The Cheapest and Safest Energy Is the Energy You Don't Use: From Global Efficiency Trends to Taiwan's Actions

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In March 2026, military action by the United States and Israel against Iran closed the Strait of Hormuz entirely. Roughly a fifth of the world's oil and gas shipments pass through that waterway, and international oil prices climbed sharply in the weeks that followed. Fatih Birol, Executive Director of the International Energy Agency (IEA), described the episode as the largest global energy security challenge in history, with an impact greater than the two oil crises of the 1970s combined.

The warning matters especially to Taiwan, whose energy import dependency stands at 95.8%. Sharp swings in international prices feed straight through to industrial operations and household costs. The crisis also returns attention to a proposition the IEA repeats often: the energy you do not have to use is the safest and cheapest energy available. As geopolitical risk rises, efficiency becomes a question of national security and economic resilience rather than a purely environmental concern.

In December 2023, nearly 200 countries agreed at COP 28 to double the global annual rate of energy efficiency improvement to 4% by 2030, the first explicit quantitative efficiency target set under a multilateral framework. Performance since then has fallen well short. The IEA's Energy Efficiency 2025 reports a global energy intensity improvement of only 1.8% in 2025, up from 1% in 2024 but far below the target. The annual average since 2019 has been just 1.3%, less than 70% of the 2% rate recorded between 2010 and 2019. Progress has not accelerated. It has stalled.

The IEA treats efficiency as the first fuel, on the reasoning that saved energy behaves like an invisible supply: nothing needs to be extracted, nothing is emitted, and nothing is exposed to geopolitics. Without the gains achieved since 2010, global greenhouse gas emissions would now be 20% higher, and IEA countries would have faced a considerably larger increase in fossil fuel import demand.

Four structural problems explain the slowdown. Industrial energy intensity improvement has fallen from close to 2% a year in the previous decade to under 0.5%. Policy has fallen behind technology, and many appliances now on sale are only half as efficient as the best models available. Cooling electricity demand has risen by more than 4% a year since 2000 as air conditioning spreads, making it the fastest growing end use in buildings.

Corporate action has run ahead of intergovernmental commitments. The Smart Energy Coalition, led by Climate Group and formerly known as EP100, was renamed and relaunched in London in October 2025. It brings together more than 100 companies across 209 markets and 16 sectors, all committed to doubling economic output per unit of energy by 2040. Its April 2026 annual report, Accelerate Efficiency, records an average improvement in members' energy productivity of 8.6% in 2025, some 4.7 times the global average of 1.8%. Members have saved 1,560 TWh of energy in total, avoided 511 million tonnes of CO2 equivalent, and cut USD 183 million in energy costs over the past year.

The coalition's work concentrates on three areas. The first is AI and data centres. Global data centre electricity demand is expected to double before 2030, reaching roughly Japan's total annual consumption, and cooling alone accounts for 38% to 40% of that load. Danfoss reports that efficient liquid cooling saves 246 kWh per server rack against conventional systems. In Taiwan, Pacific SOGO installed AI driven smart HVAC and replaced its chiller with an 800 refrigeration ton magnetic levitation centrifugal unit, saving about 1.447 million kWh annually from that measure alone, a 53.68% reduction.

The second is air conditioning and cooling, where the potential has been overlooked for years. Global cooling demand is set to keep growing through 2050, while ultra efficient units can cut energy use by at least half. Passive cooling design can lower indoor temperatures by up to 8°C and reduce cooling energy by 15% to 55%. IEA figures suggest air conditioning will add around 500 GW to global peak demand by 2035, which makes the issue particularly pressing for subtropical Taiwan.

The third is energy security. Helen Clarkson, Chief Executive of Climate Group, has argued that using energy more intelligently is essential to energy security at a time of high geopolitical uncertainty, and that efficiency is the first line of defence against price volatility. During Europe's energy crisis, efficiency measures delivered around two thirds of the gas savings achieved by European households. The coalition has identified Asia Pacific as a priority region for policy advocacy and has established formal cooperation with the Chung-Hua Institution for Economic Research.

Taiwan has built its efficiency framework gradually since the Energy Management Act of 1980, setting a 1% annual saving target for large users in 2015 and listing energy saving among the twelve key strategies of its net zero pathway in 2022. President Lai Ching-te's second energy transition shifts the emphasis from supply side restructuring towards demand side management, with deep energy saving and smart grids at the centre. The Deep Energy Saving Promotion Program running from 2024 to 2027

commits NT$35.3 billion over four years and targets savings of 20.6 billion kWh, close to 7% of national annual consumption, while raising the large user target to 1.5%. In February 2026 the Ministry of Economic Affairs issued draft rules under which users with contracted capacity above 800 kW must carry out energy audits and file five year saving plans. Set against the coalition's framing, however, domestic policy remains only loosely connected to questions of energy security and resilience.

For an economy 95.8% dependent on imports, every 1% cut in consumption converts directly into resilience. Efficiency deserves to be positioned as part of national security strategy rather than as an adjunct to environmental policy. What distinguishes coalition members is that their results come from treating efficiency as commercial strategy rather than passive compliance. Schneider Electric reduced energy use in an office building by about 22% through occupancy optimisation, and AstraZeneca saved roughly 6.9 million kWh a year by applying machine learning to HVAC systems. AI plays both parts in this story, as a major source of demand and as a tool for saving. The IEA estimates that widespread industrial use of AI could unlock savings by 2035 equivalent to the entire current industrial energy demand of the European Union. Doubling efficiency by 2030 would cut 6.5 billion tonnes of carbon, lower global energy costs by close to 10%, and account for more than 40% of the emissions reductions the energy sector needs.