

The Invisible Pillar: Why Energy Efficiency Holds the Trilemma Together

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Extended Abstract

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Abstract Summary

The continuous challenge: balancing energy security, environmental sustainability, and affordability—a dynamic referred to as the energy trilemma. Efforts to optimize one dimension frequently create trade-offs in others. Traditionally, solutions have focused on increasing energy supply or shifting energy sources. However, an often overlooked factor—energy efficiency—plays a crucial often times invisible role in stabilizing the entire system. Energy efficiency is a balancing force with less exposure to price volatility, supply disruptions, infrastructure strains and in general a resource for rational use. In this sense, it acts as a hidden integrator, easing tensions within the trilemma rather than intensifying them.