Renewables & Energy Efficiency:

Delivering after COP21

On behalf of

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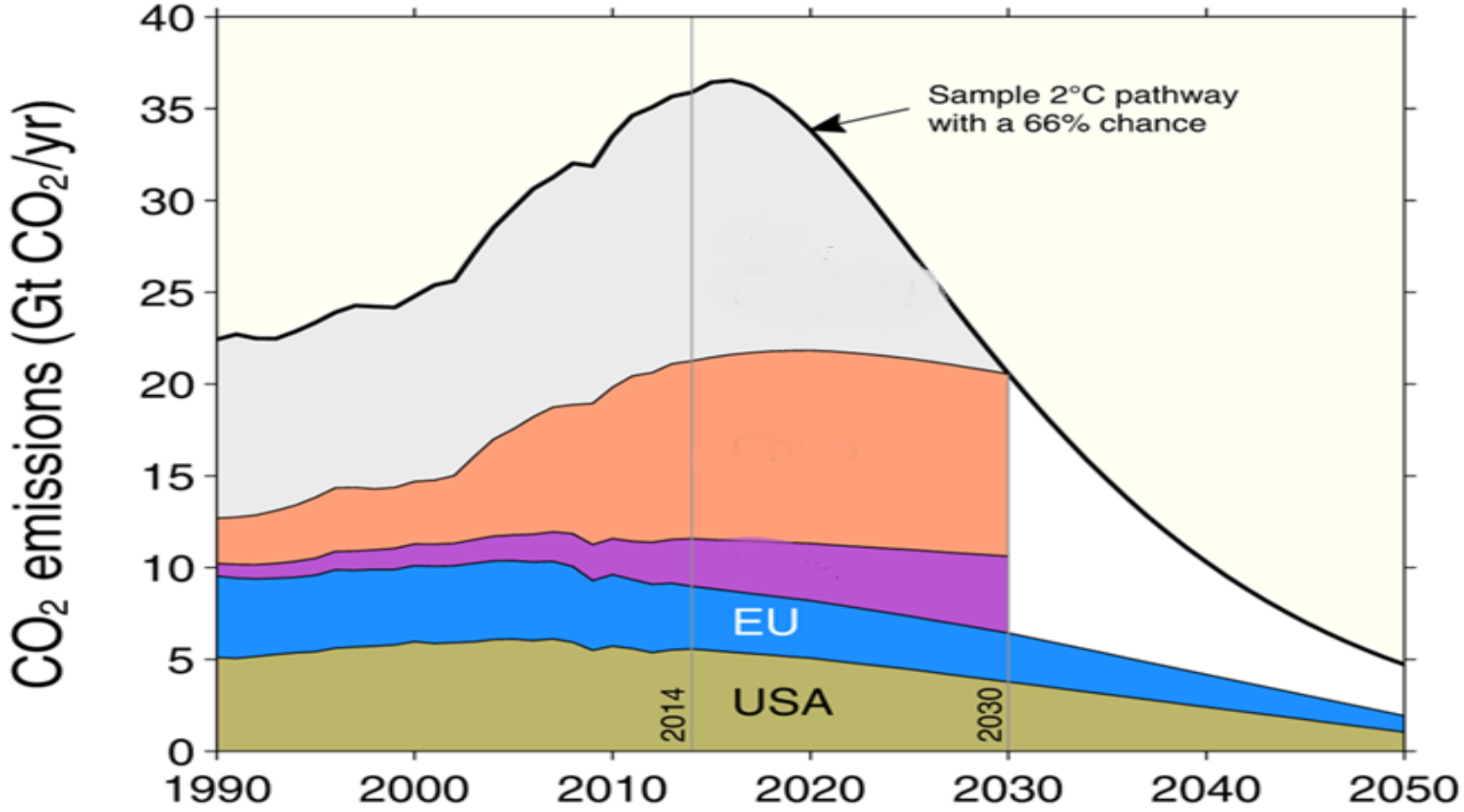
Director General, IRENA

27 September 2016

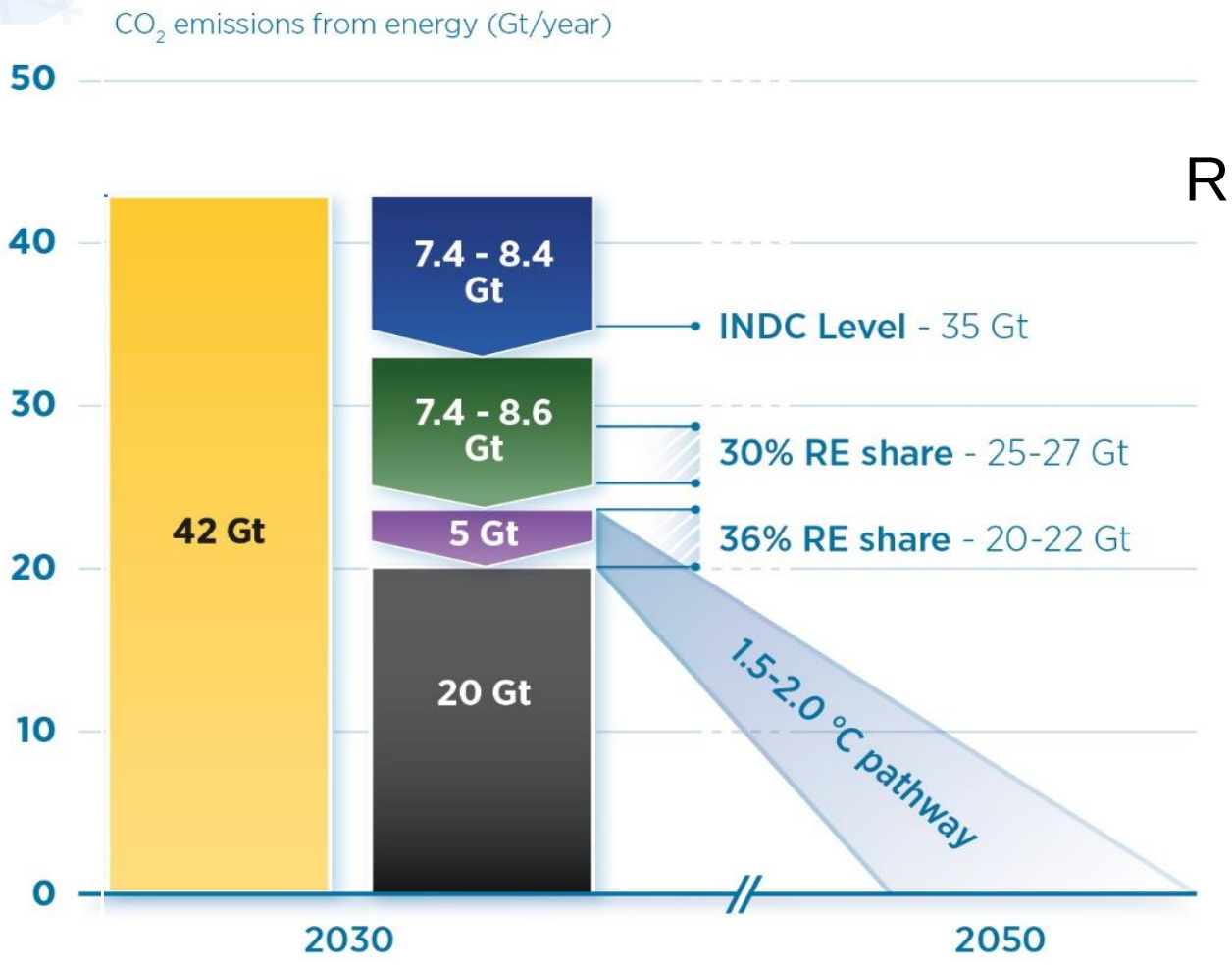
Our biggest challenge?

Time is not our friend

Our biggest challenge?



How do we shift onto a pathway to limit temperature increase to 2˚C?

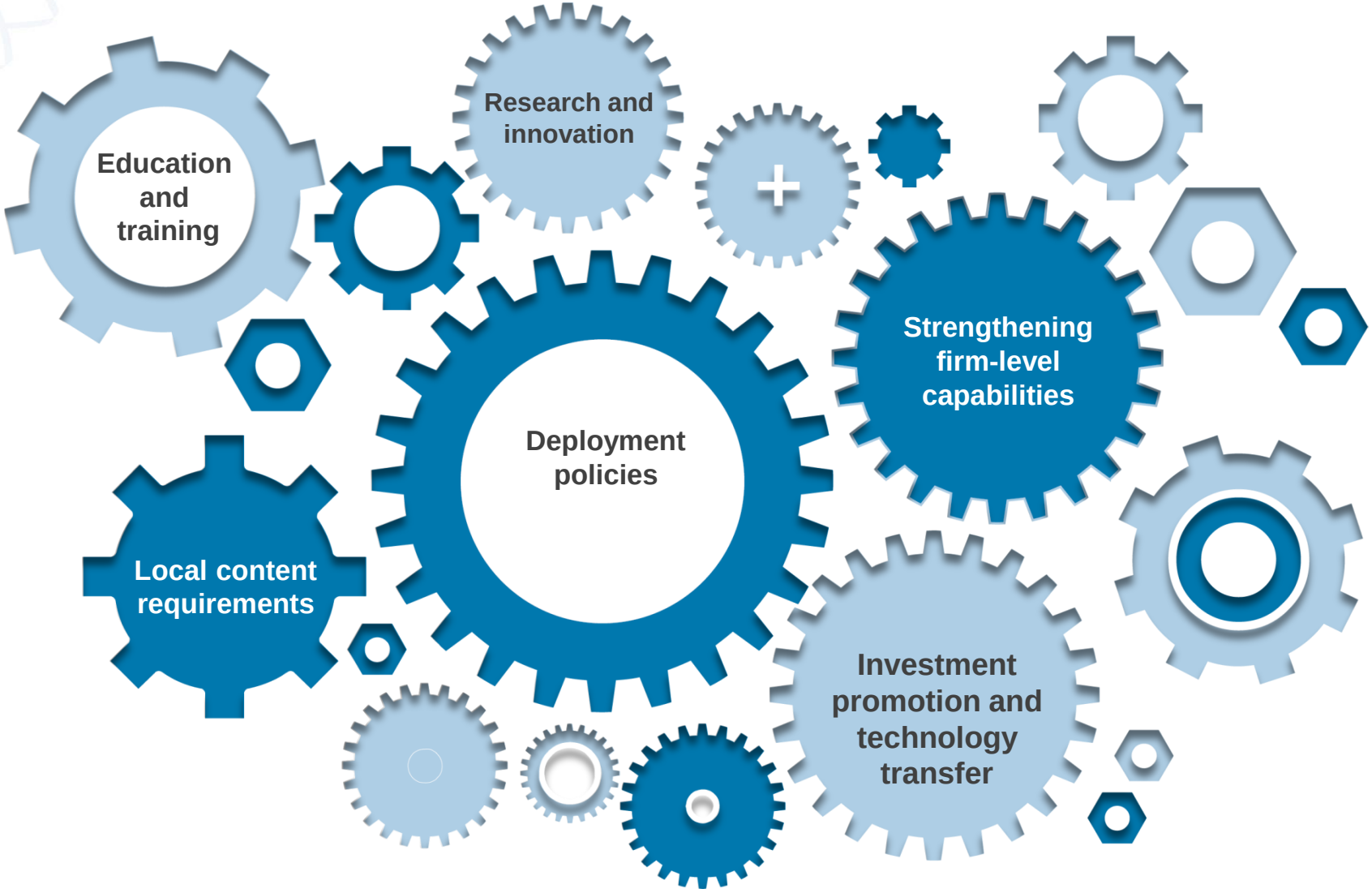


REmap: A roadmap for doubling the share of RE by 2030

Renewable energy and energy efficiency can be rapidly scaled-up

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

First priority: Getting the policy mix right

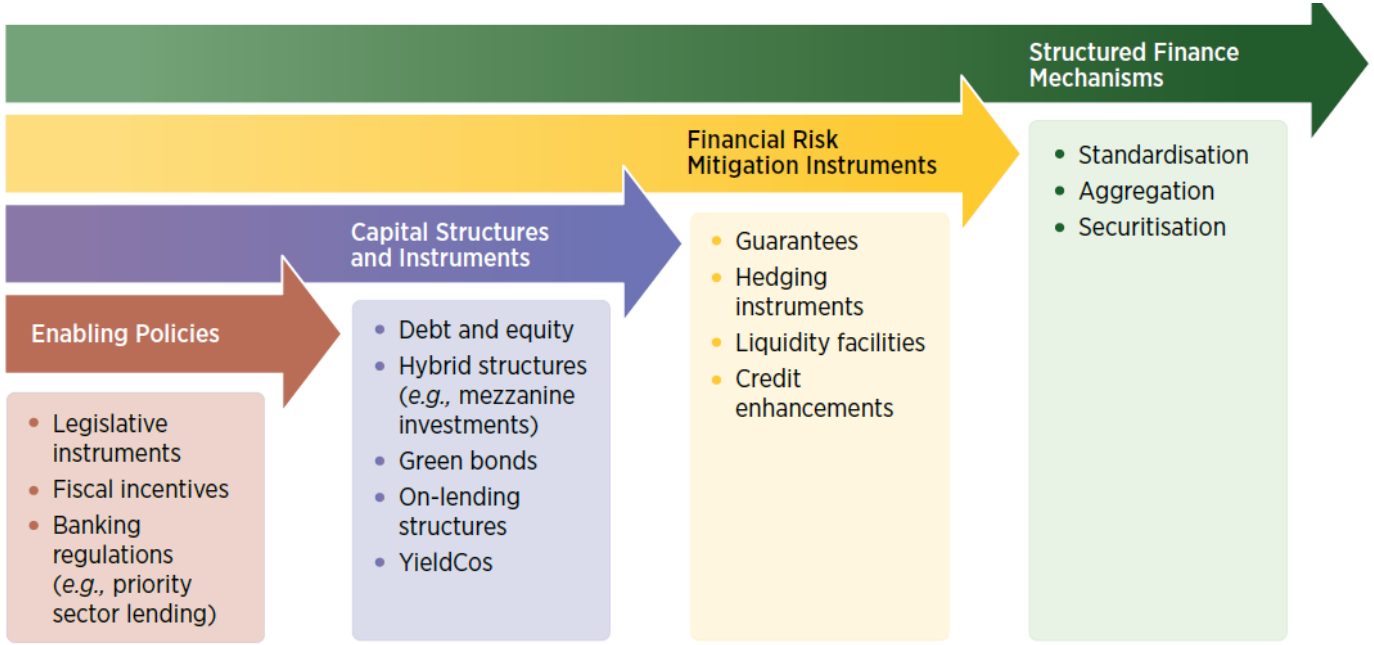


Requires a country and technology specific approach

Resources vary by country

Technology maturity is a spectrum

May also require assistance to de-risk projects



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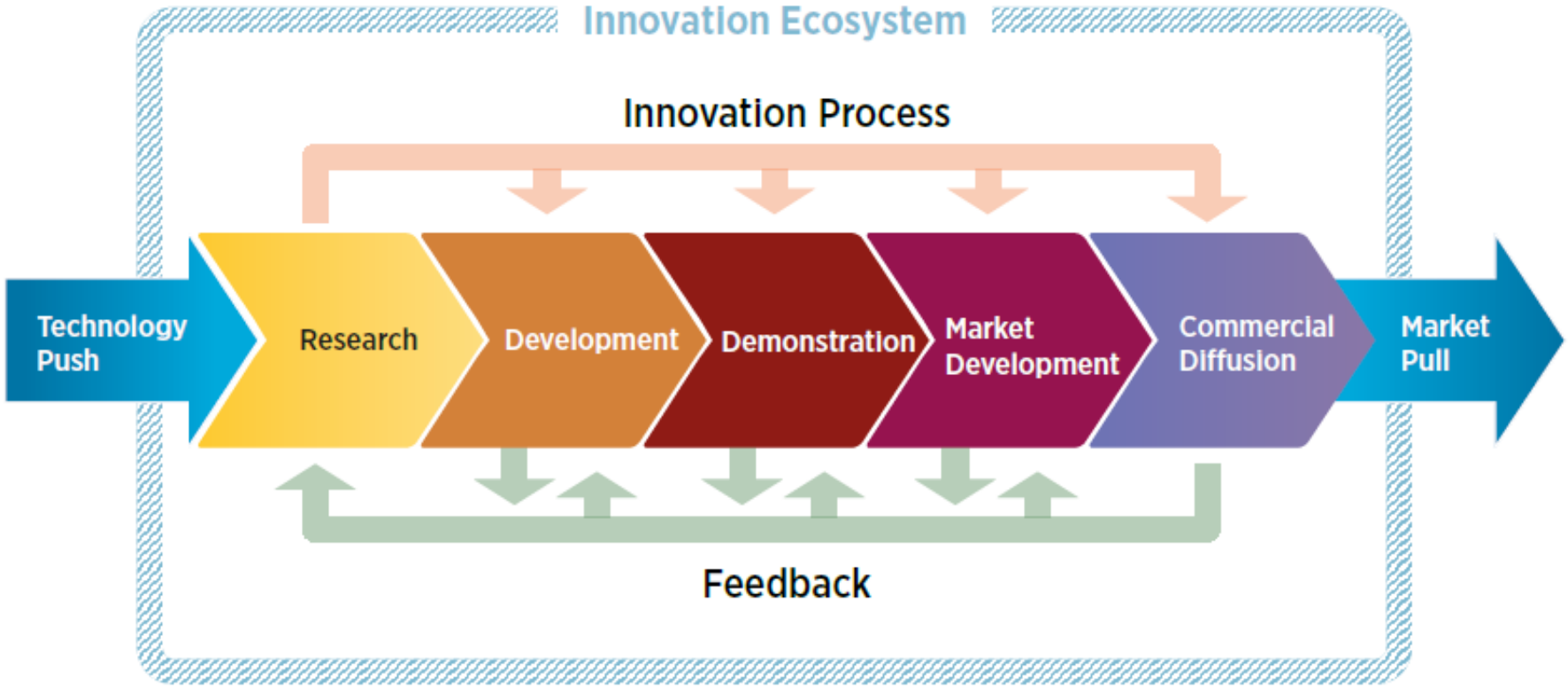
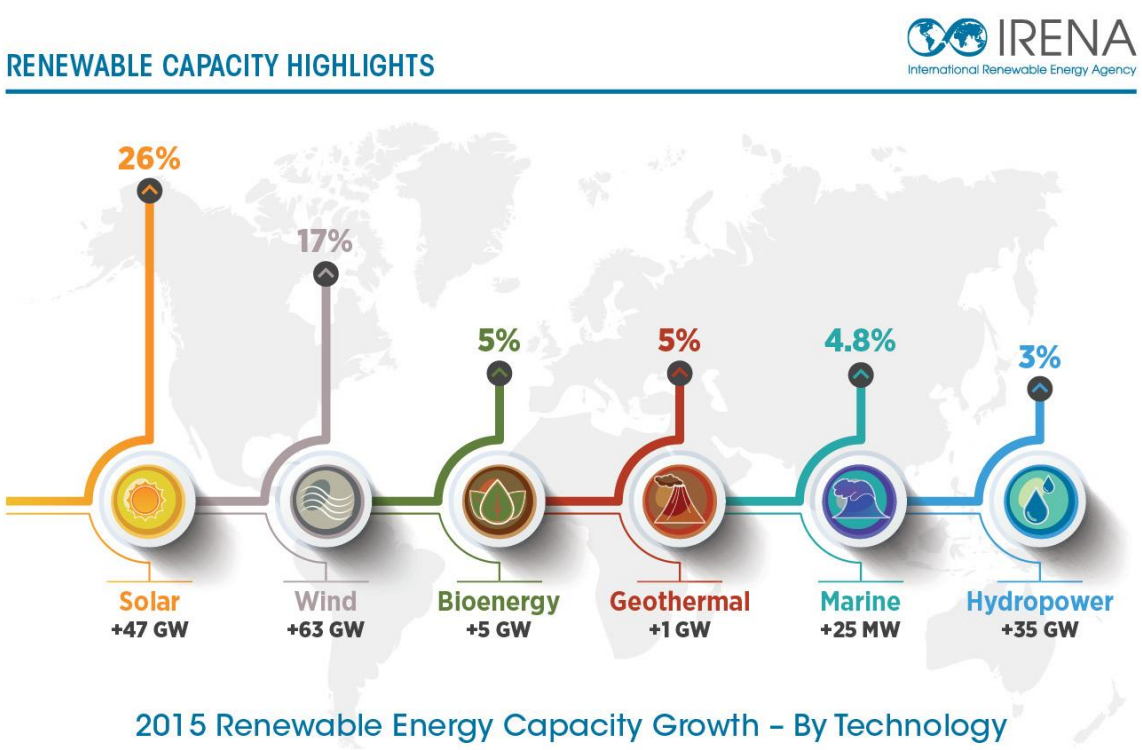
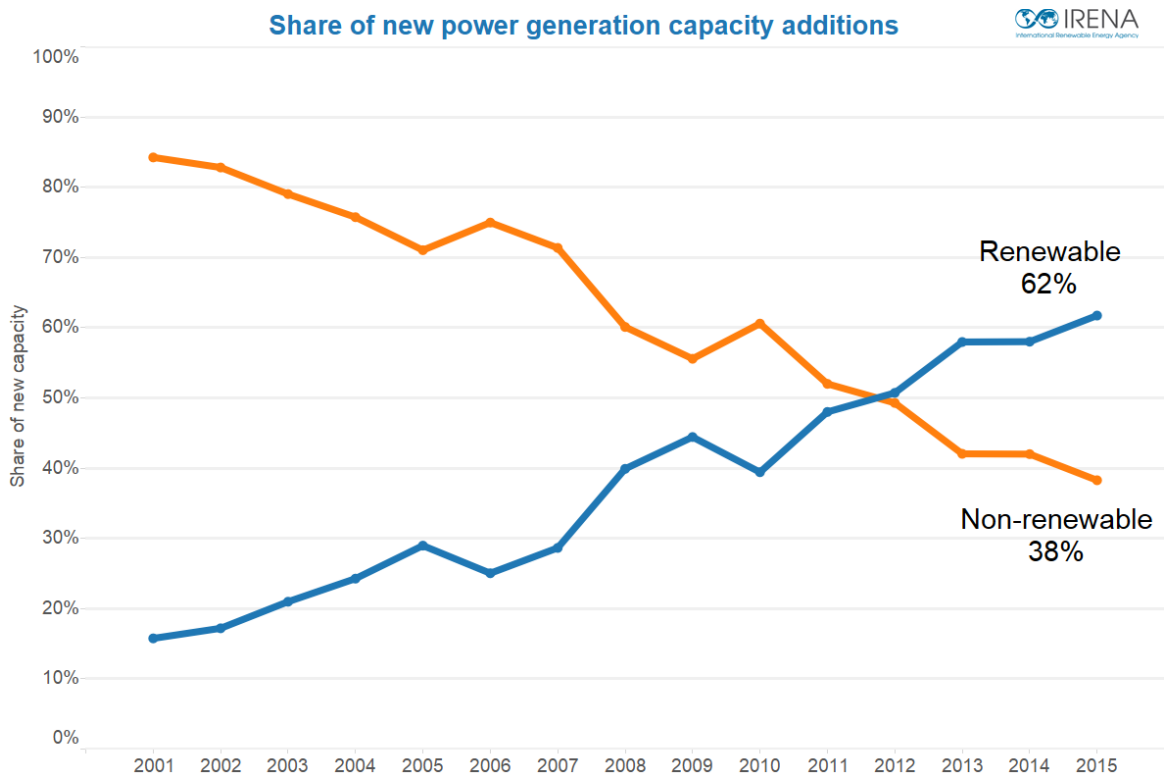
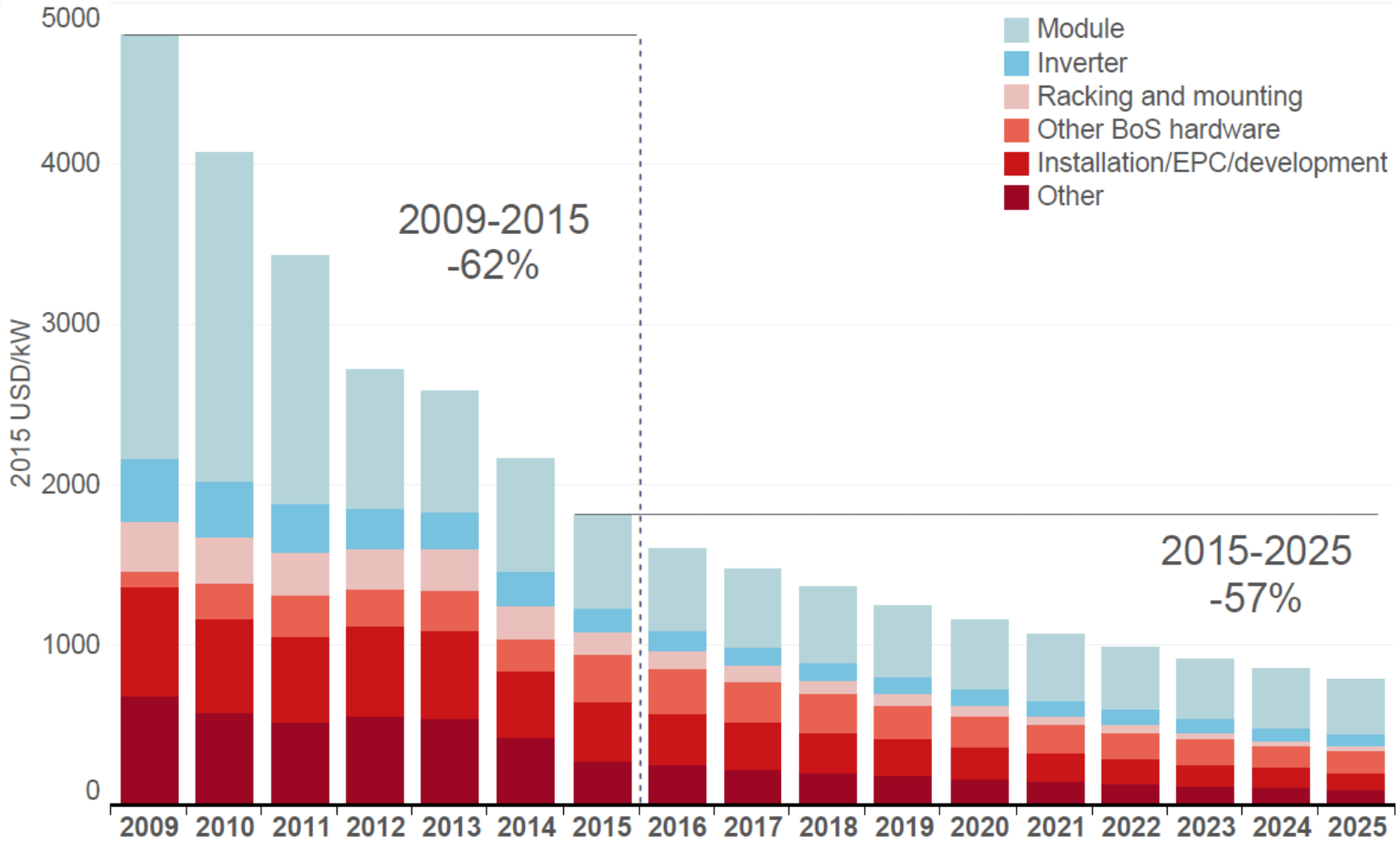


Challenges and opportunities



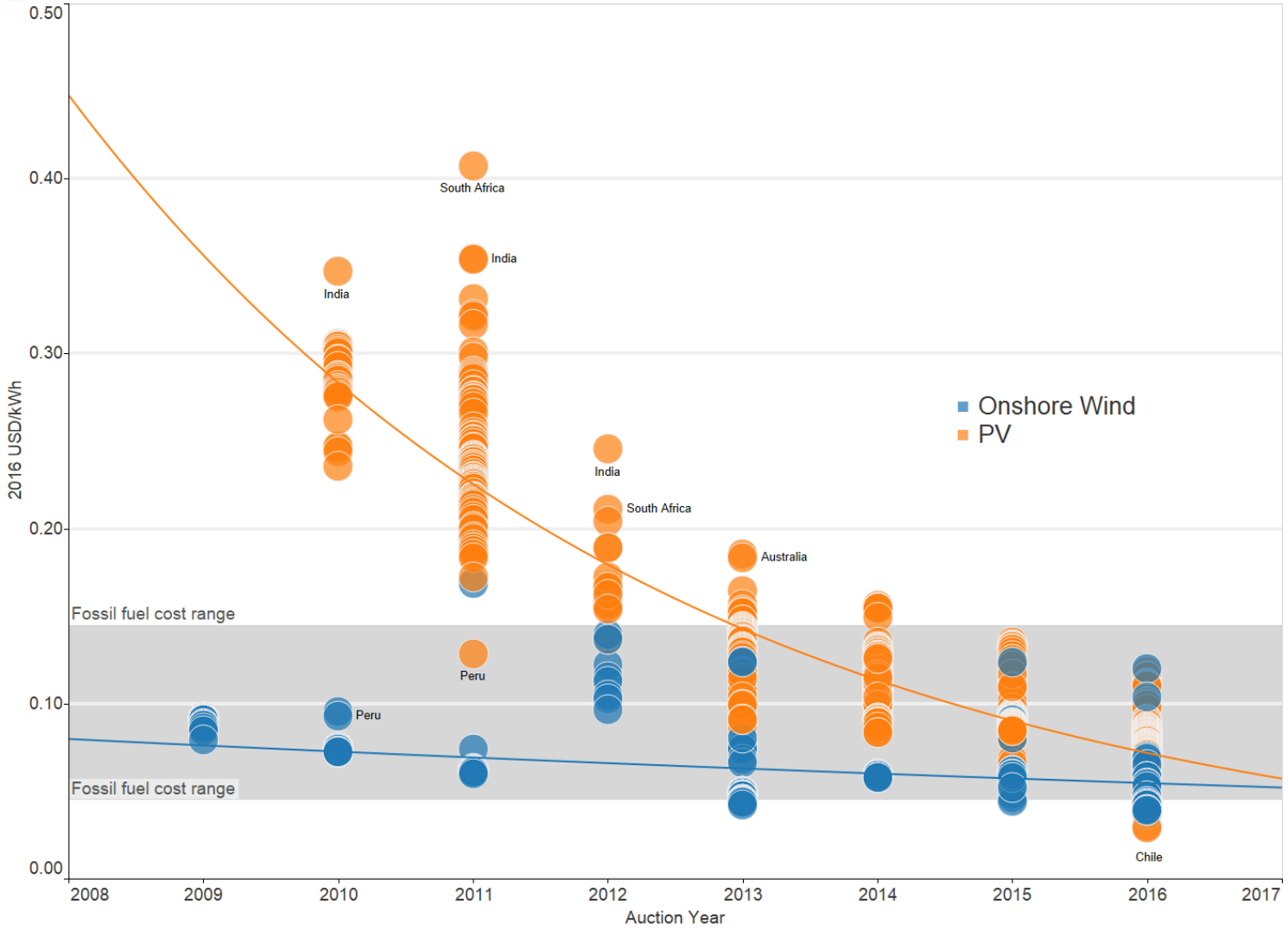


Challenges and opportunities



Utility-scale solar PV installed costs

Challenges and opportunities



Auction/tender PPA results

Challenges and opportunities

Today’s progress in power generation is important

Nature of electricity system is changing

The future electricity system will increasingly reward flexibility

Market design needs more attention

Industry, buildings and transport

Sooner rather than later need to be addressed

Bioenergy, solar heat, geothermal heat, electrification of low temperature heat with heat pumps

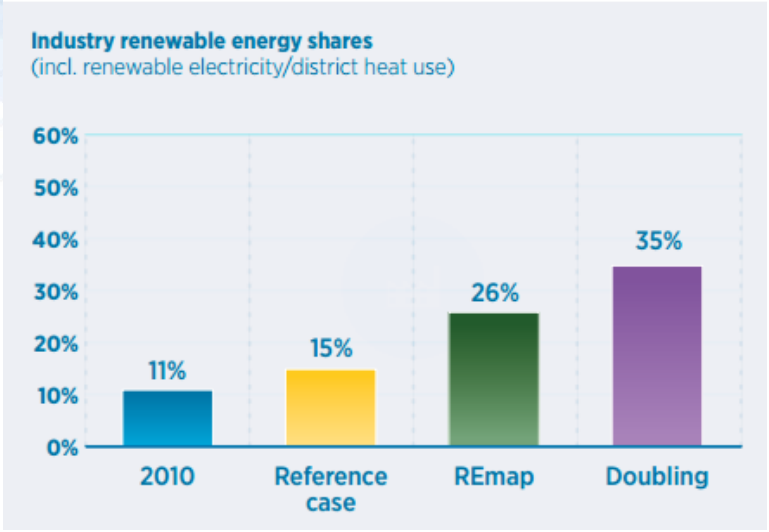
Old inefficient building stock is opportunity in cold climates, but requires widespread retrofits

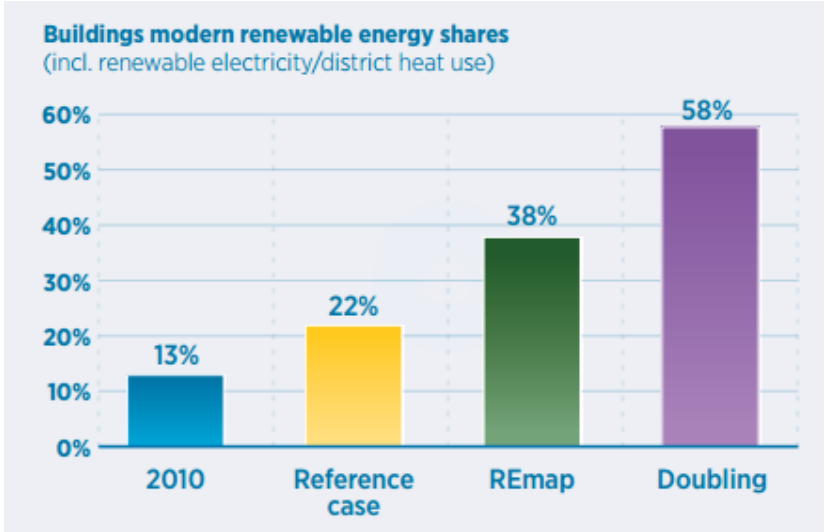
In industry carbon-free alternatives exist for high temperature heat, but can be costly. CCS?

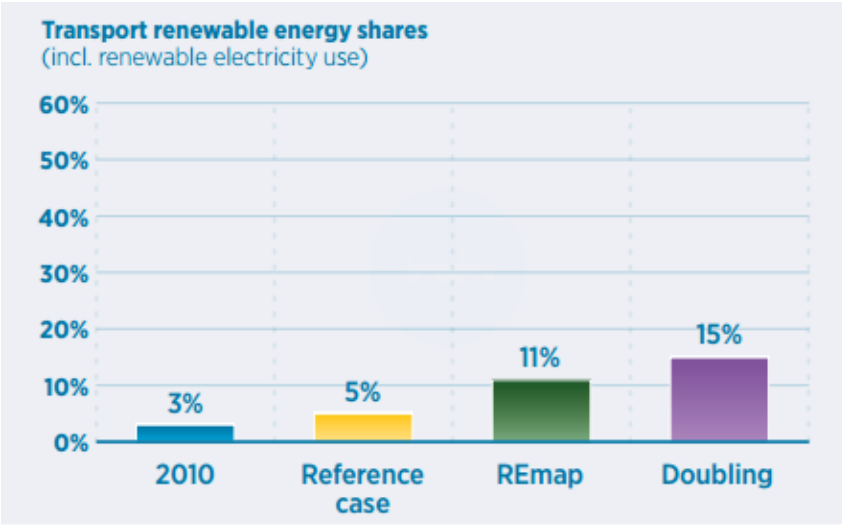
Transport: Biofuels, EVs, biomethane

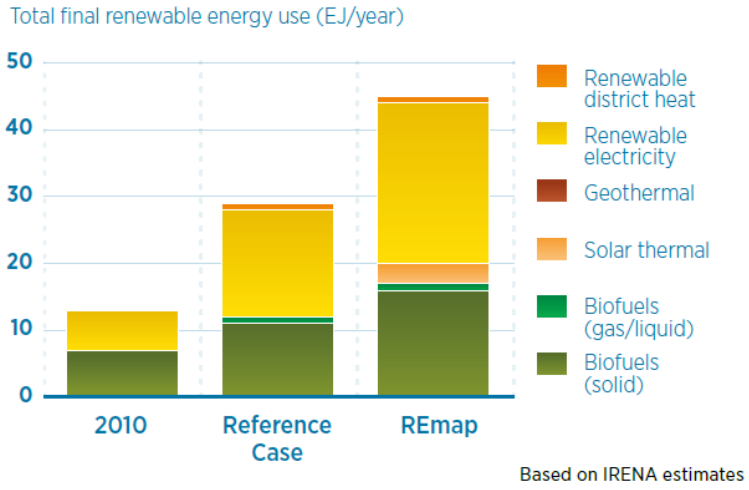
Industry, buildings and transport

IRENA
International Renewable Energy Agency

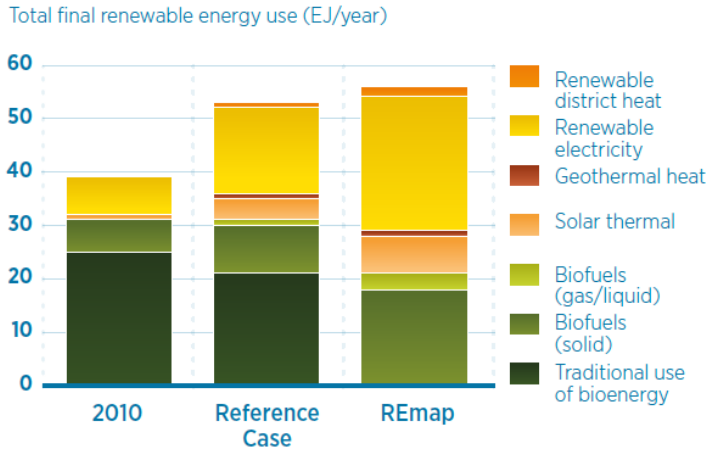


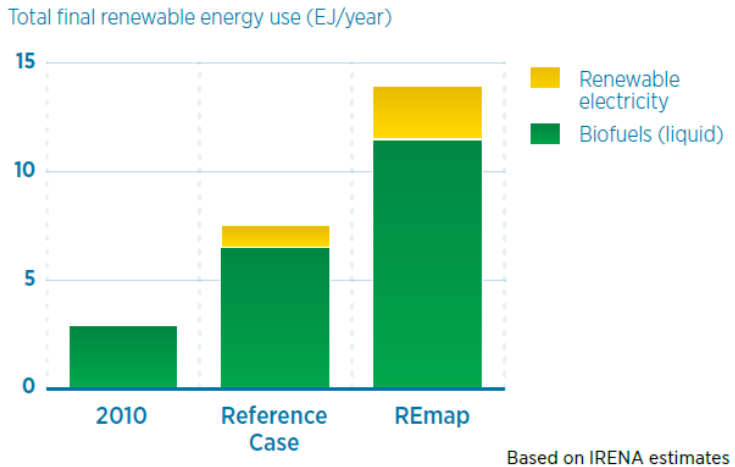






Based on IRENA estimates





Based on IRENA estimates

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

Success will unlock significant benefits

IRENA
International Renewable Energy Agency

REmap 2016 EDITION
A Renewable Energy Roadmap

IRENA
International Renewable Energy Agency
#REmap

KEY BENEFITS OF DOUBLING RENEWABLES

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**