



Global trends of the Energy Transition

Dr Brian Motherway, Head of Energy Efficiency Division, International Energy Agency
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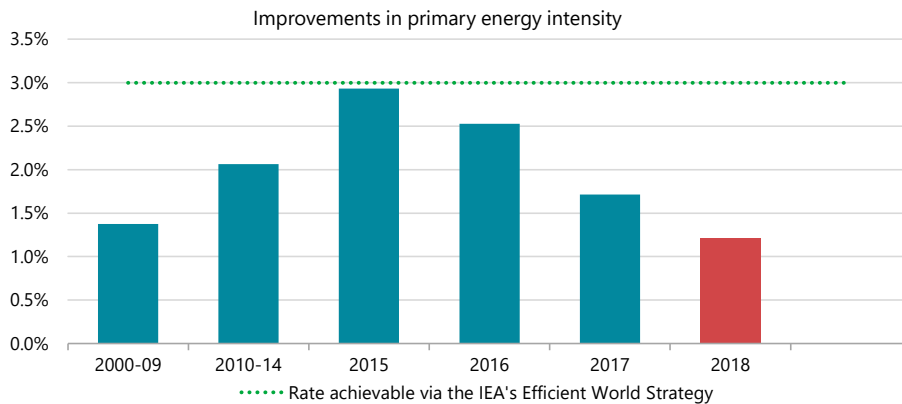
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Global energy efficiency trends

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Global energy efficiency improvements are slowing down



In 2018 the global economy produced 1.2% more value for every unit of energy used compared to 2017. Cost-effective opportunities exist to deliver an annual improvement rate of 3%.

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What's behind the slowdown?

Three factors:

Short term factors:

Recent jumps in industrial activity and exceptional weather have pushed up demand

Broader trends:

Overarching structural trends are blunting the impact of technical efficiency improvements

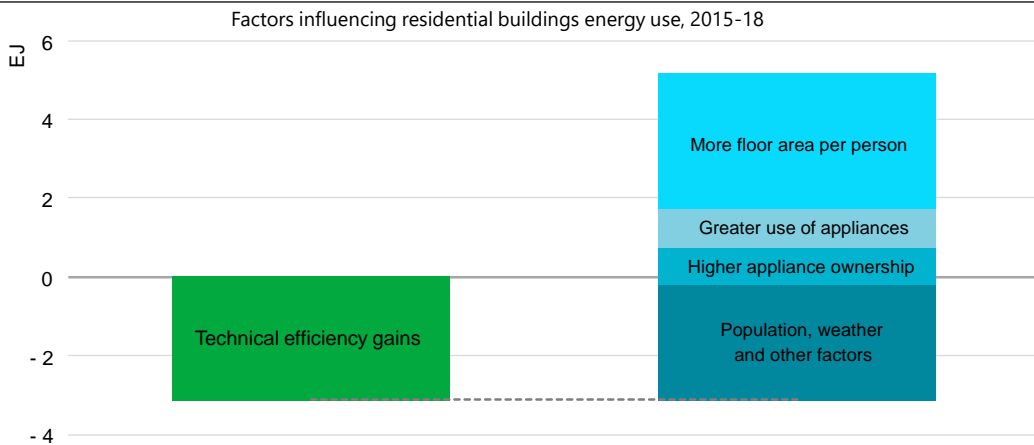
Policy and investment:

Policy progress and investment are flat, and are not keeping up with the upward pressures on demand

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Technical efficiency isn't keeping pace with societal trends



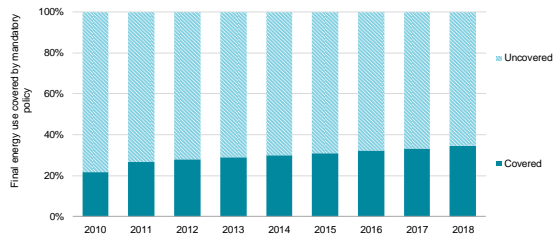
The technical efficiency of homes and appliances is improving, resulting in energy savings. However, these savings are overwhelmed by wider societal factors that create more energy use.

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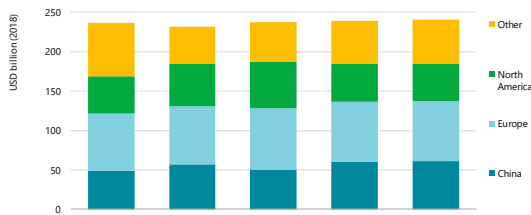


Policy progress and investment are flat, just when they need to grow

Mandatory policy coverage



Investments in energy efficiency by region

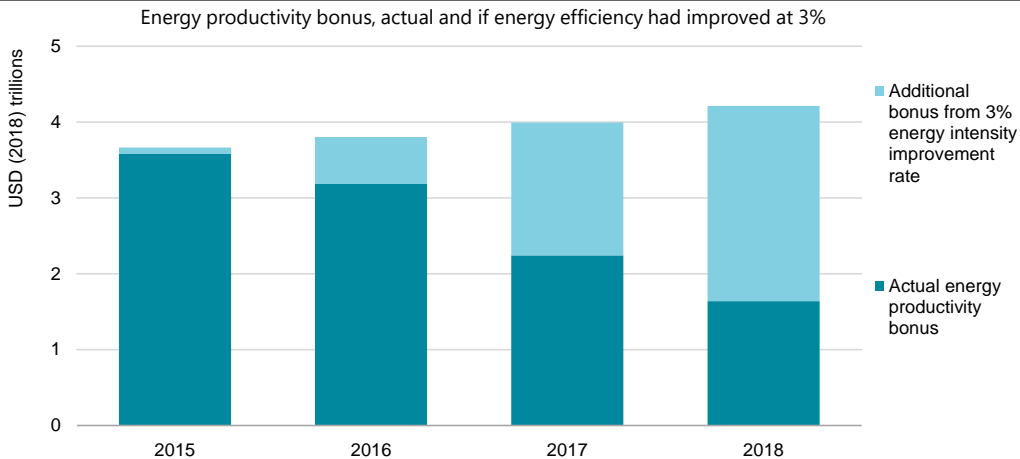


Efficiency policy progress is slow, and investments in efficiency stayed flat. Returning to a 3% annual improvement in intensity requires annual investments to double on average, between now and 2025.

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The slowdown is a lost opportunity for the global economy

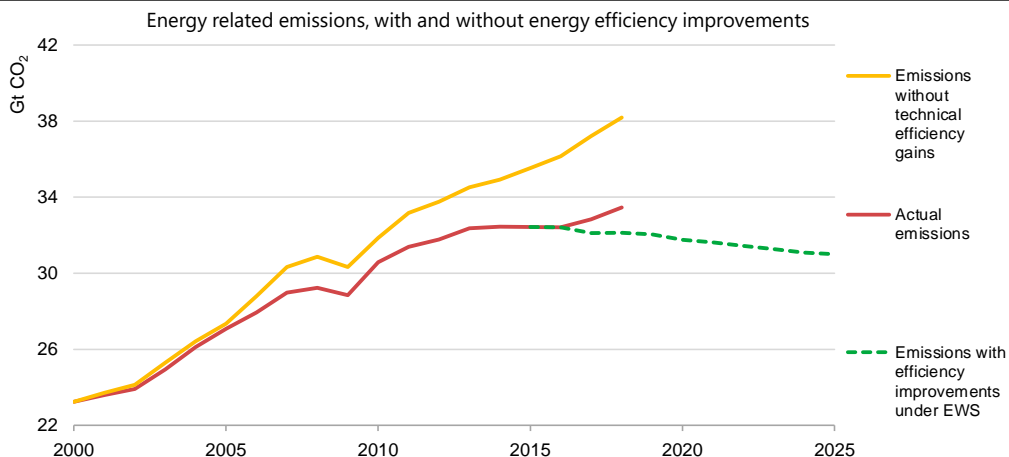


In 2018, global efficiency improvements equated to \$1.6 trillion in additional productivity over 2017. Without the slowdown, the gain could have been 2.5 times bigger.

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Efficiency lowered emissions, but not as much it could have



Energy-related emissions were lower thanks to efficiency but still continued to increase. Reversing the recent trend is possible with cost-effective energy efficiency measures.

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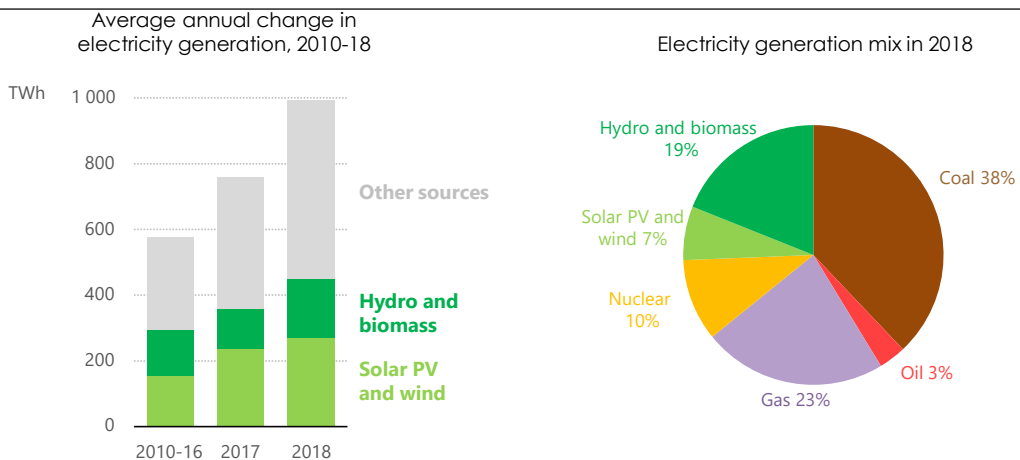


Global renewable energy trends

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Electricity growth in 2018 outpaced renewable energy

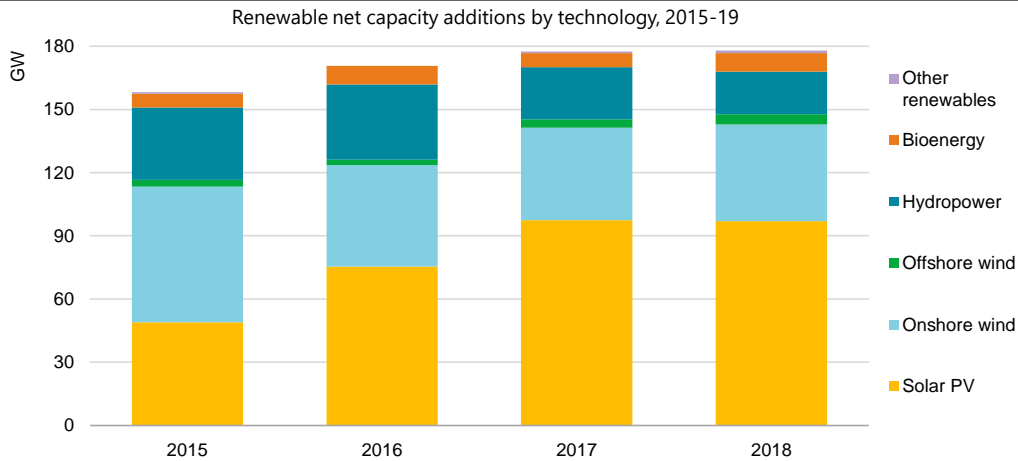


Renewables was the largest contributor to electricity demand growth, led by growth in solar, wind and hydro. However, this growth was not fast enough to reduce overall power sector emissions.

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Renewables are expected to rebound in 2019

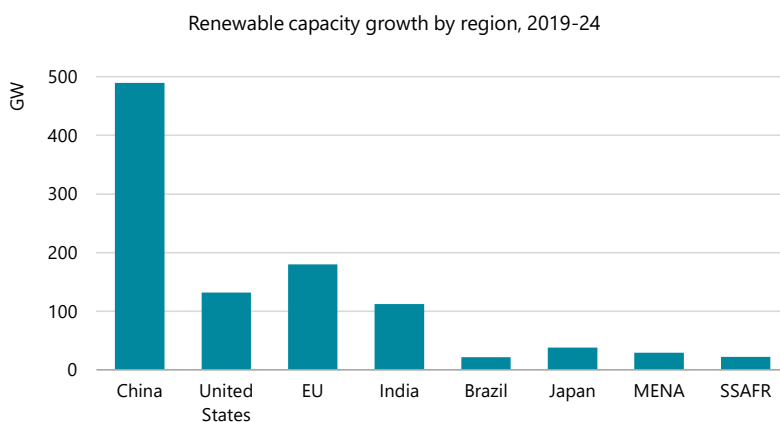


The IEA expects renewable capacity additions to grow by almost 12% this year, the fastest pace since 2015, to reach almost 200 GW, mostly thanks to solar PV and wind

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EU and China drive a more optimistic forecast

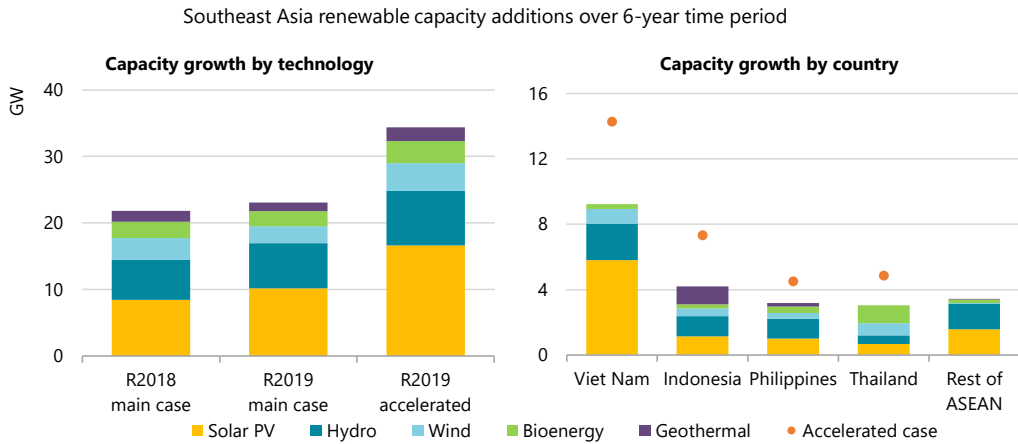


The IEA has forecast that growth in China will underpin global renewable energy capacity growth for the next five years. A continuation of strong policy signals in Europe will also contribute to growth.

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Solar PV with underpin renewables growth in Southeast Asia



Ambitious policies to increase renewable energy deployment, particularly wind and solar, could see Viet Nam lead the way in terms of renewable energy deployment in Southeast Asia.



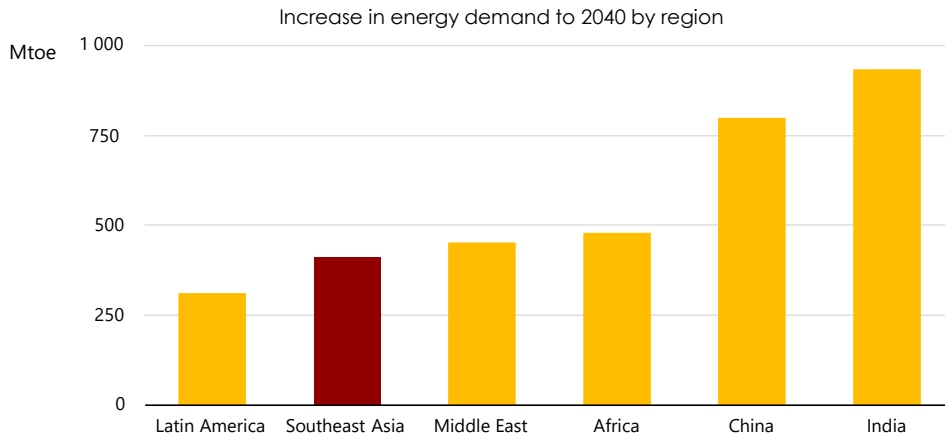
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Opportunities and challenges for Southeast Asia



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Southeast Asia will be a major force in global energy

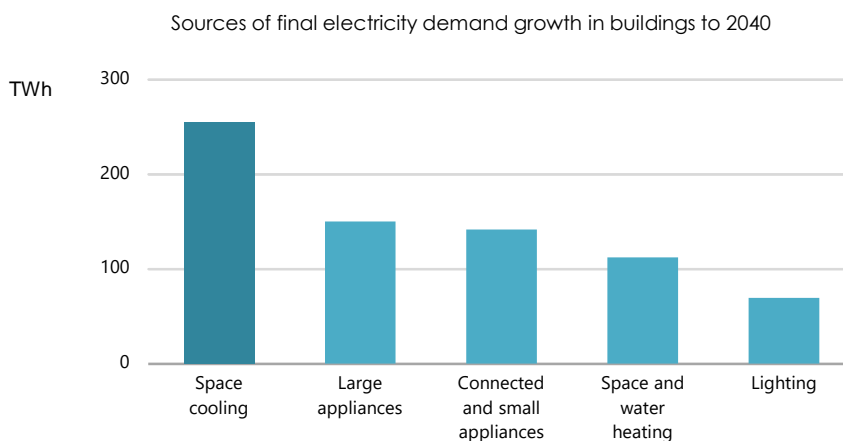


Based on today's policy settings, the pace of energy demand growth in Southeast Asia to 2040 is double the global average, spurred by rising incomes, industrialisation and a rising urban population

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Cooling is the front line of the fight to improve efficiency

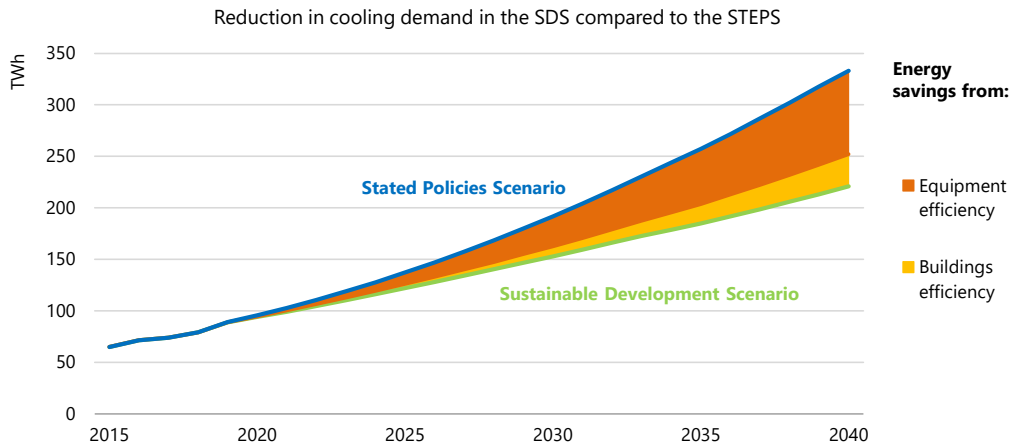


Today, just 15% of ASEAN households have air conditioners versus more than 90% in Japan and the US; Growth in cooling demand could be cut by 50% with a pragmatic suite of policy measures

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Efficiency could reduce the impact of space cooling



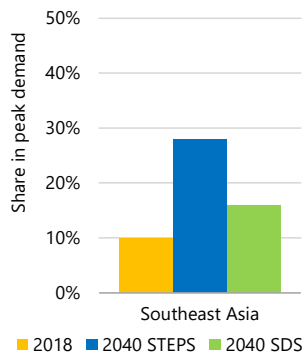
Deploying more efficient ACs along with building efficiency improvements, contributes electricity savings equivalent to the electricity production of Malaysia, Philippines and Viet Nam combined.

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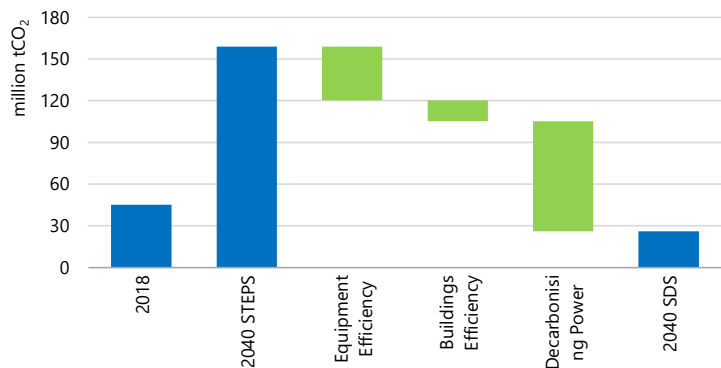


Cooling efficiency could would benefit the energy system

Reduction in cooling's share in peak demand in the SDS



Decomposition of factors for reduction of CO₂ emissions between the STEPS and SDS



Greater cooling efficiency could avoid the emissions of more than 6 million cars and nearly halve the additional electricity generation capacity need for space cooling in 2040.

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Concluding remarks

- The slowdown in global energy efficiency improvements is a lost opportunity for the global energy system and economy. Cost-effective potential remains to realise much greater gains.
- Global renewable energy capacity growth is expected to increase again, with solar PV leading the way. Southeast Asia, particularly Viet Nam is forecast to experience significant growth.
- Rising energy demand in line with economic development will present a major challenge for energy systems in Southeast Asia. There are no easy solutions, but energy efficiency and renewables are key.
- Space cooling will be a major driver of energy demand growth in Southeast Asia, but this impact could be significantly reduced through equipment and building efficiency measures.
- Government policy will be key to managing the growth and transition of energy systems in Southeast Asia. The IEA stands ready to assist ASEAN governments through training, advice and targeted analysis.

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