Energy Efficient Cooling

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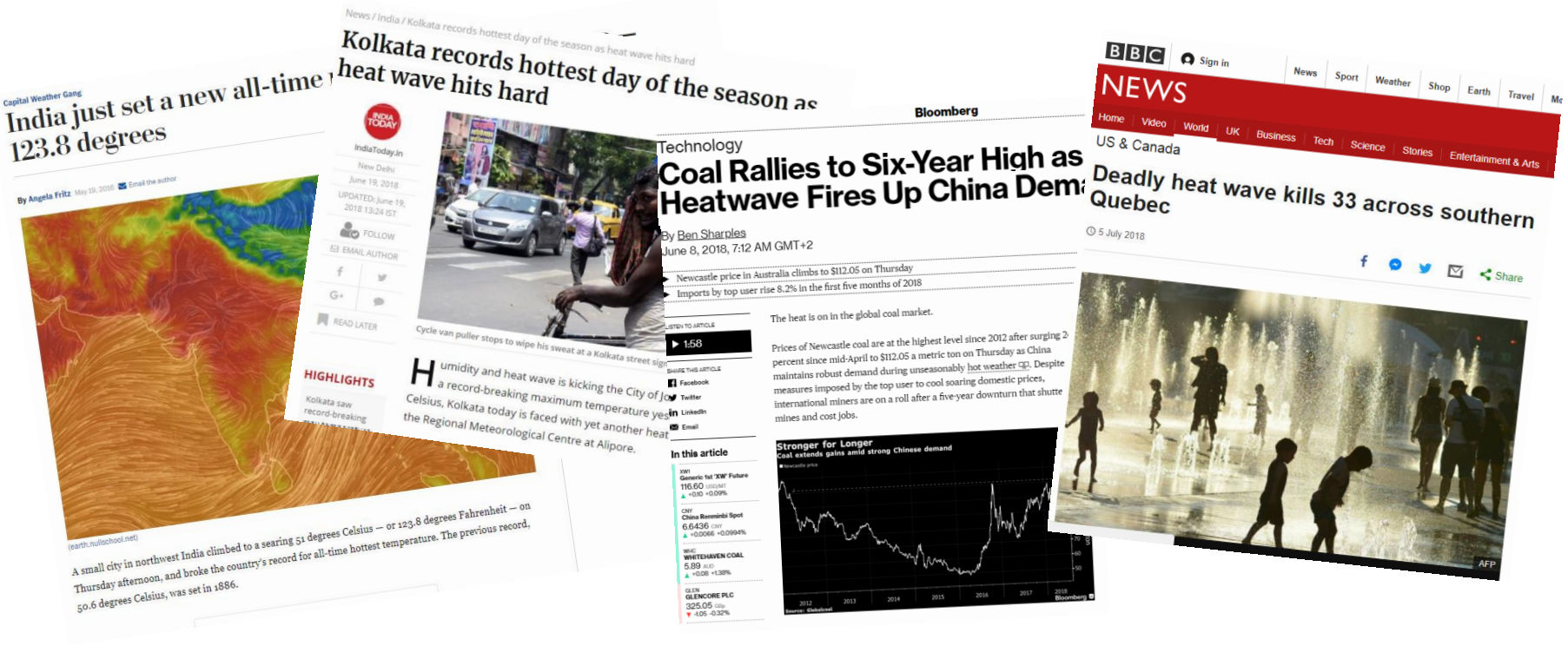
#energyefficientworld

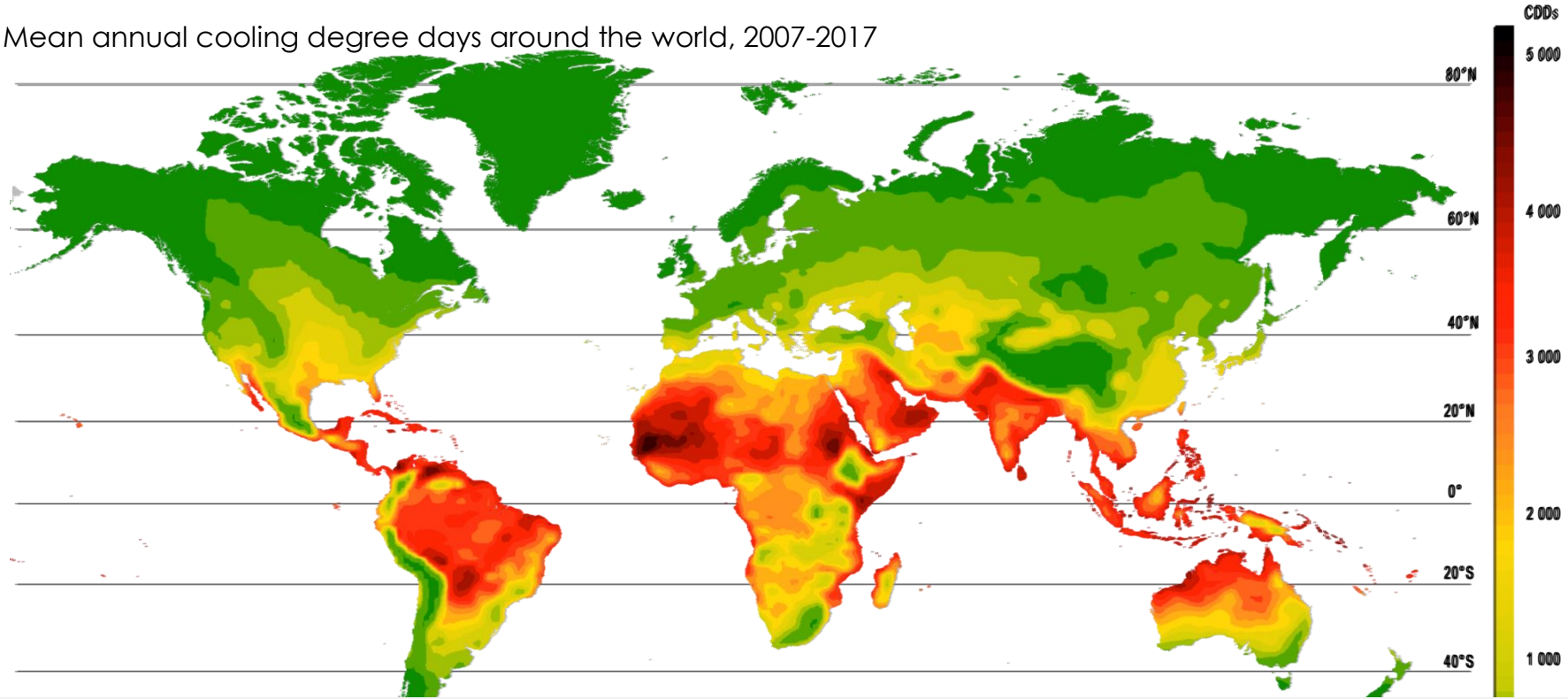
The world is getting hotter



The need for cooling is growing – and with it demand for air conditioning.

Access to cooling is a critical issue in some of the hottest places

Mean annual cooling degree days around the world, 2007-2017

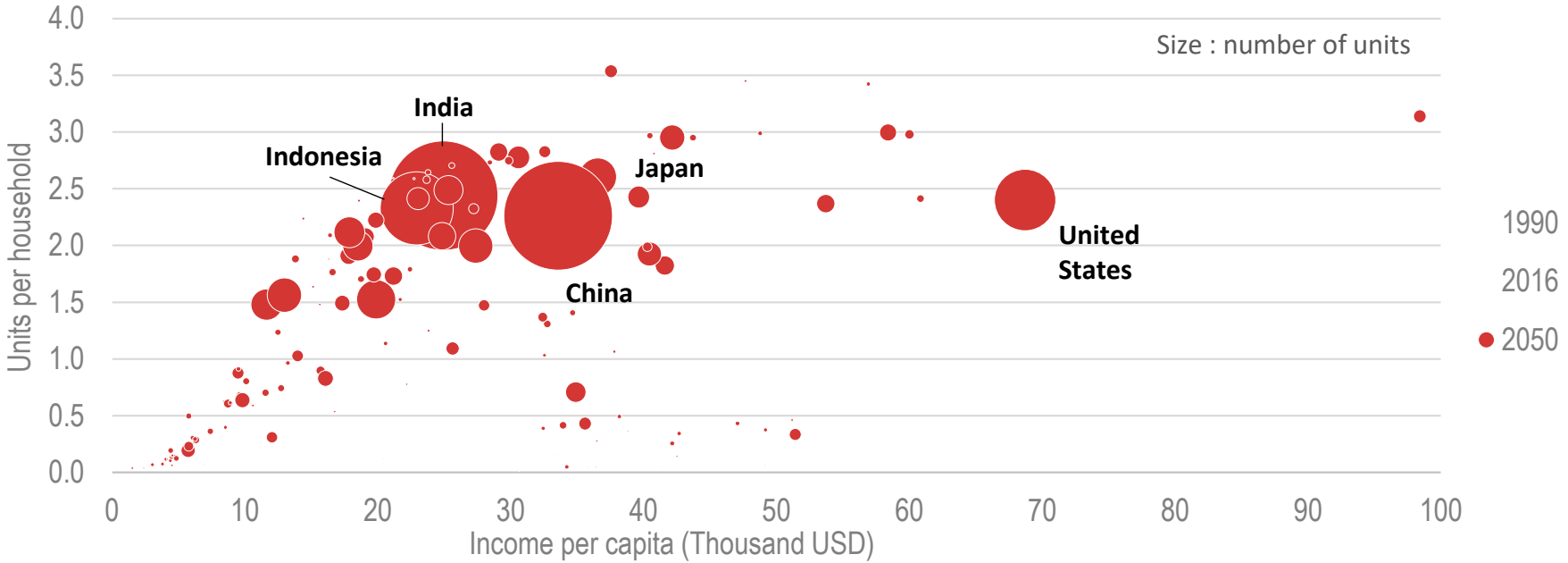


There are around 2.8 billion people living in places where it is hot every single day. Only 8% of them have an air conditioner today.

Source: IEA The Future of Cooling 2018

AC ownership is expected to soar

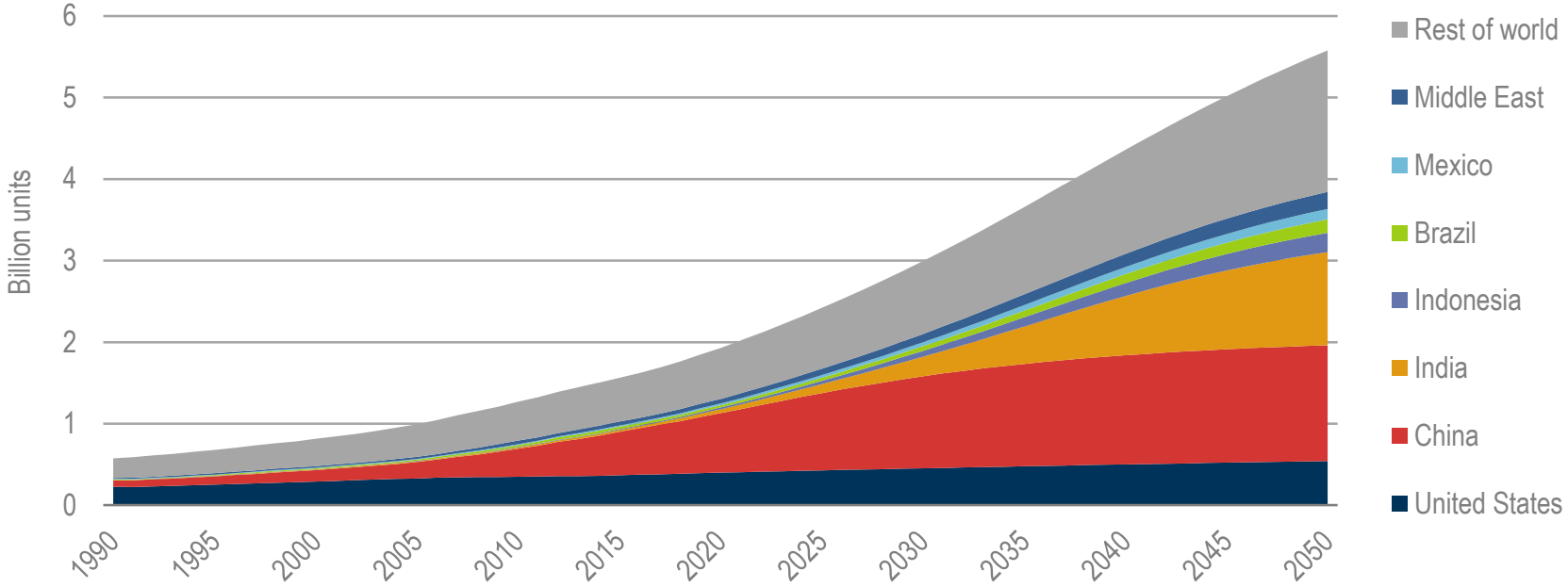
Evolution of global air conditioner ownership



By 2050, around 2/3 of the world's households could have an air conditioner. China, India and Indonesia will account for half of all AC units in buildings in 2050.

The world faces a ‘cold crunch’

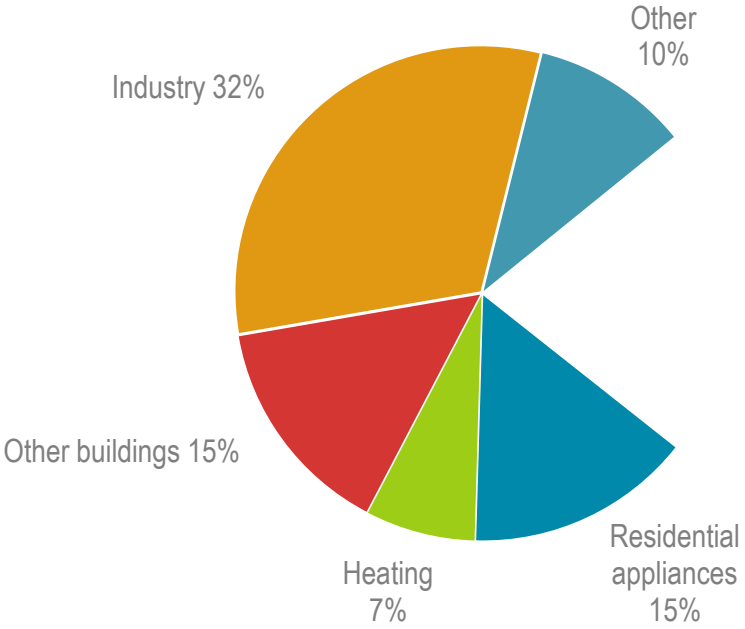
Global air conditioner stock



By 2050, around 2/3 of the world’s households could have an air conditioner. China, India and Indonesia will together account for half of the total number.

Cooling is outpacing all other energy end-uses in buildings

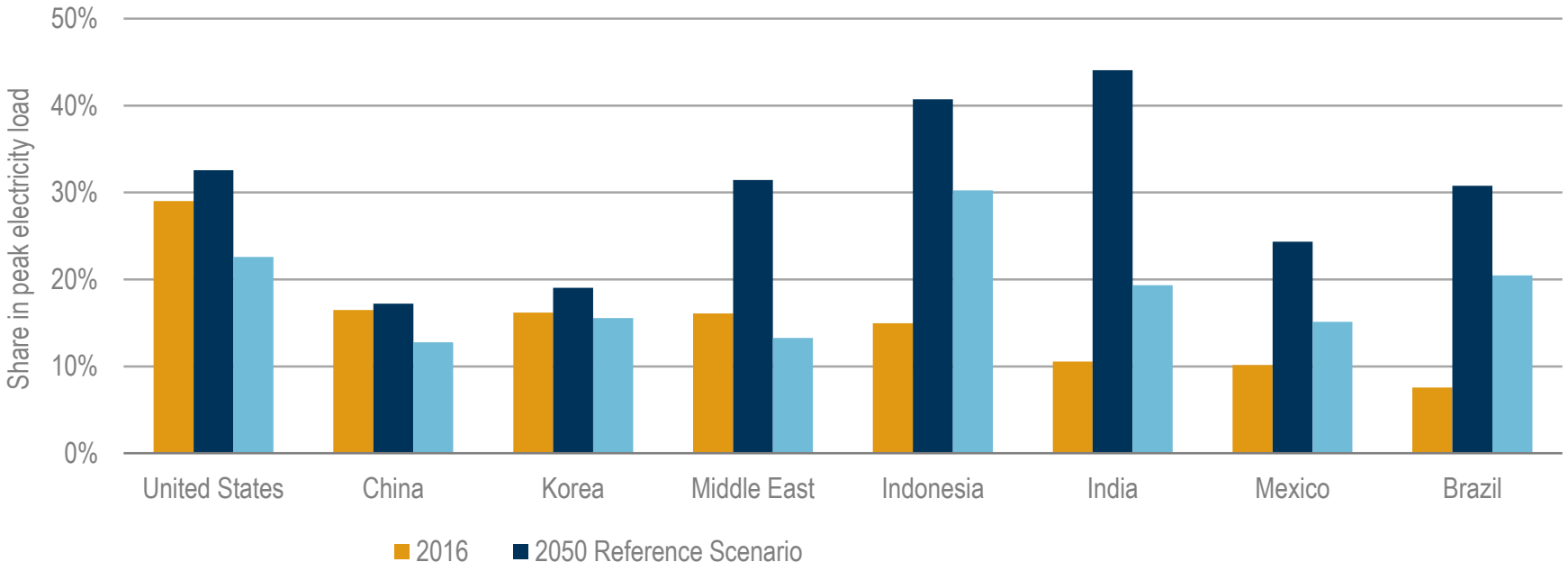
Share of final electricity demand growth to 2050



Without action to address energy efficiency, space cooling will consume more than 20% of global electricity growth – larger than the current generating capacity of the US, EU and India combined.

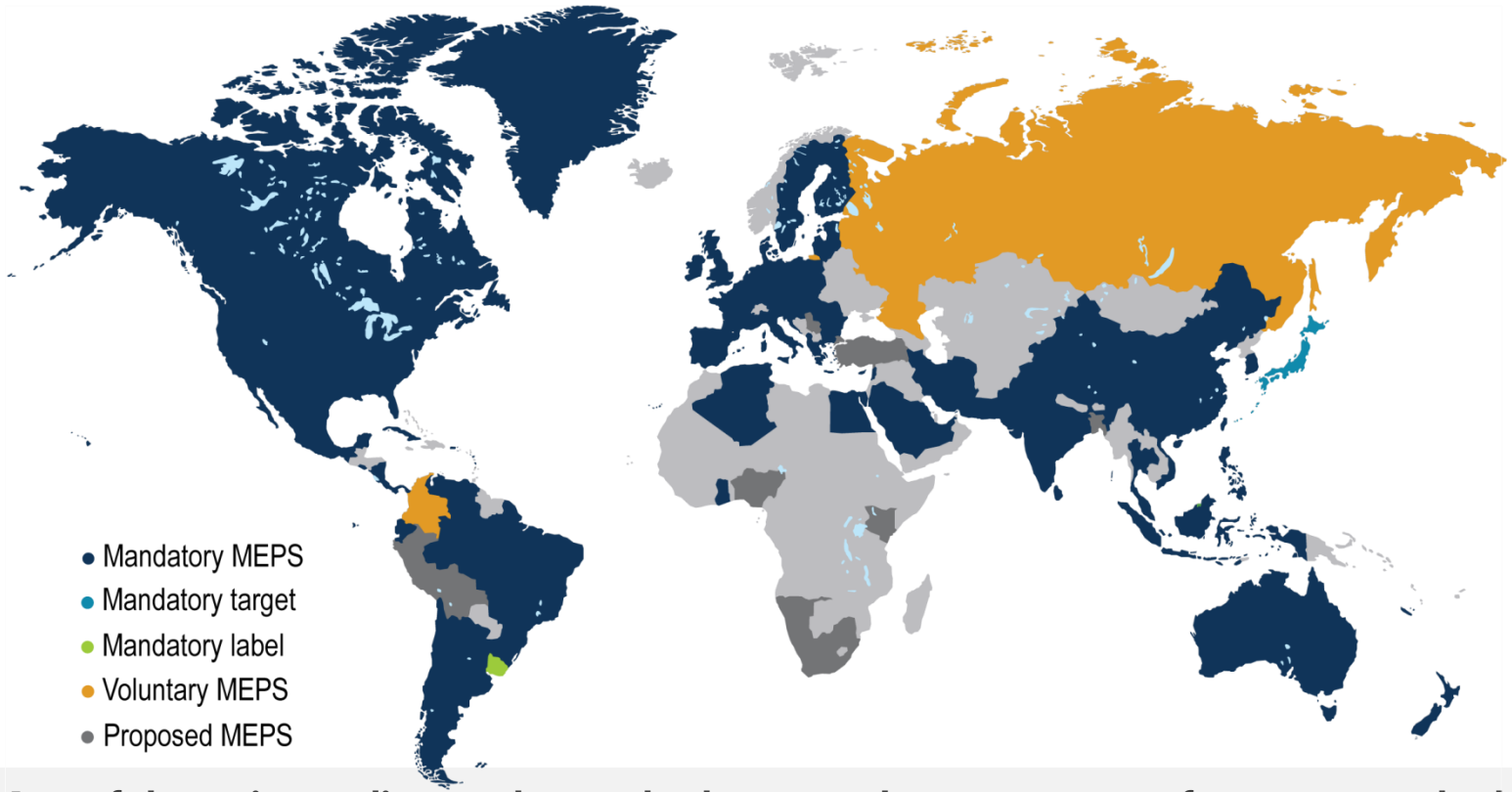
Cooling demand has serious implications for grids

Share of cooling in electricity system peak loads



Efficient air conditioners can help to dampen the impact on the power system.

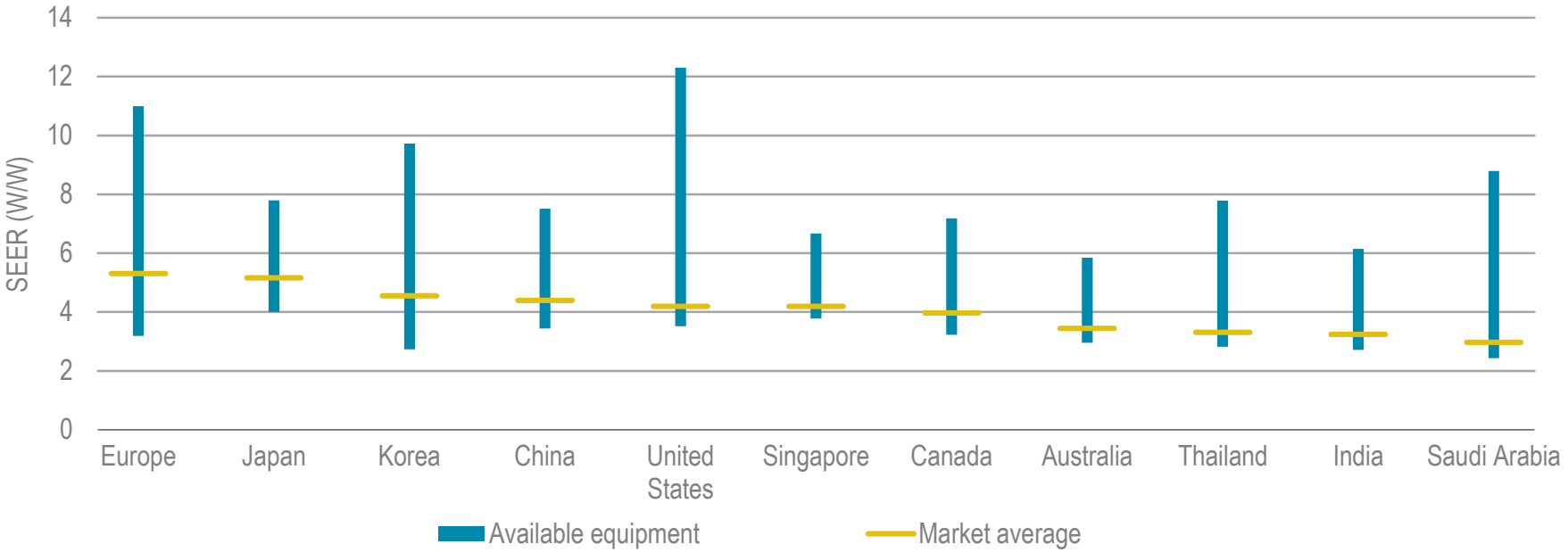
Energy policy is not keeping up with energy technology



Most of the major cooling markets today have mandatory energy performance standards, but the required efficiency levels are typically far below those of the most efficient products available.

Markets are not keeping up with energy efficiency potential

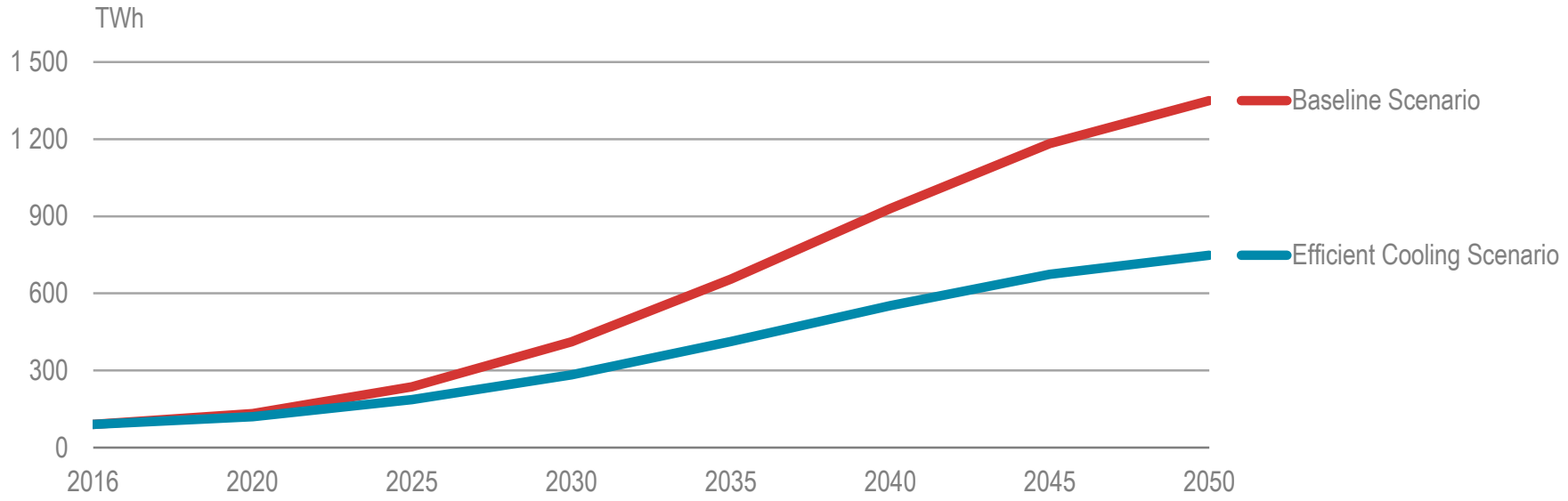
Energy performance of air conditioners already available in markets today



The average efficiency of air conditioners sold today is less than half of what is typically available on shelves – and one third of best available technology.

Energy-efficient air conditioning can halve cooling growth In India

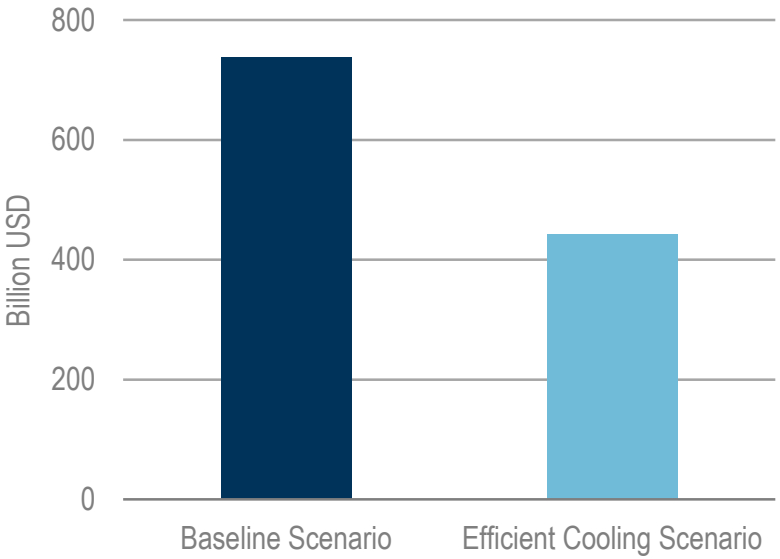
Electricity savings using energy-efficient air conditioning in India



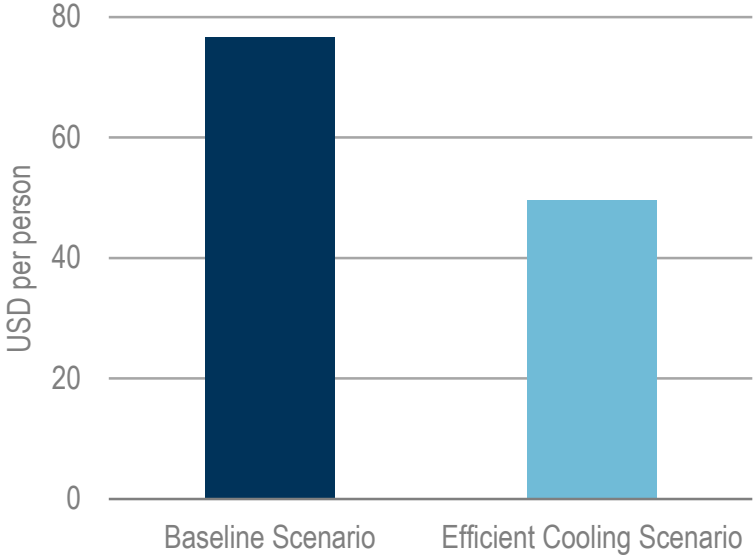
Energy-efficient ACs can deliver more than 8 000 TWh of electricity savings in India to 2050.

Efficient ACs can lessen the costs of new power generation in India

Cumulative investments in power generation for space cooling to 2050 in India



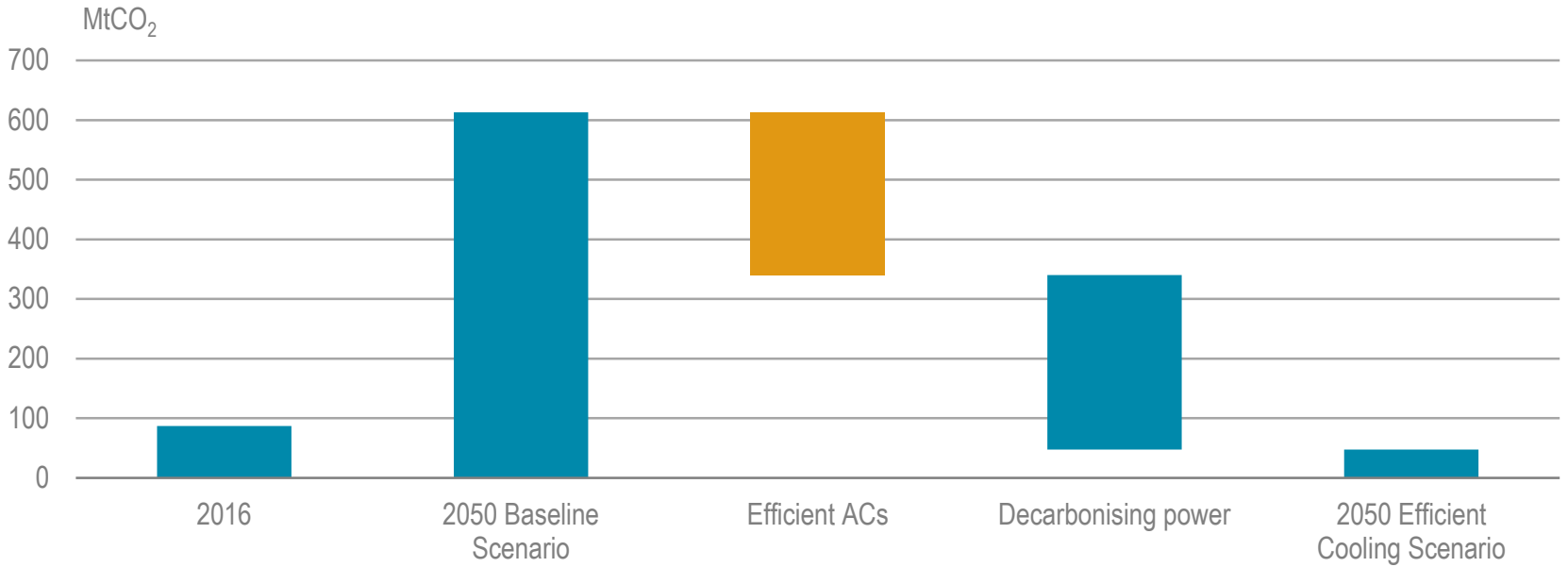
Global average electricity costs per capita for space cooling in 2050 in India



USD 295 billion in power generation investments can be saved in India with more efficient ACs. Average per capita electricity costs for cooling would be cut in third.

Efficient ACs will help cut emissions in India

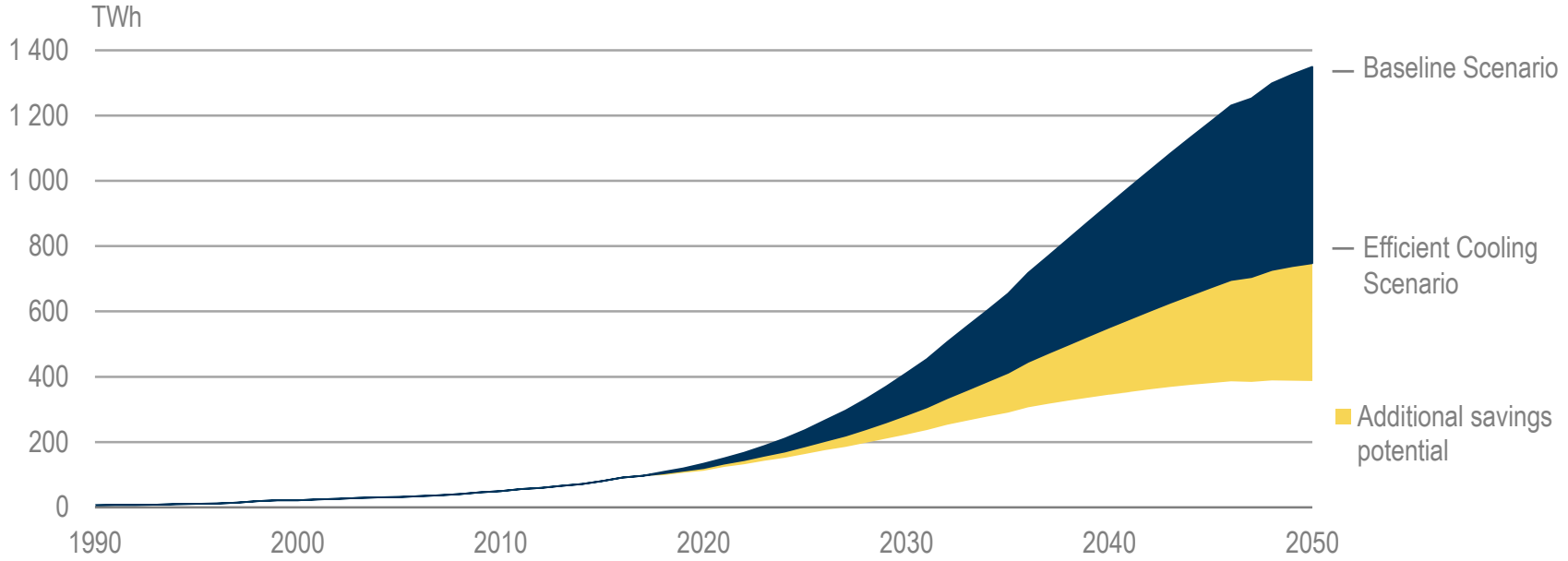
Contribution of more efficient space cooling on CO_2 emissions in India



More efficient ACs in India cut CO_2 emissions from space cooling by nearly 50%.
Efficiency also helps enable cleaner power – drastically reducing cooling-related emissions.

Efficient building design can create even further savings in India

Additional energy savings potential through energy efficiency measures



Additional measures – such as better building design and construction, can reduce cooling energy demand in India – while also allowing millions of people better access to keep cool.

Policy action to curb cooling-related energy needs

Capturing the major energy efficiency potential for space cooling in buildings

- Absent firm policy interventions, energy demand for cooling in India will soar
- Recent announcements on AC MEPS and the advisory on default temperature settings are a positive step towards sustainable cooling in India
- Further policy action can deliver substantial energy savings quickly by making AC equipment much more efficient
  - Increase consumer awareness of energy efficient products
  - Build on recent building code to increase uptake of energy efficiency and renewables in an integrated fashion
  - Bring public and private stakeholders together to identify strategies and solutions for sustainable cooling

Thank you!

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