solutions, such as hydrogen, ammonia, bioresources, and carbon capture and storage (CCS). These low-carbon solutions are themselves energy intensive and depend on a scaling up of clean energy infrastructure. As industries adopt low-carbon solutions, productivity improvements can limit cost increases to materials and transport, and reduce the impact on businesses and consumers.

The Energy Transitions Commission and Mission Possible Partnership’s work is anchored in four priorities that define this decisive decade: **Doubling the rate of energy efficiency improvement** to 4% per year by 2030; **Tripling global renewable power capacity** by 2030; **Electrify** - scaling clean electrification of growing energy demand; and **Build Clean Now**, moving clean industrial capacity from ambition to execution. Energy productivity improvements align with all four priorities.

Download the insights briefing: <https://www.energy-transitions.org/publications/energy-productivity-for-industrial-competitiveness>

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Media contacts:

Rosalie Hunt Energy Transitions Commission – rosalie.hunt@systemiq.earth
(+447734915901)

Clara Eldridge Mission Possible Partnership –
clara.eldridge@missionpossiblepartnership.org (+447931500313)

About Mission Possible Partnership

Mission Possible Partnership (MPP) is an independent non-profit organisation advancing global clean industry transformation. Since 2019, we have been working with some of the most energy-intensive industries – aluminium, aviation, cement, chemicals, shipping and steel – to cut their global green house gas emissions. We mobilise business, finance, government and civil society leaders to speed up the shift to clean materials, chemicals and fuels. Having chartered sectoral pathways to net-zero, we continue to forge new territory, lifting barriers to enable a critical mass of clean industrial projects to break ground by 2030. Mission Possible Partnership has people and partners on the ground in North America, Brazil, Europe, the Middle East, North Africa, India and Asia Pacific.

For further information, visit: www.missionpossiblepartnership.org

About the Energy Transitions Commission

The Energy Transitions Commission (ETC) is a global coalition of leaders from across the energy landscape committed to achieving net-zero emissions by mid-century while supporting economic growth and development. Our Commissioners come from a range of organisations – energy producers, energy-intensive industries, technology providers, finance players and environmental NGOs. This diversity of viewpoints informs our work. This report constitutes a collective view of the ETC; however, it should not be taken as members agreeing with every finding or recommendation. The ETC is hosted by SYSTEMIQ Ltd.

For further information, visit: <https://www.energy-transitions.org>