REmap
A Renewable Energy Roadmap

IRENA
International Renewable Energy Agency

#REmap

ROADMAP FOR A RENEWABLE ENERGY FUTURE

2016 EDITION

Launch Presentation 17 March 2016

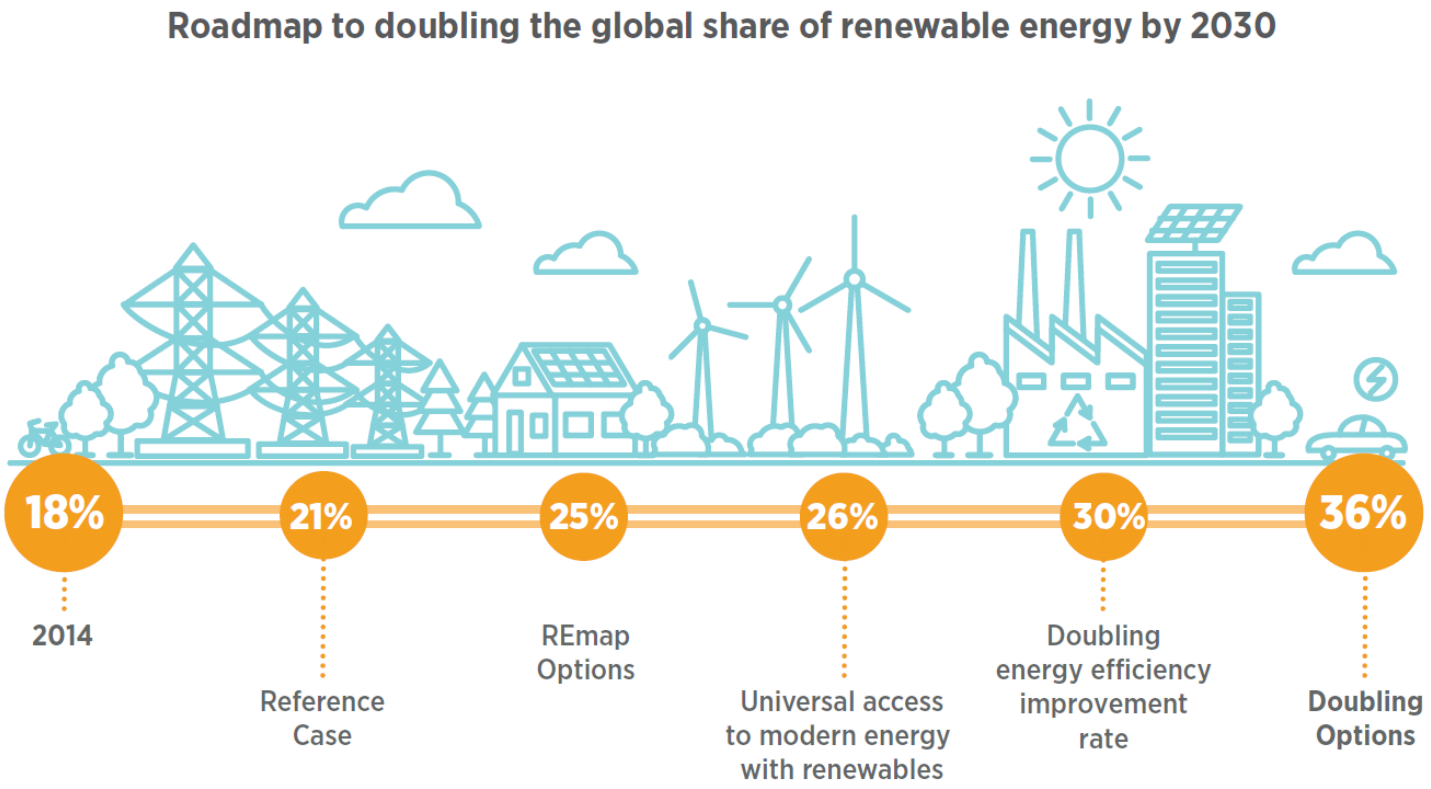
REmap 2016 edition highlights

- **Doubling the share of renewable energy by 2030 is critical** for the achievement of sustainable energy and climate change objectives
- Doubling renewables in the world's energy mix by 2030 will lead to **savings exceeding costs up to 15 times**
- The transition to renewables, with greater energy efficiency, can **limit the global temperature increase to 2 degrees or below**
- Doubling the share of renewable energy by 2030 is feasible, but only with **immediate, concerted action in transport, buildings and industry**

2015: a record year for renewables

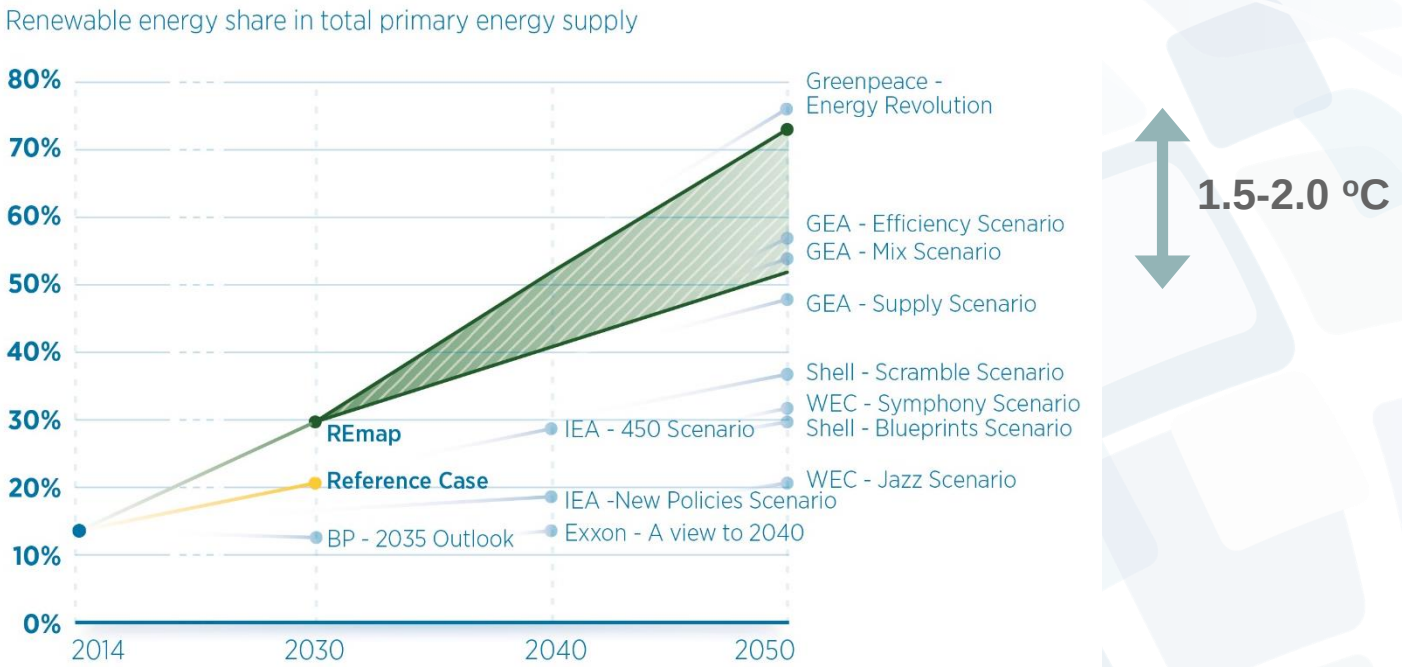
- **51 GW solar PV, 64 GW wind power installed**
  - More than 25% growth from the previous year
  - More than half of all new power generation worldwide is renewable
  - Despite low fossil fuel prices
- **Costs continue to fall:**
  - Solar PV: USD 48/MWh in Peru
  - Wind: USD 40/MWh in Egypt
- **164 countries with RE policies in place**
- **The global energy transition is ongoing**

Doubling the share of renewables



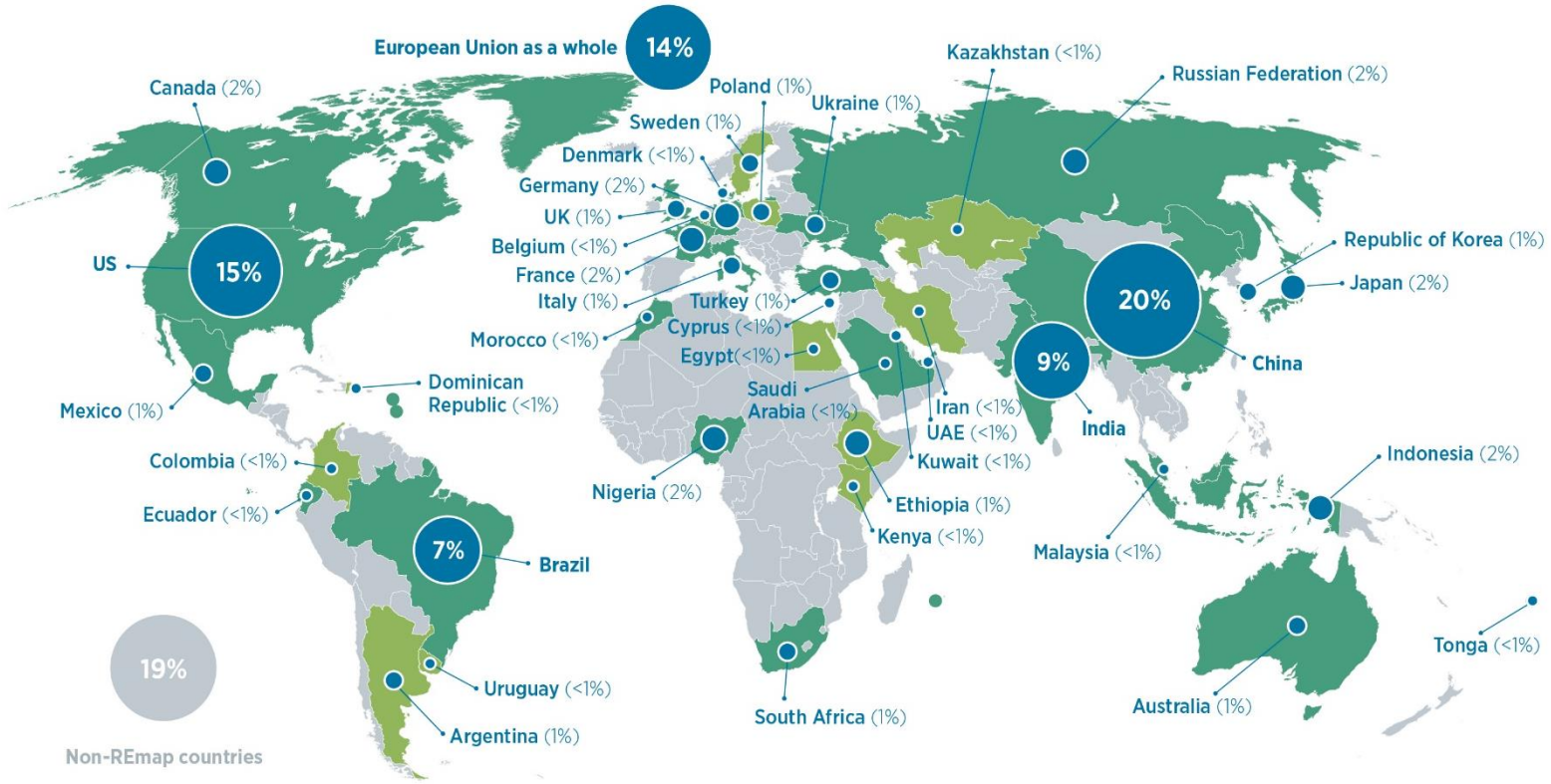
Doubling the world's renewable energy share requires concerted action, reinforcing growth in renewables with energy efficiency and universal access – the three pillars of SDG 7

Towards a carbon-free energy system



The range in projections shows a large uncertainty in how much renewables could grow until 2050, but also highlights the opportunities with deployment in the timeframe

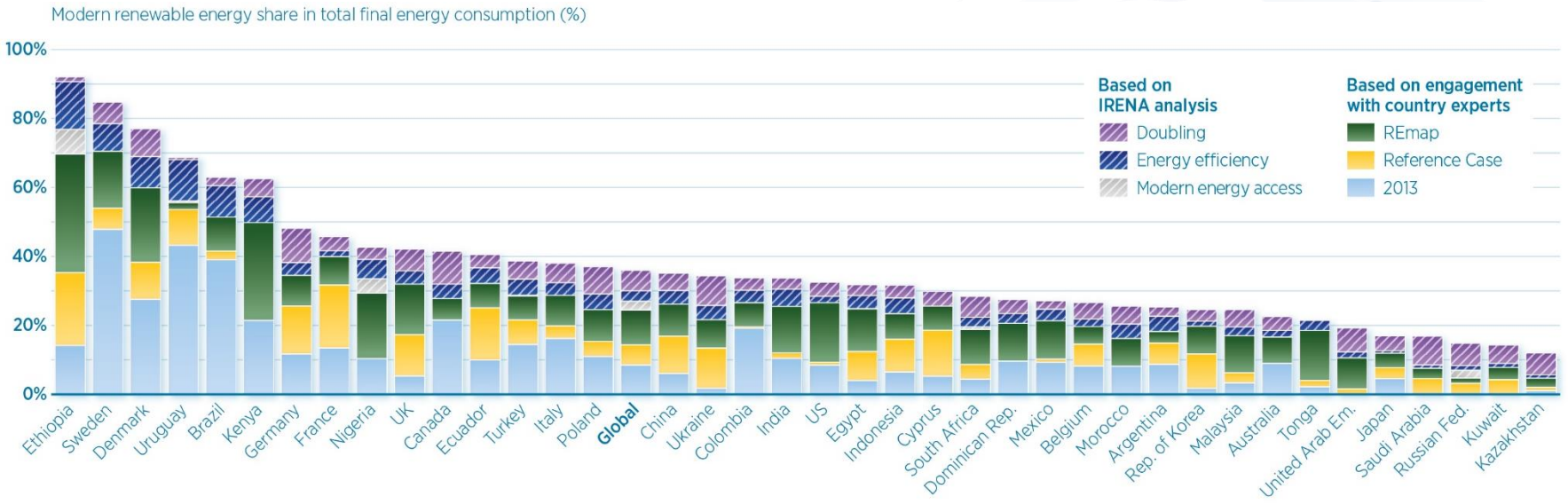
Top 5 countries account for more than half



Note: Percentages indicate how much renewable energy each country consumes of the global total in 2030 if the REmap Options are deployed.

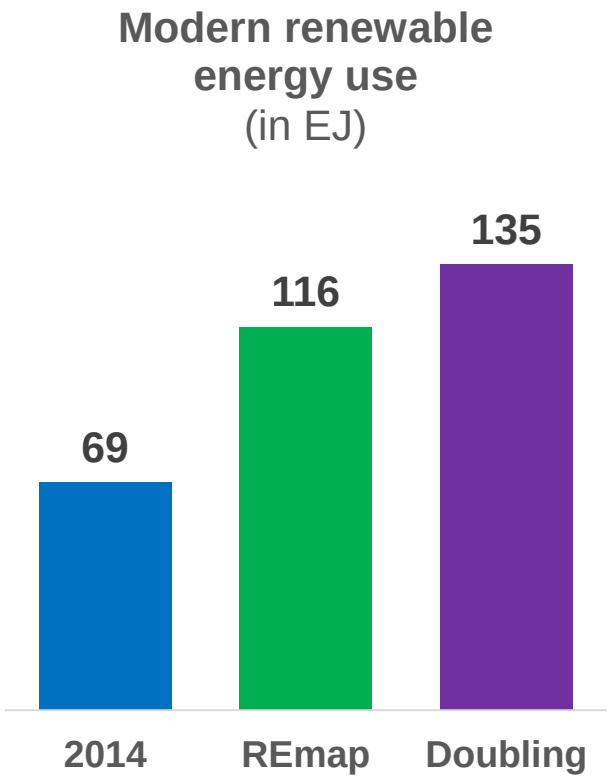
The top five countries make up more than half of renewable energy use in 2030; the next five bring this to nearly two-thirds

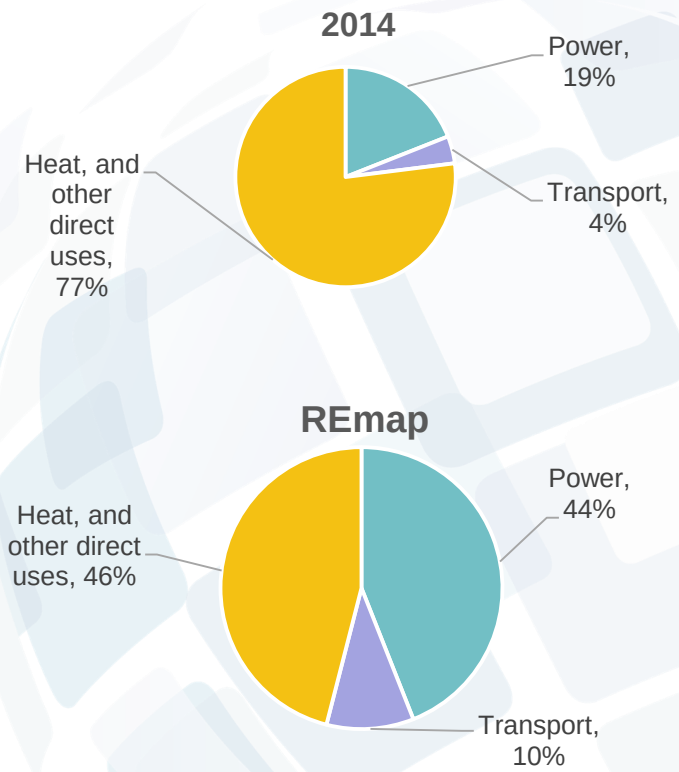
Country RE shares in 2030 vary from 10% to 90%



Potential for additional renewable energy in all countries is identified, with great differences between countries in starting points, local capabilities, and realistic deployment potential

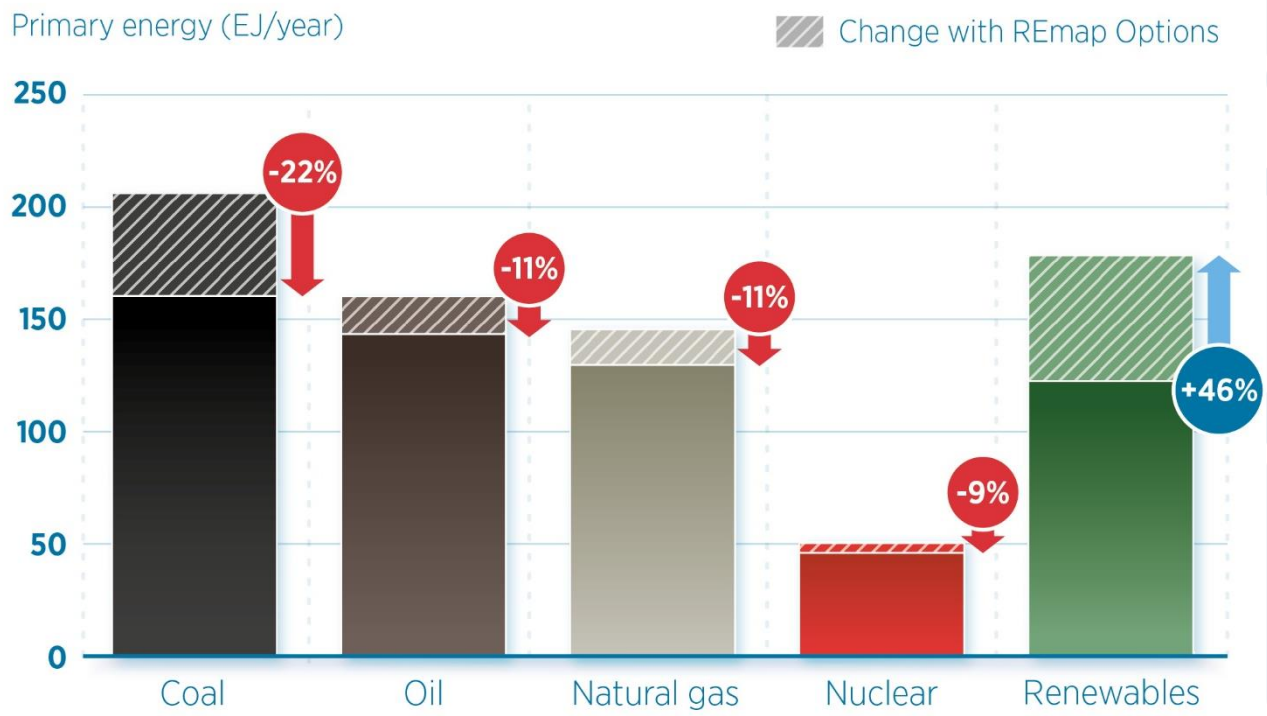
Expanding renewables in all sectors





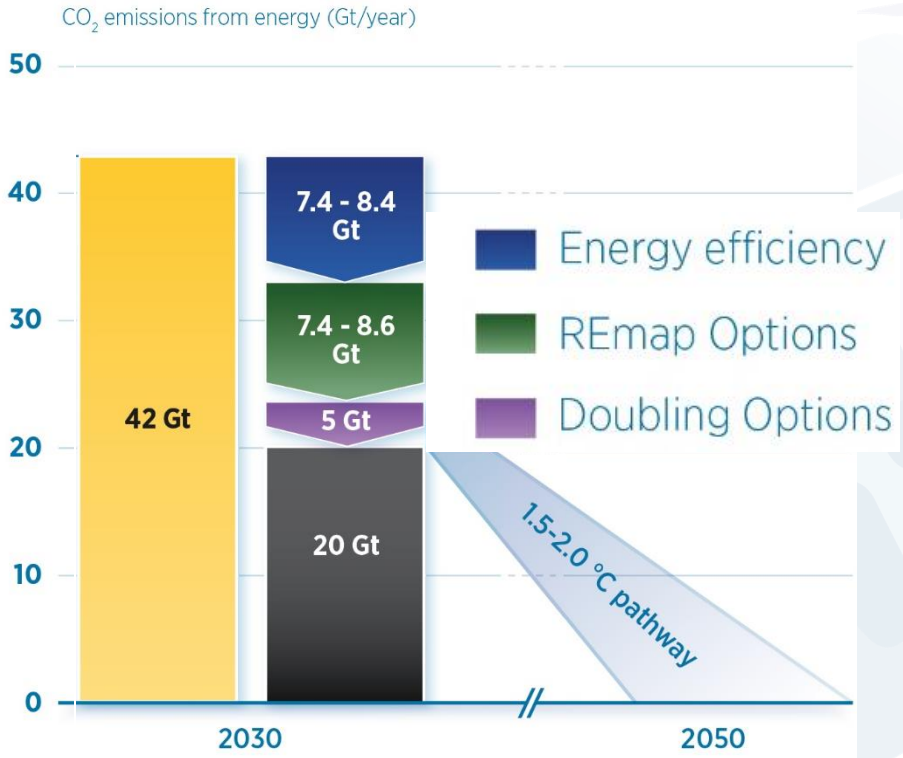
Renewables use in buildings, industry, and transport as well as renewables-based district heating would account for nearly 60% of modern renewable energy use in 2030

Renewables as largest source of primary energy



Renewables would mainly replace coal to become the largest source of primary energy by 2030

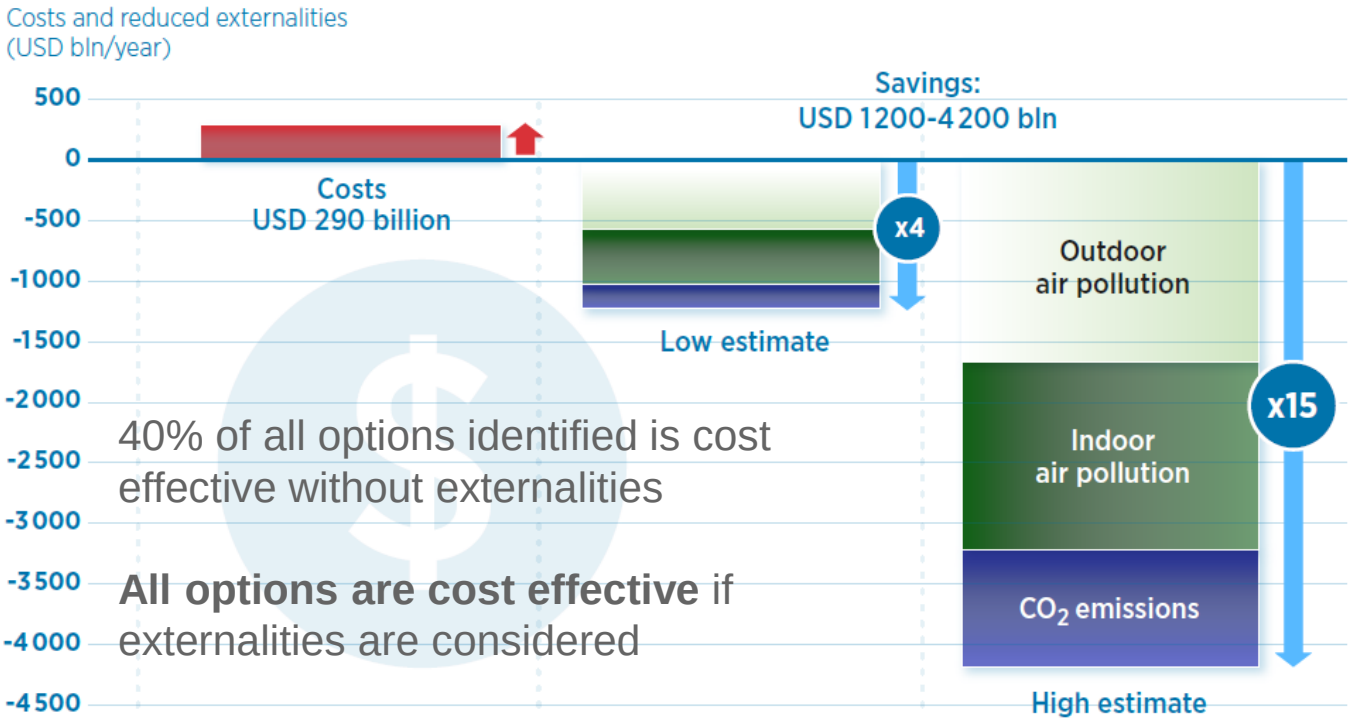
Doubling renewables is critical for meeting climate objectives



Doubling the share of renewables by 2030 would put the world on a pathway to limiting global warming to 1.5-2.0 degrees

Renewable energy reduction potential on par with efficiency potential

Savings greatly exceed costs



Reducing human health damage and CO_2 emissions would save at least four times more than the cost of doubling renewable share

Benefits of a doubling

Limit average global temperature rise to **2 °C** or below (when coupled with energy efficiency)

Avoid up to **12 gigatonnes** of energy-related CO_2 emissions in 2030

24.4 million jobs in the RE sector by 2030, compared to 9.2 million in 2014

Reduce air pollution enough to save up to **4 million lives** per year

Boost global GDP by up to **$ 1.3 trillion**

Key Action Areas

Correct for market distortions to create a level playing field and reform power markets

Introduce greater flexibility into energy systems and accommodate the variability of key renewable energy sources and increase sector coupling

Develop and deploy renewable heating and cooling solutions for urban development projects and industry

Promote transport based on renewable power and biofuels

Ensure the sustainable, affordable and reliable supply of bioenergy feedstock

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