

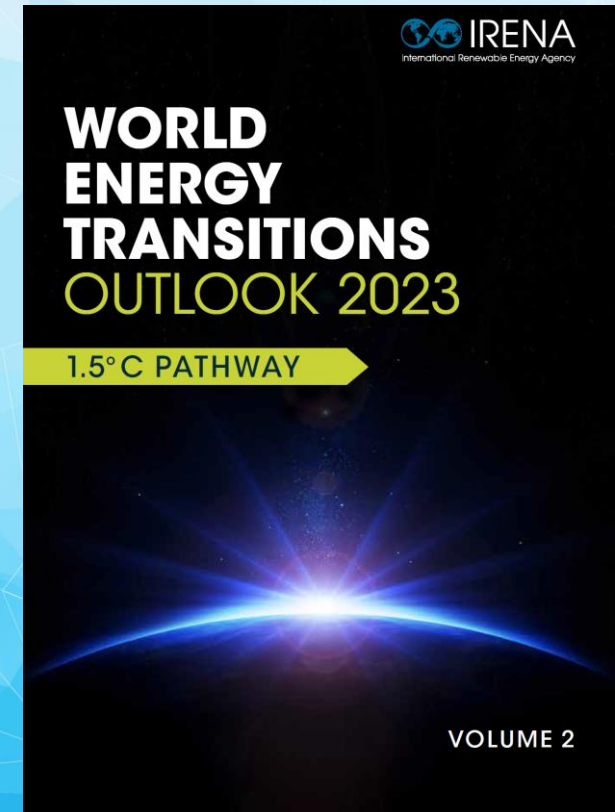
# WORLD ENERGY TRANSITIONS OUTLOOK

## Socio-economic impacts of the energy transition

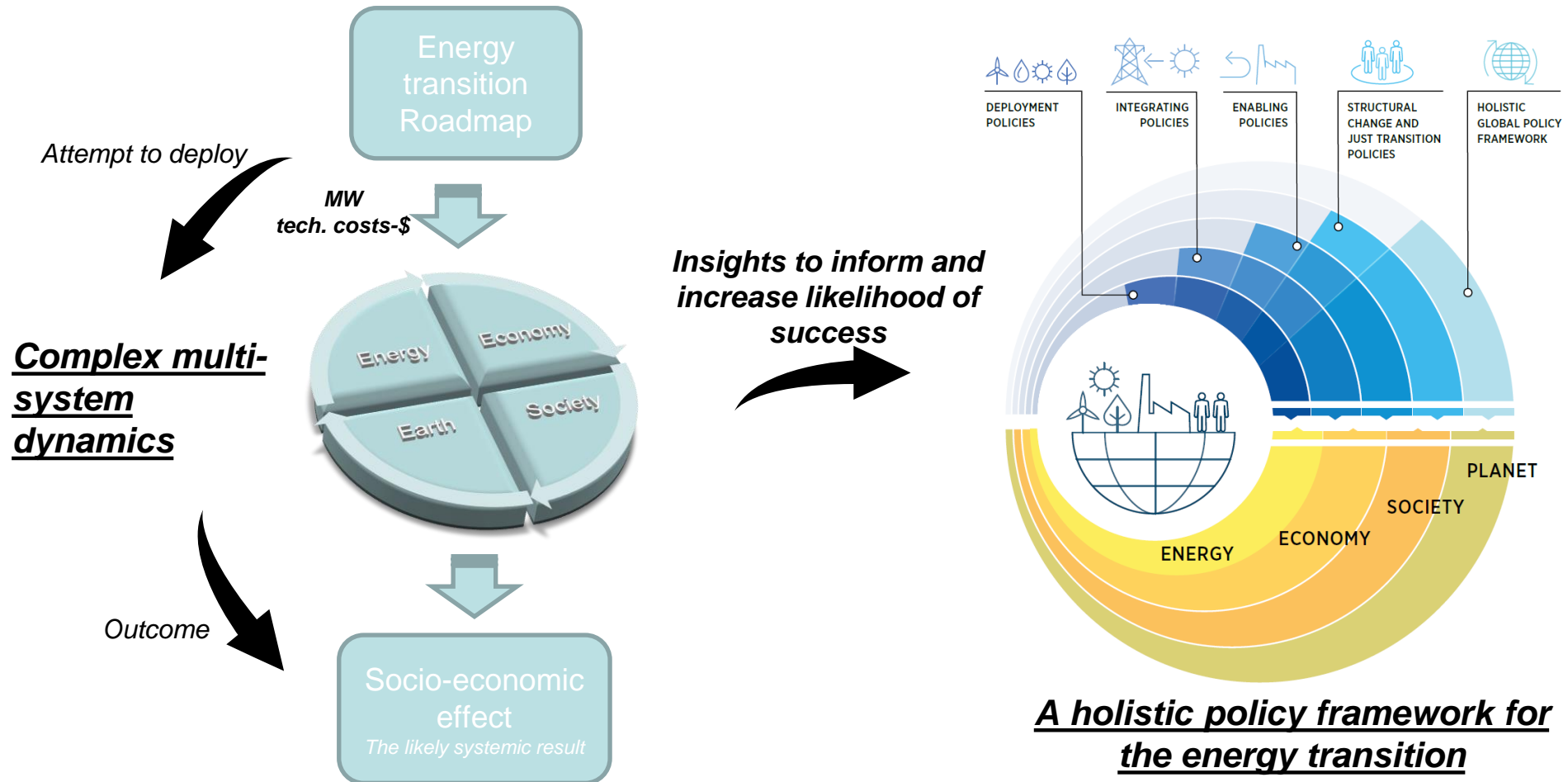
**Gondia Sokhna SECK**

Programme Officer, Team-lead Socio-economic footprint analyses

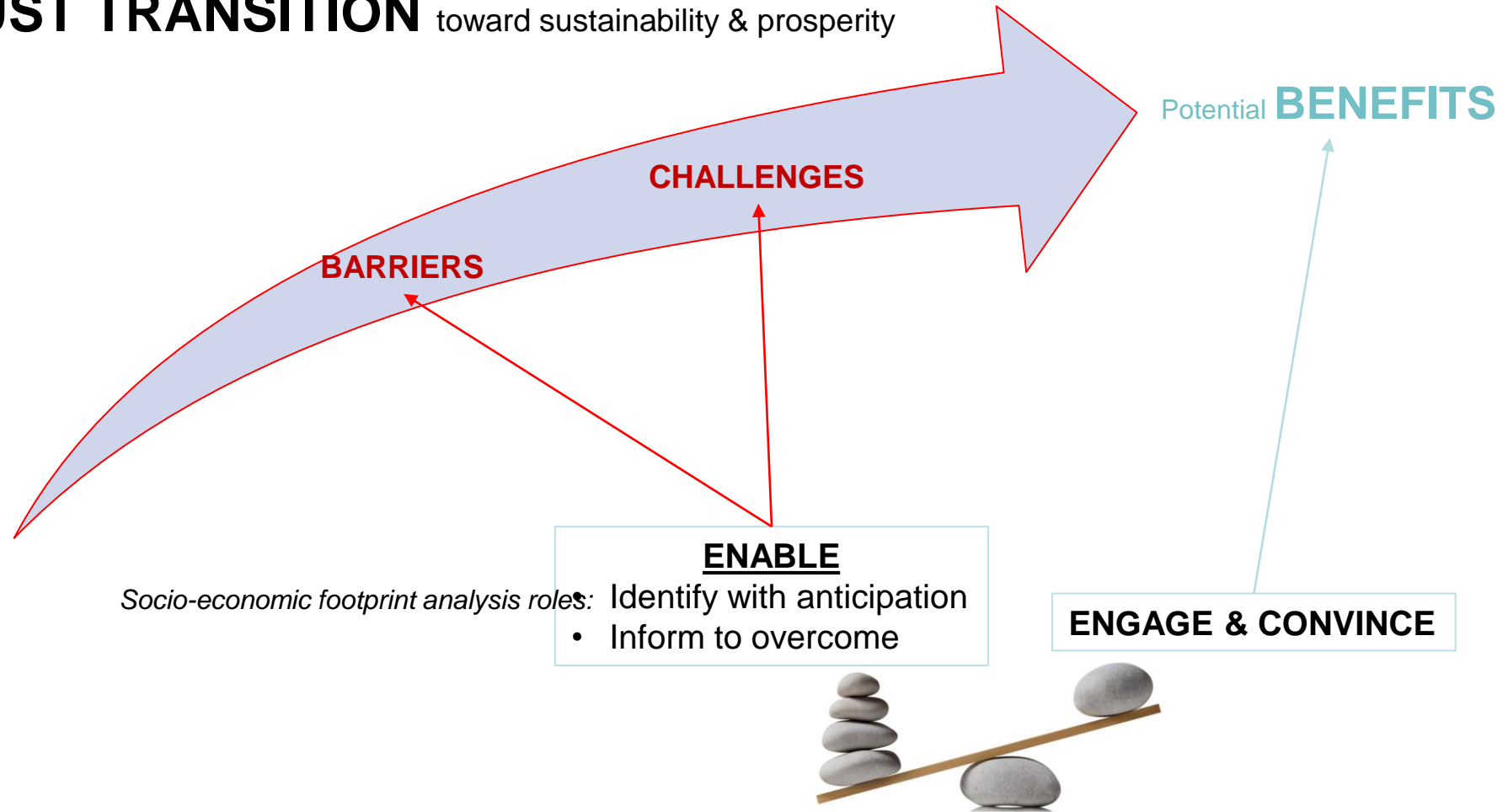
**20<sup>th</sup> February 2024**



## Why the socio-economic footprint analysis?



## JUST TRANSITION toward sustainability & prosperity



# IRENA's socio-economic modelling

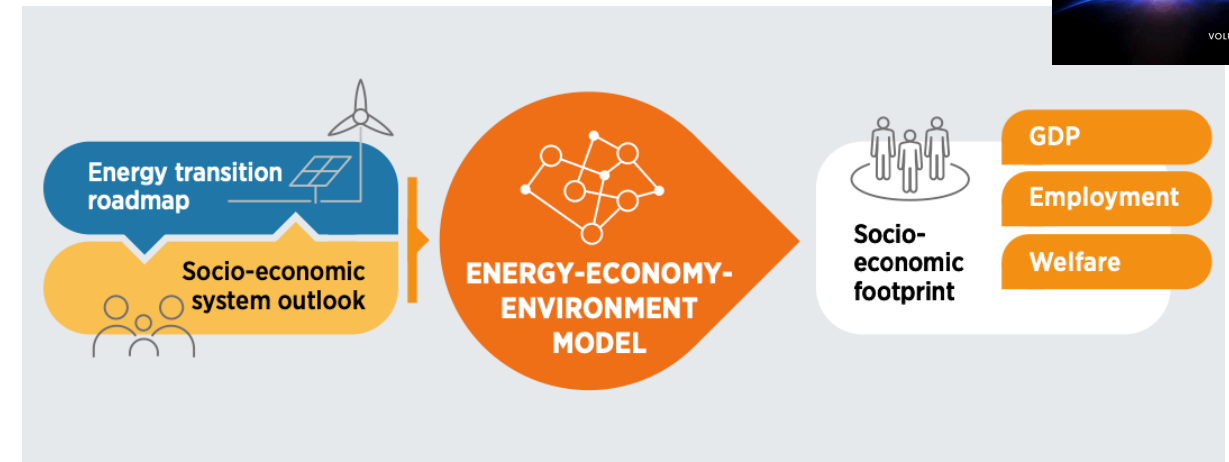
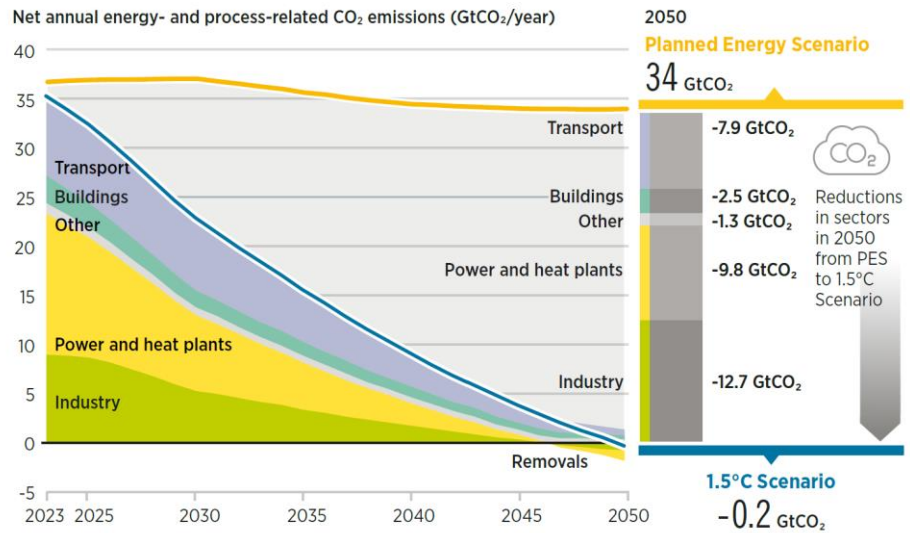
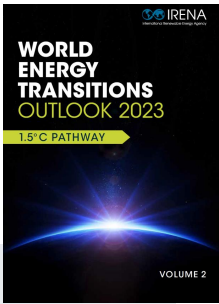
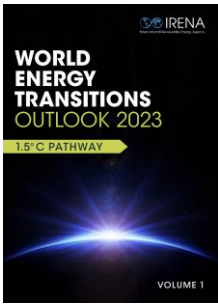
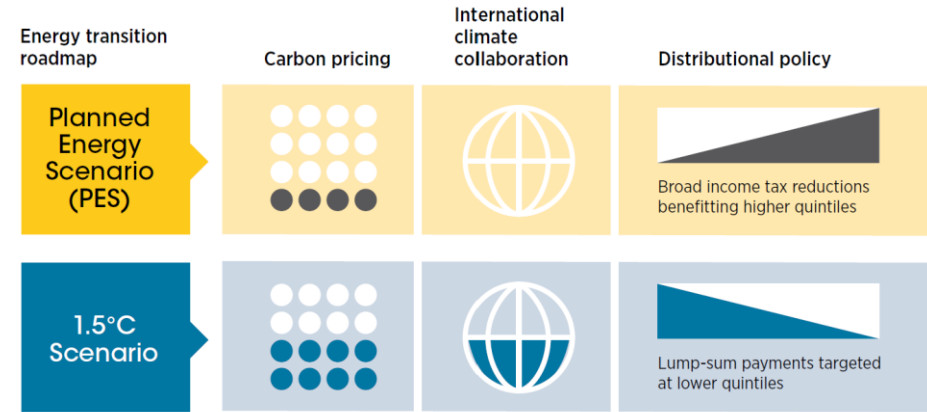
Enabling the transition and unlocking its potential requires gaining insight and fostering synergies between the energy and socio-economic systems.

The **Planned Energy Scenario (PES)** is the primary reference case for this study, providing a perspective on energy system developments based on governments' current energy plans and other planned targets and policies, including Nationally Determined Contributions (NDCs) under the Paris Agreement.

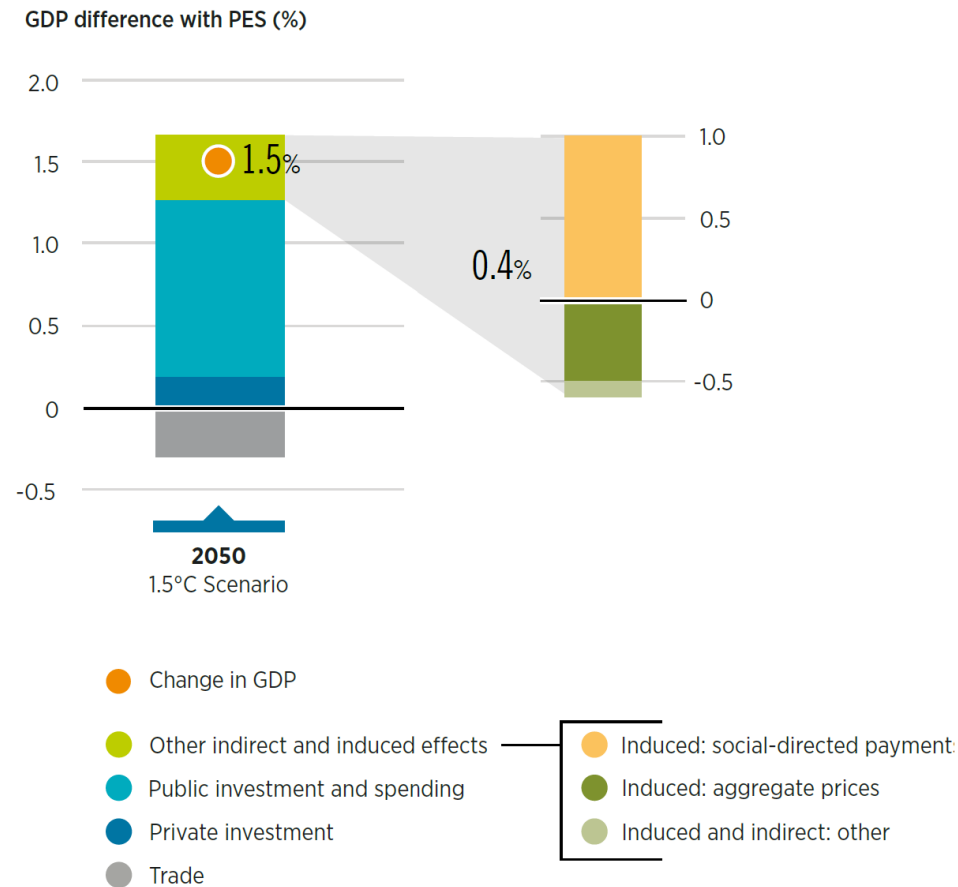
**PES**

The **1.5°C Scenario (1.5-S)** describes an energy transition pathway aligned with the 1.5°C climate ambition - that is, to limit global average temperature increase by the end of the present century to 1.5°C, relative to pre-industrial levels. It prioritises readily available technology solutions, which can be scaled up at the necessary pace for the 1.5°C goal.

**1.5-S**



# Between 2023 and 2050, the world could see an average annual increase in GDP of 1.5% over the PES under the 1.5°C Scenario



Note: GDP = gross domestic product; PES = Planned Energy Scenario.

- ❑ **Public investment** – supported by greater private spending – plays a pivotal role in driving GDP growth, aligning with the collective vision for *sustainable economic development*.
- ❑ Benefitting from the international collaboration flows, worldwide **governmental social spending would rise** to boost domestic social spending and address inequality
- ❑ **Private investment** would be more important until 2030 due to front-loaded transition-related investments; but soon after the first decade, this effect dissipates due to the drop in fossil fuel supply investment and its negative impact on other sectors.
- ❑ **Trade** impacts on GDP are shaped by changes in fuel trade and responses to trade on other commodities. While these effects are minor globally, balancing out between regions, they can be significant at the national or regional level.
- ❑ **Indirect and induced effects** has a positive impact. In the 1.5°C Scenario, tax revenues left over after covering transition-related investment and other policy expenses are assumed to be redistributed to households in the form of payments under a revenue recycling approach, thereby raising household consumption.

# The 1.5°C Scenario would lead to 1.7% higher employment (on average annual terms) than the PES over the 2023-2050 period



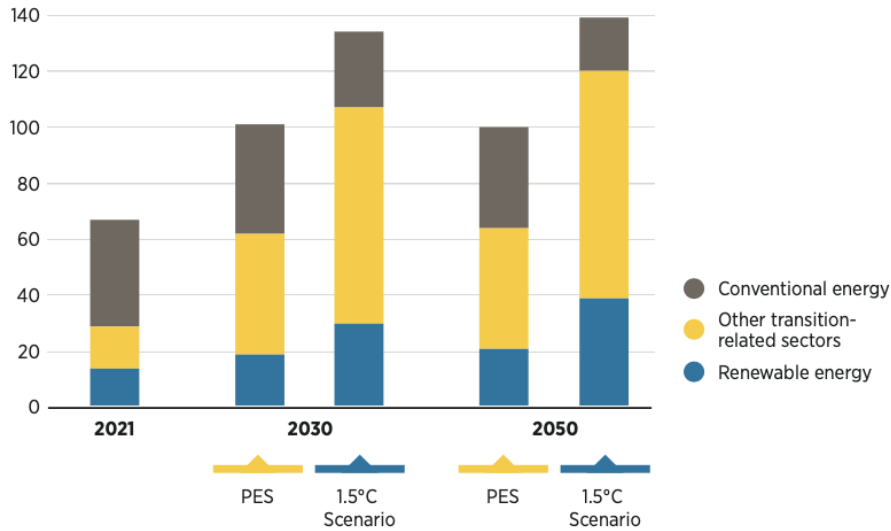
Note: PES = Planned Energy Scenario.

- ❑ Greater **public investment** and spending in transition-related initiatives leads to more jobs across the transition period.
- ❑ **Consumer spending** will be the main factor among the *other indirect and induced effects*, driven by ripple effects from front-loaded transition-related investment and social-directed payments used for consumer spending.
- ❑ Greater consumer spending and changes in its patterns) **will lead to more job creation than job loss in certain sectors, including fuel extraction activities.**

# Under the 1.5°C Scenario, energy sector and renewables jobs would be higher than under the PES

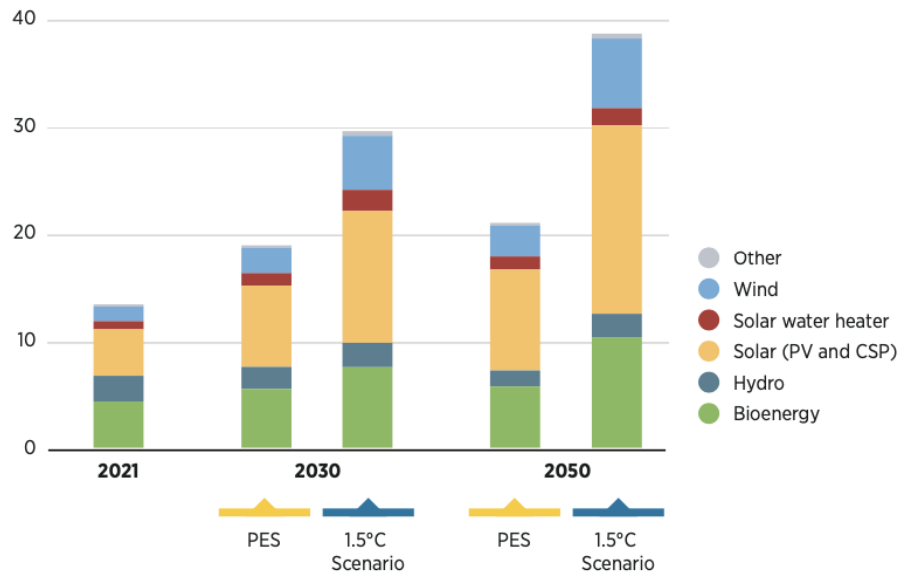
Energy sector

Global jobs (in millions)



Renewable energy sector

Global jobs (in millions)



Jobs in the energy sector under the 1.5°C Scenario

**140 million**

jobs in 2050 compared to today's 67 million

**+40 million**

additional jobs compared to the PES in 2050



Fossil-fuel job losses would require re-training and re-skilling for transition-related jobs.

**19 million**

fossil fuel jobs in 2050 under the 1.5°C Scenario compared to today's 38 million

**-17 million**

fossil fuel jobs losses compared to the PES in 2050



Jobs in the renewable energy sector under the 1.5°C Scenario

**39 million**

jobs in 2050 compared to today's 13.7 million.

**+18 million**

additional jobs compared to the PES in 2050



Jobs in other energy transition-related sectors under the 1.5°C Scenario

**81 million**

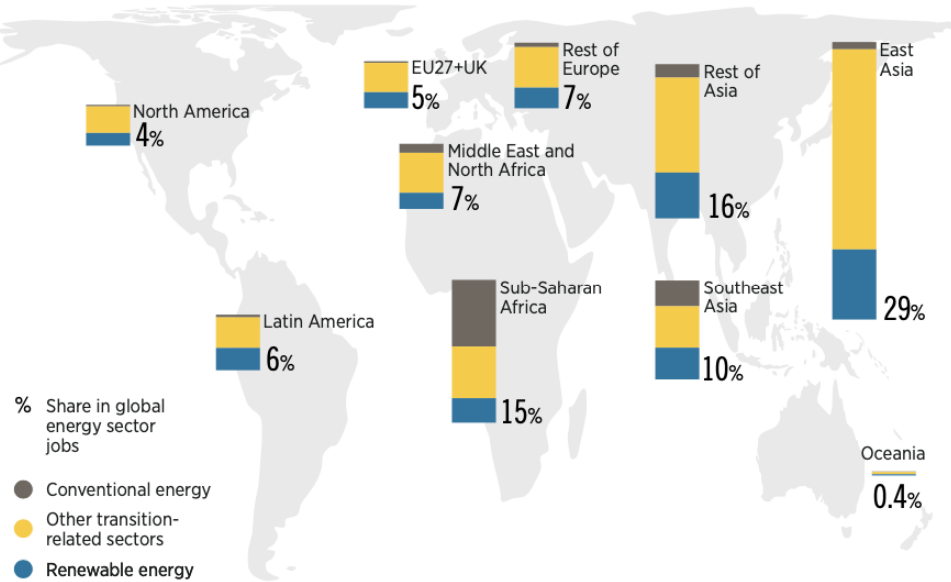
jobs in 2050 compared to today's 15 million.

**+38 million**

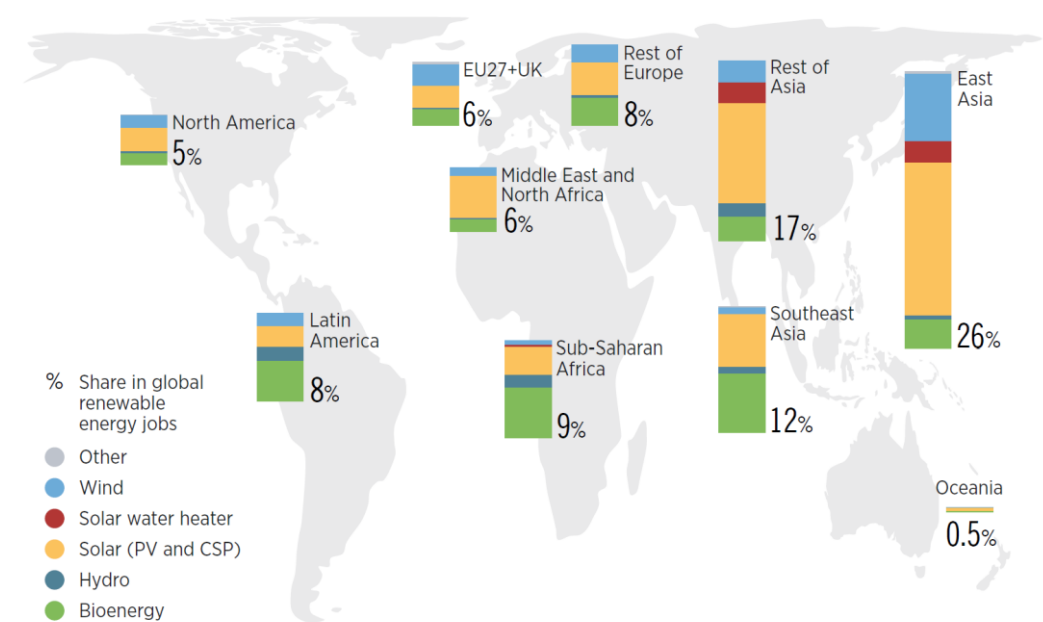
additional jobs compared to the PES in 2050

# By 2050, jobs would be more concentrated in Asia and in Sub-Saharan Africa...

By 2050



**Disclaimer:** This map is provided for illustration purposes only. Any boundaries and names shown do not imply any endorsement or acceptance by IRENA.



Note: "Other" includes geothermal and tidal/wave. CSP = concentrated solar power; PES = Planned Energy Scenario; PV = photovoltaic.

❑ Around **55% of all jobs in the energy sector would be in Asia**, while **15% would be in Sub-Saharan Africa**

❑ **Renewables** will account for about 28% of Asia's energy sector jobs, 36% in the Americas, 33% in Europe and just 25% in Sub-Saharan Africa

❑ The **fossil fuel industry** will still be responsible for 47% of energy sector jobs in Sub-Saharan Africa, 9% in Asia, 5% in Europe and 4% in the Americas.

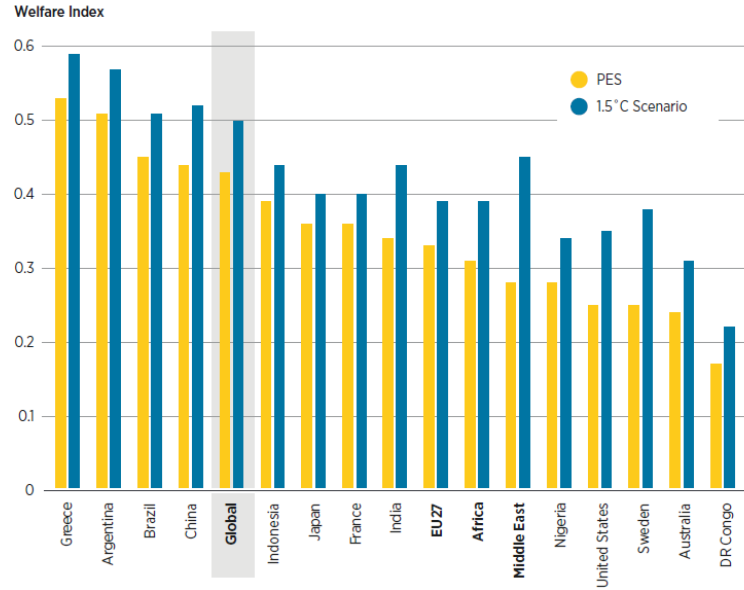
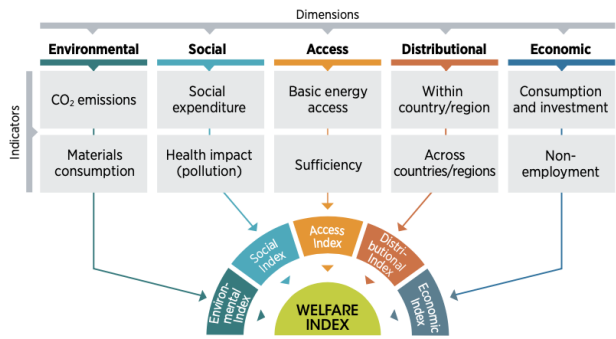
❑ **Solar** will make up nearly 66% of renewable energy jobs in the Middle East and North Africa, 52% in Asia and less than 40% in the other regions.

❑ **Wind energy** accounts for almost 27% of renewable energy jobs in Europe, but just 19% and 16% in the Americas and Asia, respectively.

❑ **Bioenergy** generates more than 50% of renewable energy jobs in Sub-Saharan Africa.

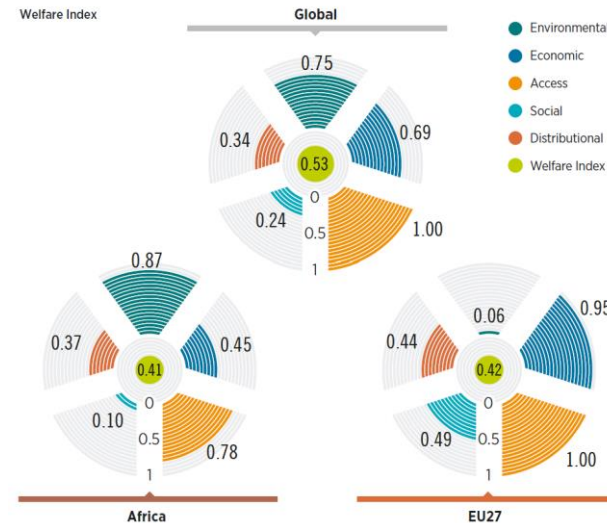


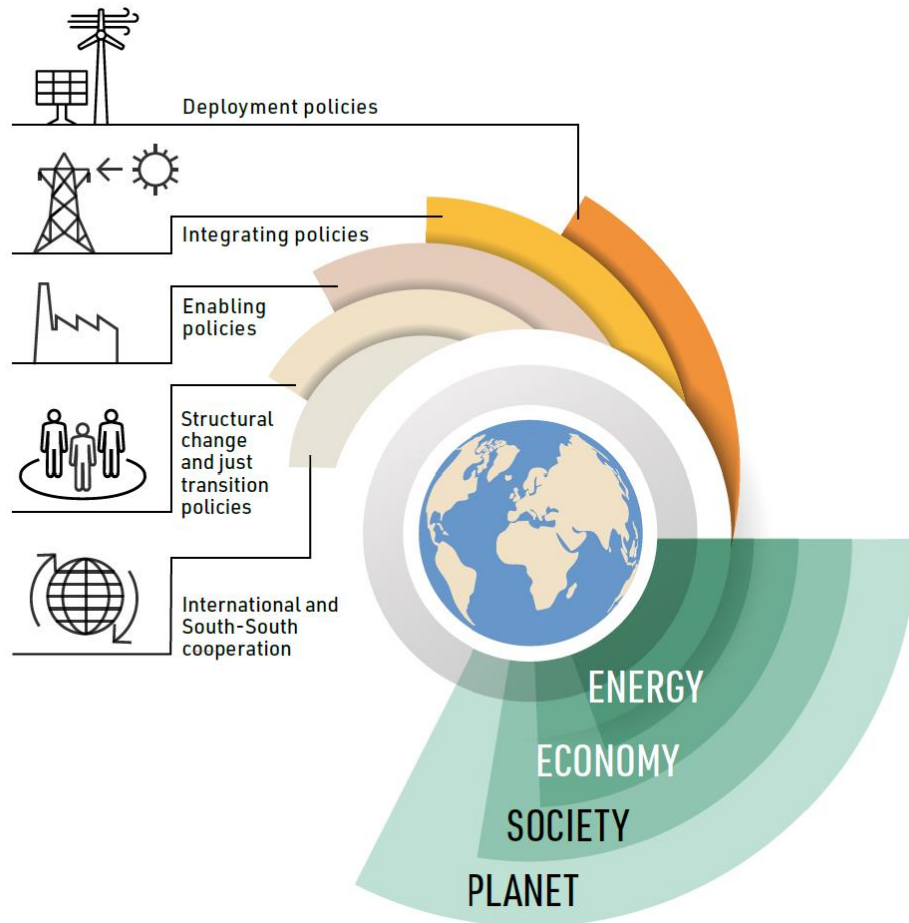
# Welfare improves in all regions



Note: PES = Planned Energy Scenario; Congo = Democratic Republic of Congo; EU = European Union.

❑ Significant potential for improvement in **the social and distributional dimensions**, with less yet still significant potential in the economic and environmental dimensions.





- Industrial policies.**
- Skills assessments and education and training strategies.**
- Labour market measures.**
- Community investment and revitalization.**

شكرا لكم  
谢谢

**Thank you**  
**Merci**

**Спасибо**  
**Gracias**