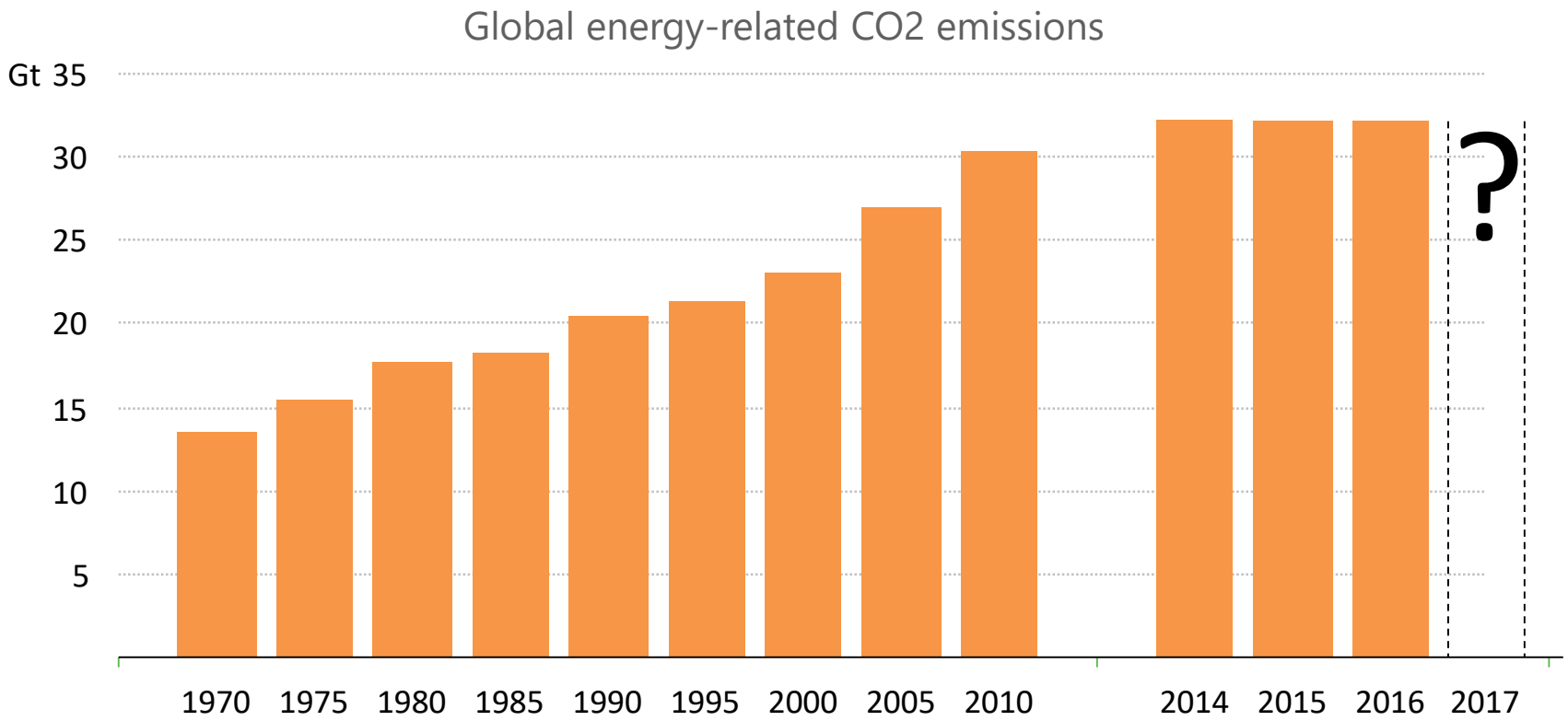
World Energy Outlook 2017

University of Tokyo Symposium: Decarbonisation after the Paris Agreement

Laura Cozzi

8 February 2018

CO_2 emissions growth has slowed significantly



Three consecutive years without CO_2 emissions growth; too early to call on 2017

A shift towards cleaner fuels and greater efficiency, even without further climate policies

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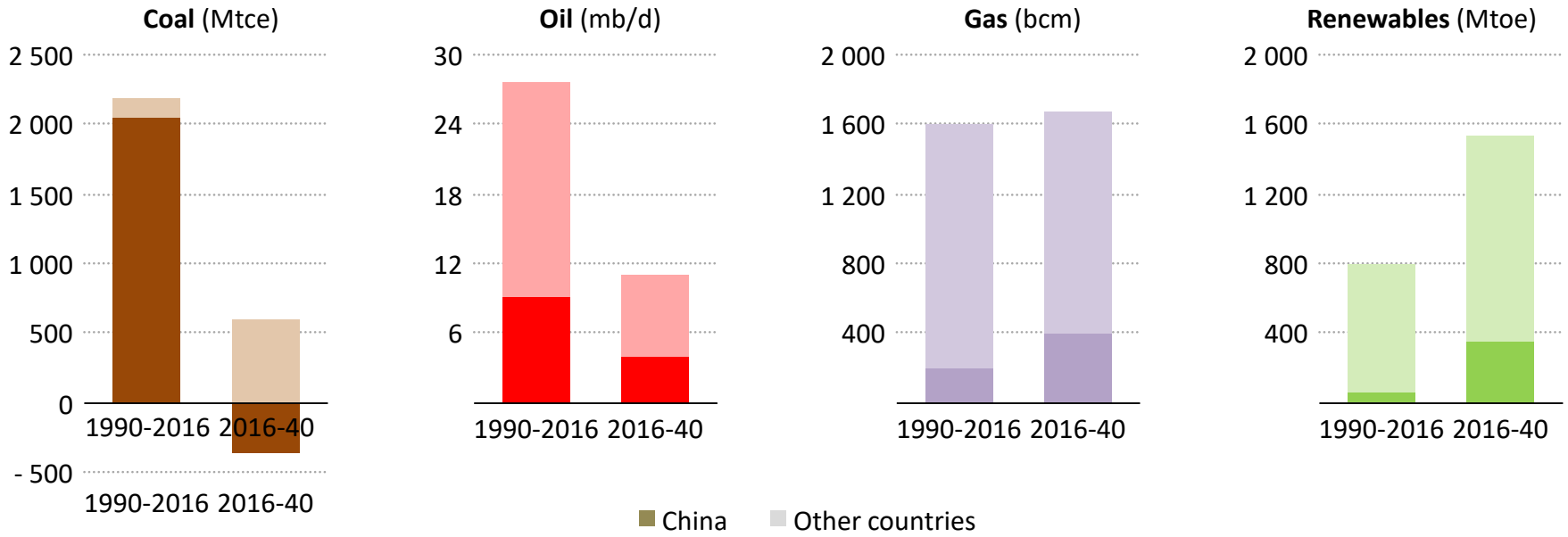
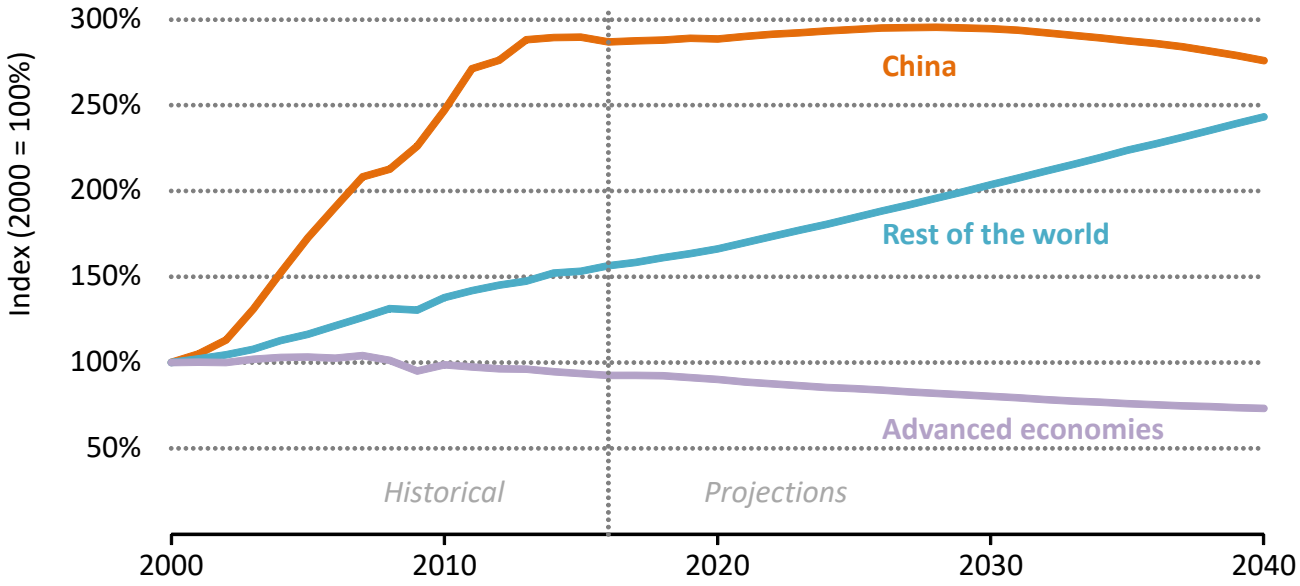
Change in world energy demand by fuel



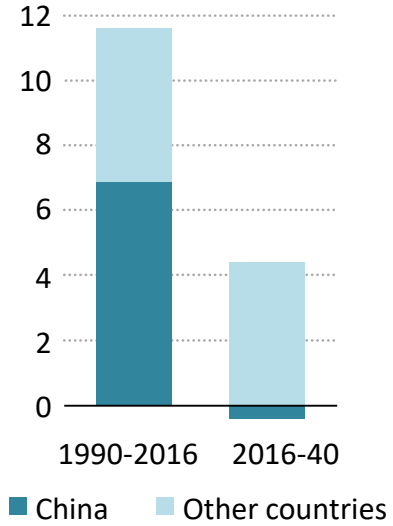
Worldwide demand growth to 2040 would be twice as high without energy efficiency improvements: global trends are shaped by China's switch towards natural gas & low-carbon fuels

CO_2 emissions growth slows

Energy-related CO_2 emissions in the New Policies Scenario



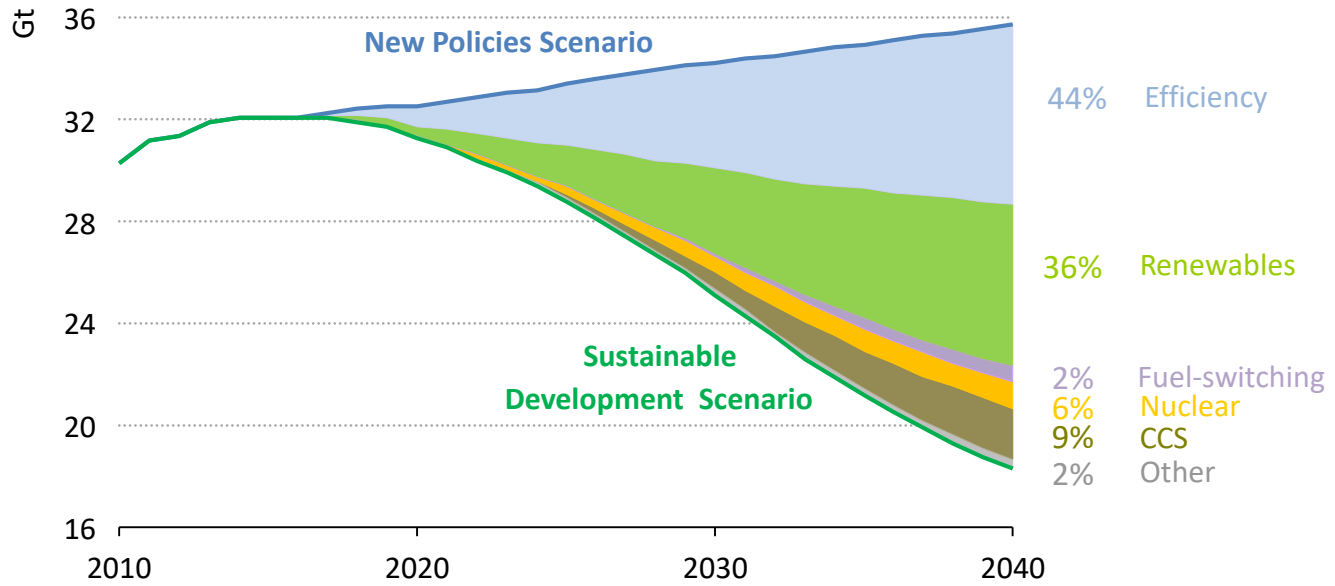
CO_2 emissions growth by period



Emissions growth slows as China restructures its economic growth model and the use of low-carbon technologies, in particular solar PV and wind, rises

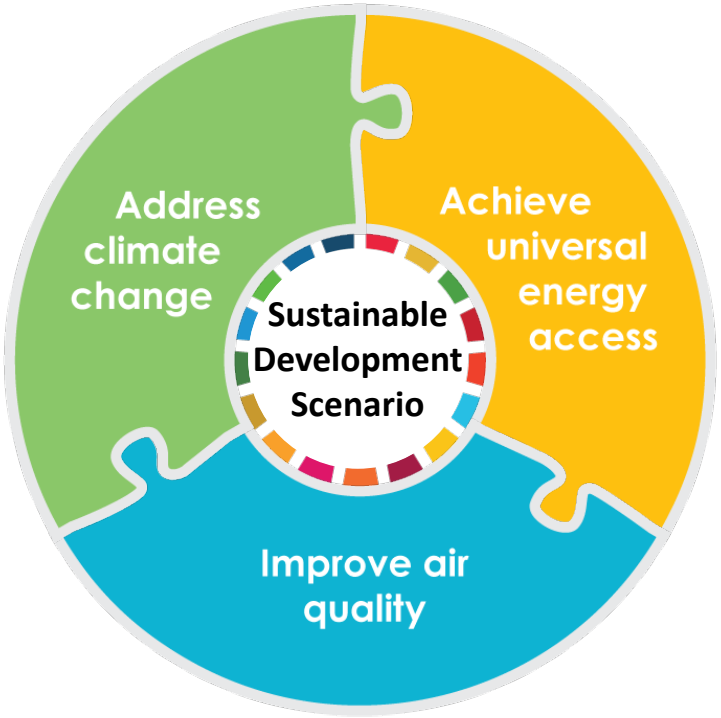
Reducing CO_2 emissions: efficiency and renewables lead the way

Global CO_2 emissions in the New Policies and Sustainable Development Scenarios



Energy efficiency and renewables account for 80% of the cumulative CO_2 emissions savings in the Sustainable Development Scenario

A new strategy for energy & sustainable development



The Sustainable Development Scenario reduces CO_2 emissions to address climate change while also tackling air pollution and achieving universal energy access

The road to universal electricity access

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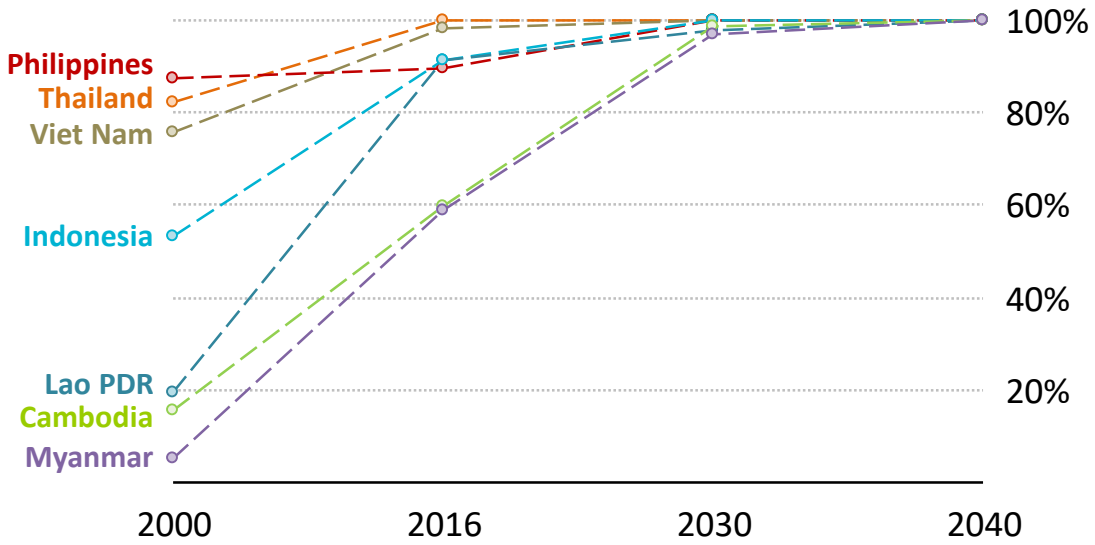
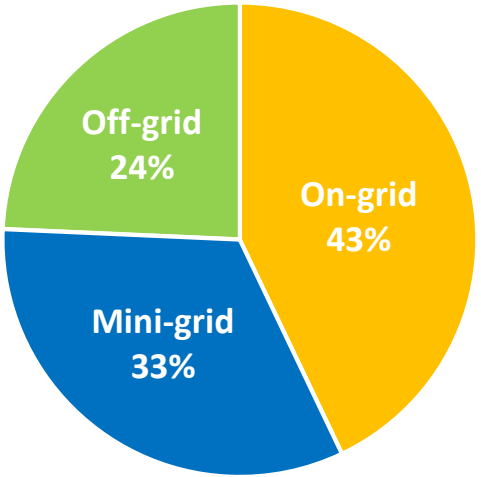
Access to electricity in South-East Asia



Access by type of connection, 2030



All countries in South-East Asia achieve universal access to electricity by the early 2030s, deploying a range of technologies depending on circumstance

Rethinking the energy sector

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The Sustainable Development Scenario in 2040

875 million electric vehicles

2 times more efficient than today

3 250 GW global solar PV capacity

580 bcm additional gas demand

Achieving the three targets of the Sustainable Development Scenario simultaneously requires a step change in the pace of delivering a clean energy transition

Benefits of the Sustainable Development Scenario

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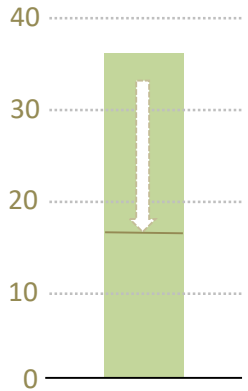
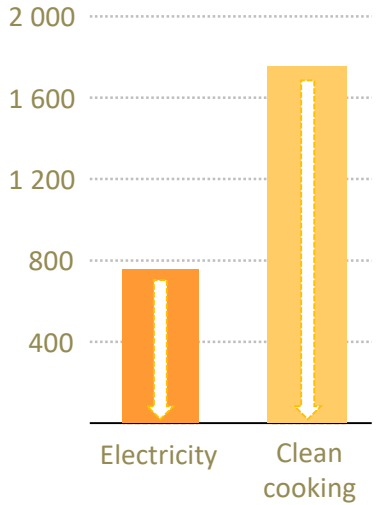
Outcomes of the Sustainable Development Scenario vs. New Policies Scenario, 2040

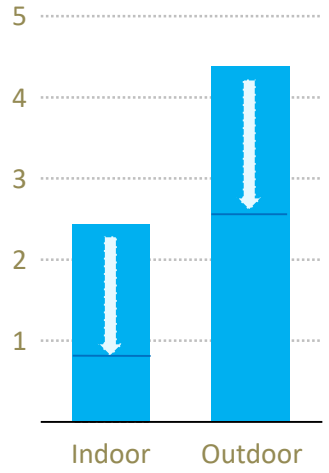
CO_2 emissions
($Gt CO_2$ in 2040)



People without access to modern energy
(Million people)

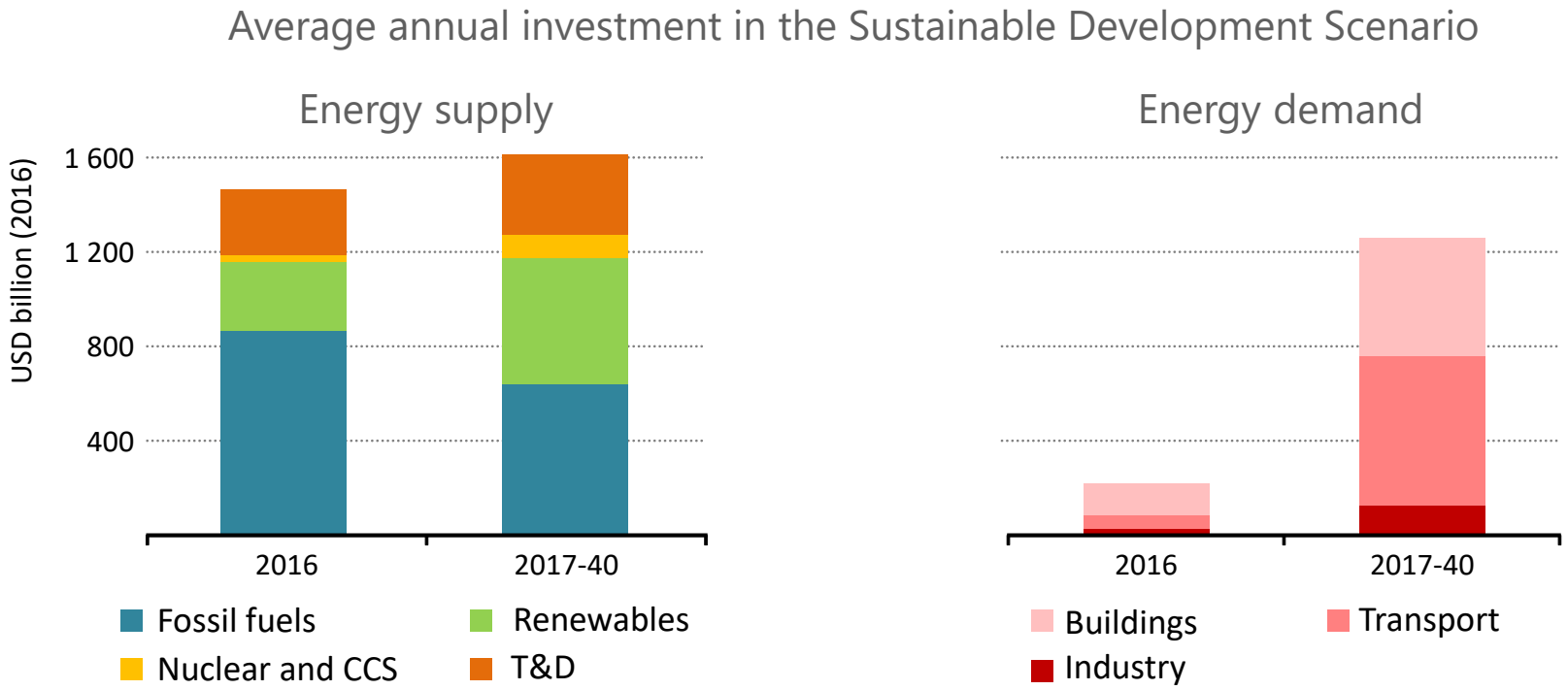


Premature deaths from air pollution
(Million people)



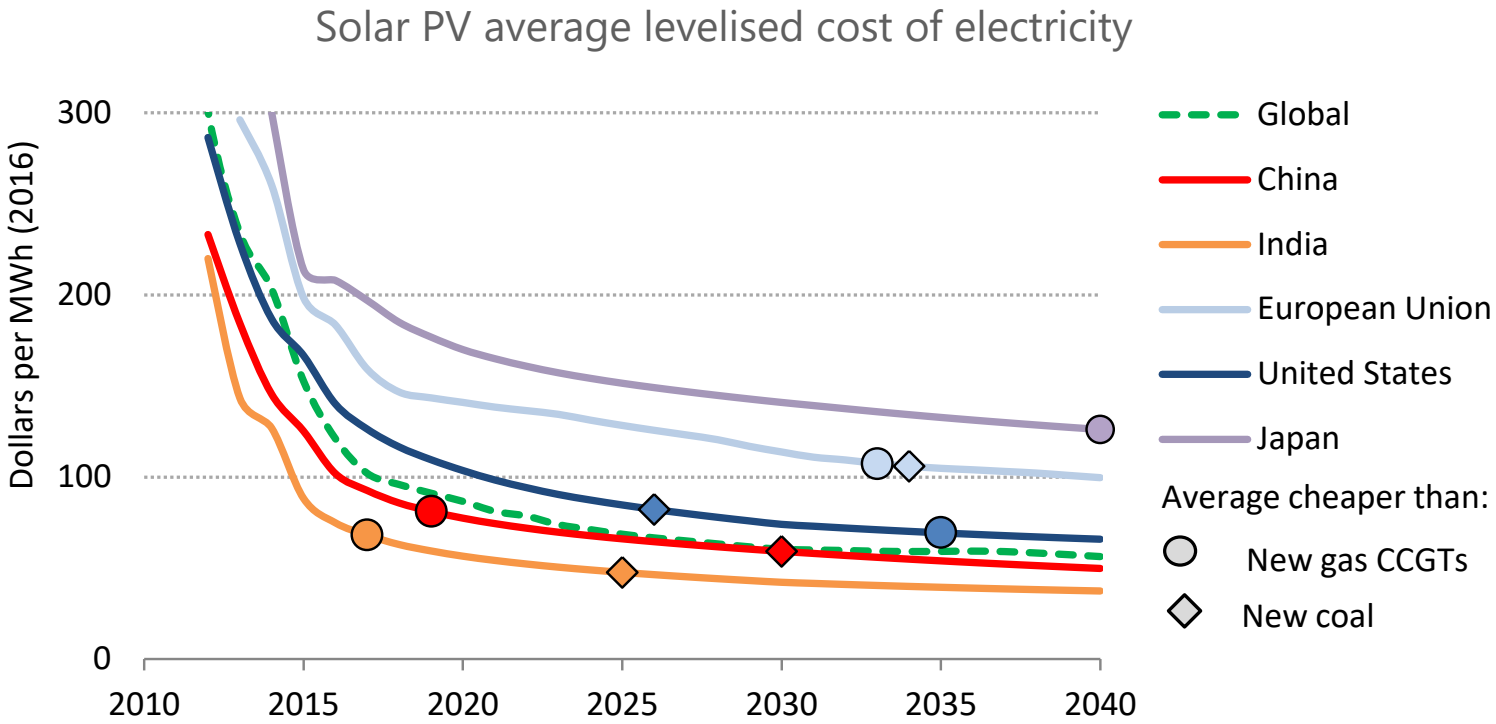
In an integrated approach, universal energy access can be reached while also achieving climate goals and reducing air pollutant emissions, at little extra cost

Sustainable investment needs



The Sustainable Development Scenario requires 15% additional investment to 2040; two-thirds of energy supply investment are needed for electricity generation & networks

Solar PV: soon the cheapest source of electricity



The falling costs of clean energy technologies, including solar PV, wind power and batteries, set the stage to re-shape electricity supply

Conclusions

- Despite political setbacks since the Paris Agreement, international momentum has nonetheless increased and GHG emissions growth has slowed considerably
- Energy's role in sustainable development is about more than climate, and under current trends the SDGs on energy access, air pollution and climate change will not be met
- Our strategy for sustainable energy shows that concerted action to address climate change is fully compatible with global goals on universal access & air quality
- The Sustainable Development Scenario requires an additional 15% of investment and profound changes in energy production & use
- WEO 2018 will focus on **electricity,** including outlook for demand, securing electricity supply in the power sector transition and key technology uncertainties

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