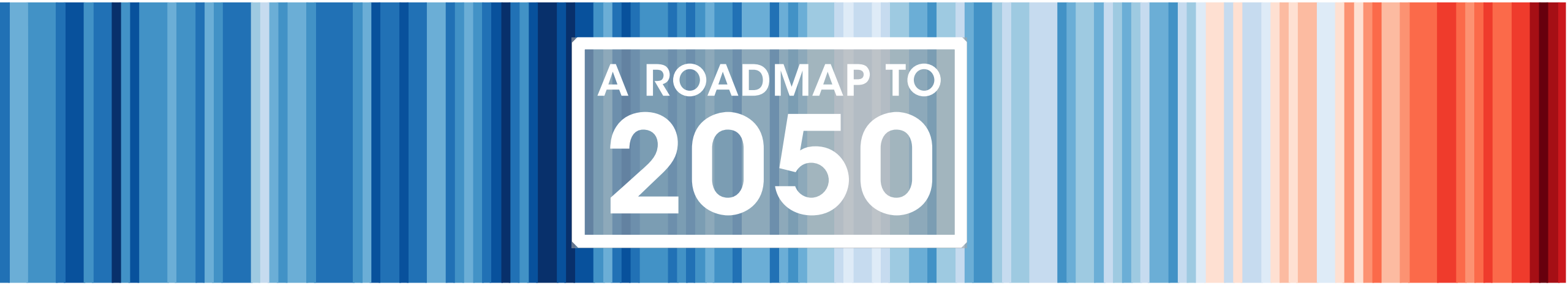
IRENA
International Renewable Energy Agency

GLOBAL ENERGY TRANSFORMATION

Socio-economic footprint of the energy transformation



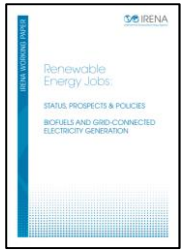
Badariah Yosiyana

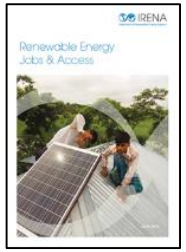
31 October 2019• Singapore International Energy Week • Singapore

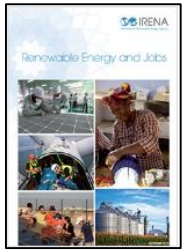
Socio-economic Impacts: IRENA's Data and Analytical Reports

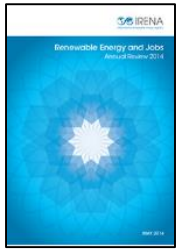
2011	2012	2013	2014	2015	2016	2017	2018	2019

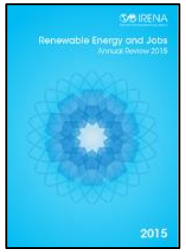
★ **Jobs – Annual Review**

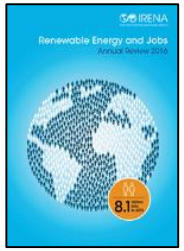


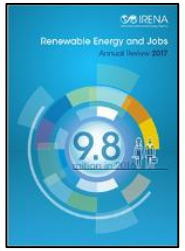


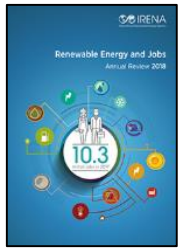


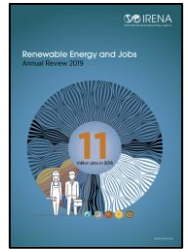




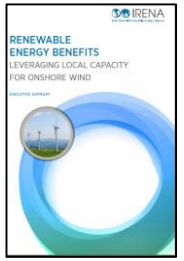




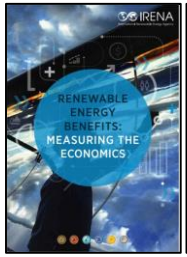


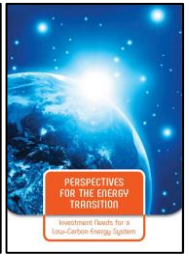


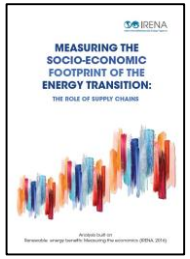
★ **Leveraging Local Capacities**

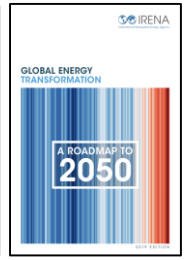


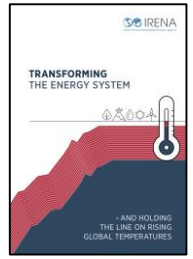
★ **Measuring the Socioeconomics / Global Energy Transformation**



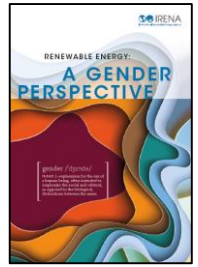




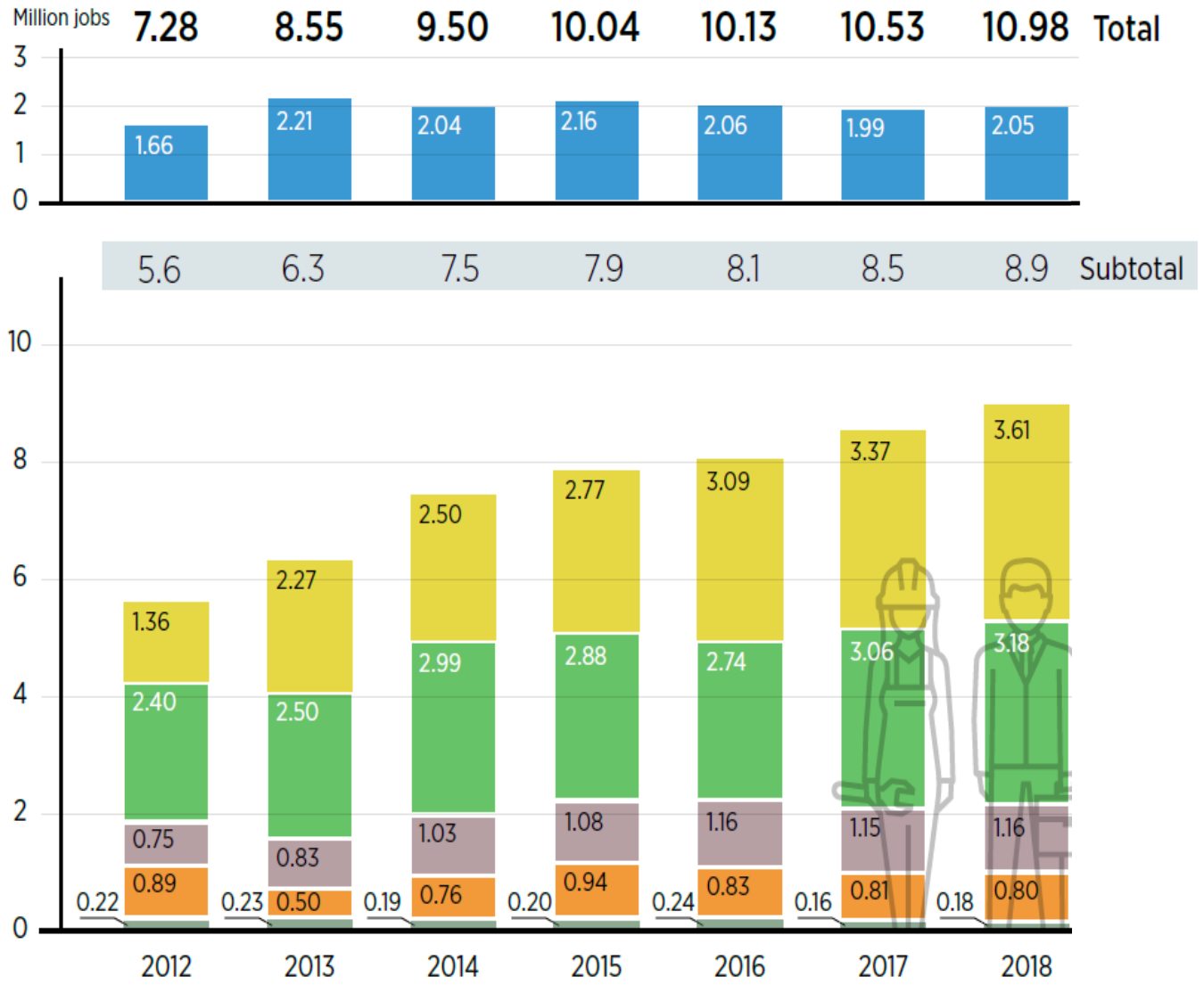




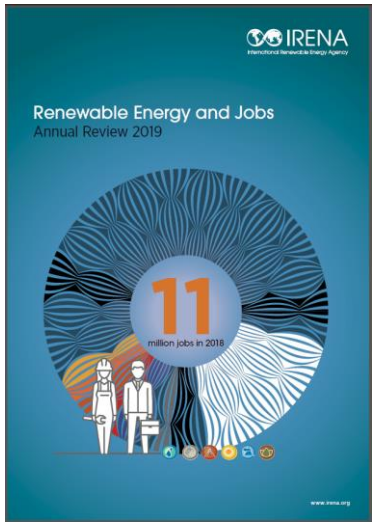
★ **Empowering Women / Community Benefits**



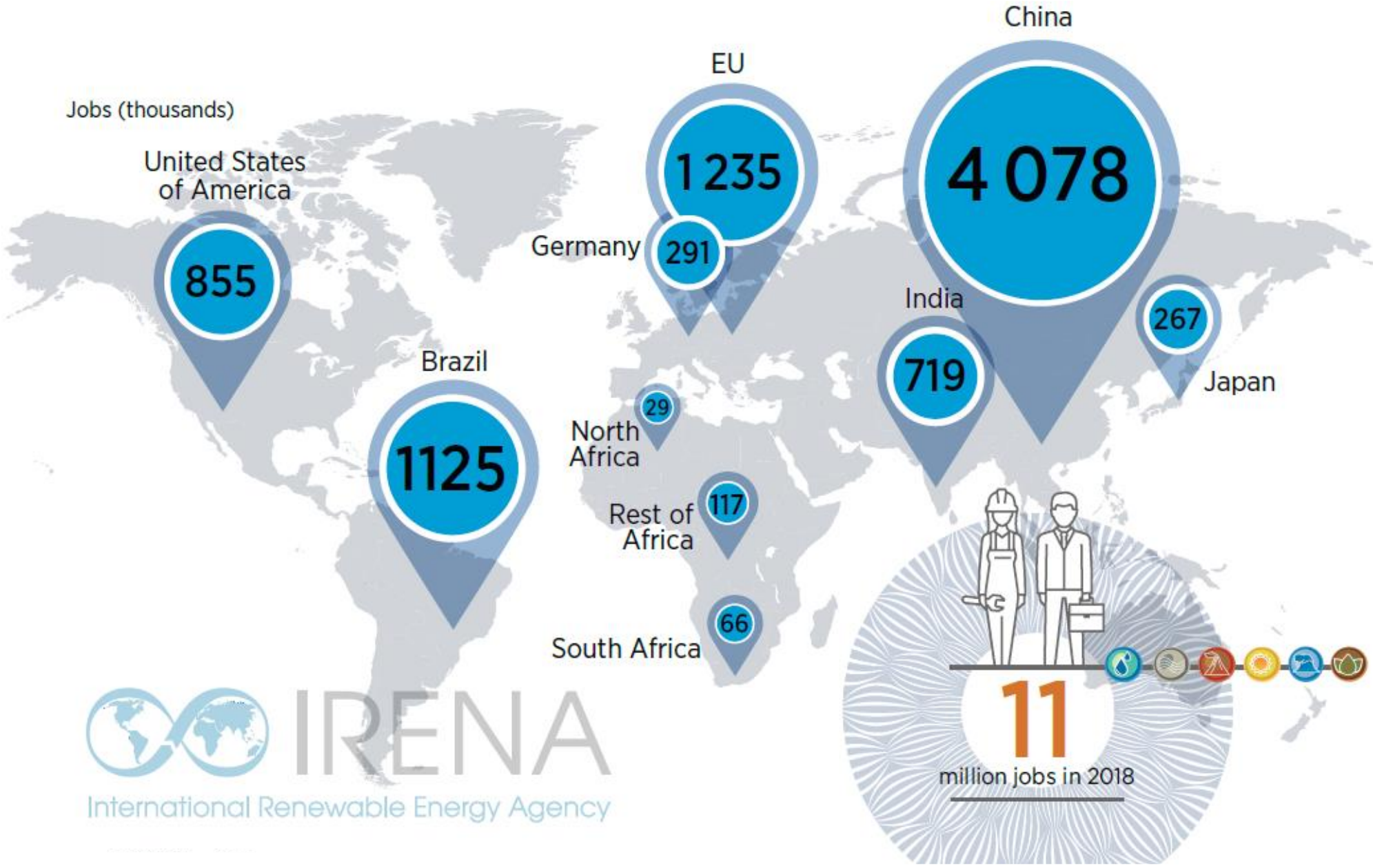
Jobs in Renewable Energy

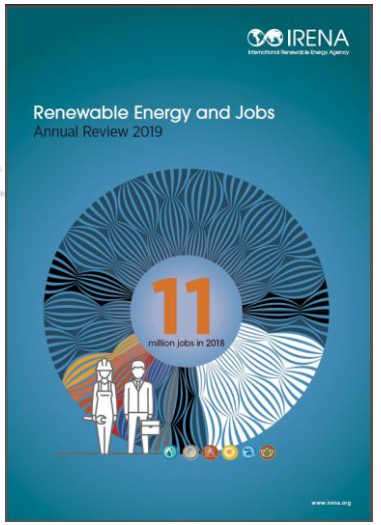


- Solar Photovoltaic
- Bioenergy[a]
- Wind Energy
- Hydropower
- Solar Heating / Cooling
- Others[b]

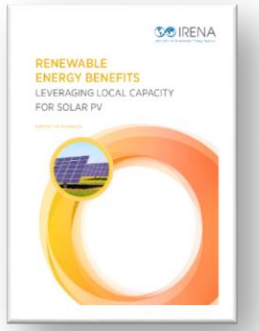


Jobs in Renewable Energy, by Region/Country





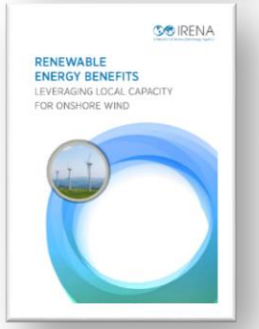
Solar PV and Wind Supply Chains: Labour Requirements



50 MW solar PV:
229 055 person-days

Project Planning **1%**

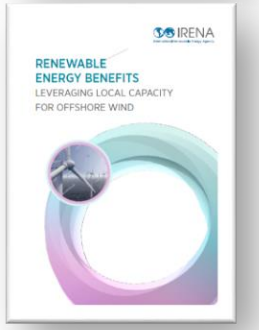
Procurement	Manufacturing	Transport	Installation	Grid Connection	Operation and Maintenance	Decommis-sioning
22%		2%	17%		56%	2%



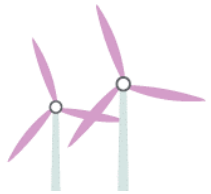
50 MW onshore wind:
144 420 person-days

Project Planning **2%**

Procurement	Manufacturing	Transport	Installation	Grid Connection	Operation and Maintenance	Decommis-sioning
17%		1%	30%		43%	7%



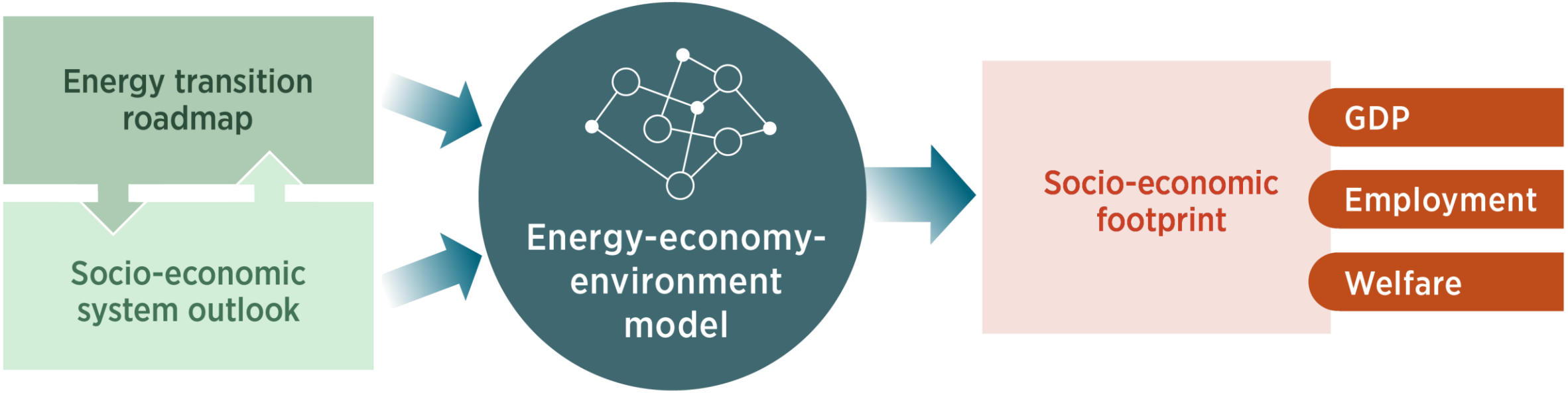
500 MW offshore wind:
2.1 million person-days



Project Planning **1%**

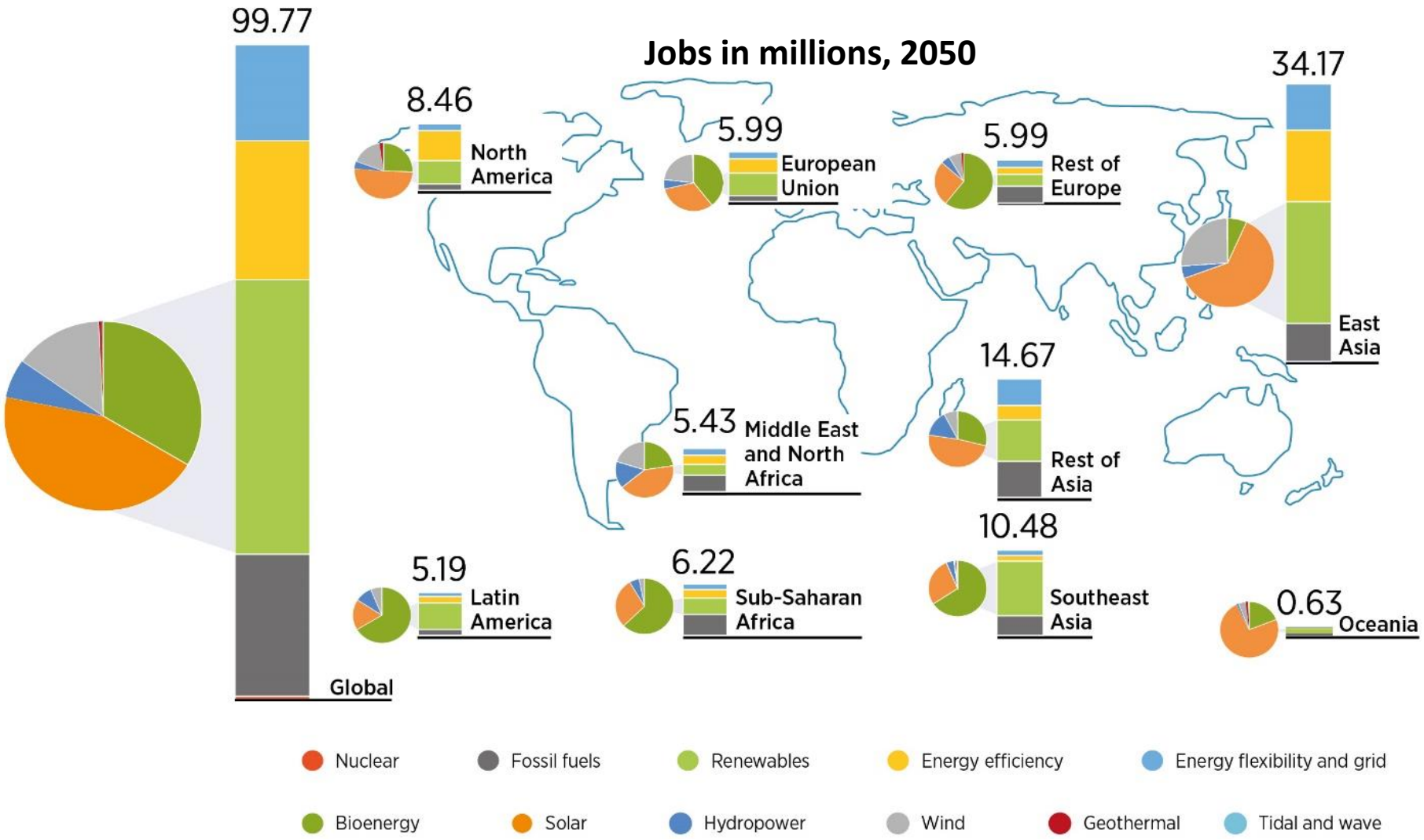
Procurement	Manufacturing	Transport	Installation	Grid Connection	Operation and Maintenance	Decommis-sioning
59%		1%	11%		24%	5%

The socio-economic footprint of the energy transformation



- **Both the energy and socio-economic systems will evolve during the transition**, with multiple feedback loops between them.
- **IRENA uses an integrated Energy-Economy- Environment model to evaluate the socio-economic footprint** that results from the interactions among different combinations of the energy transition roadmap and the socio-economic outlook.

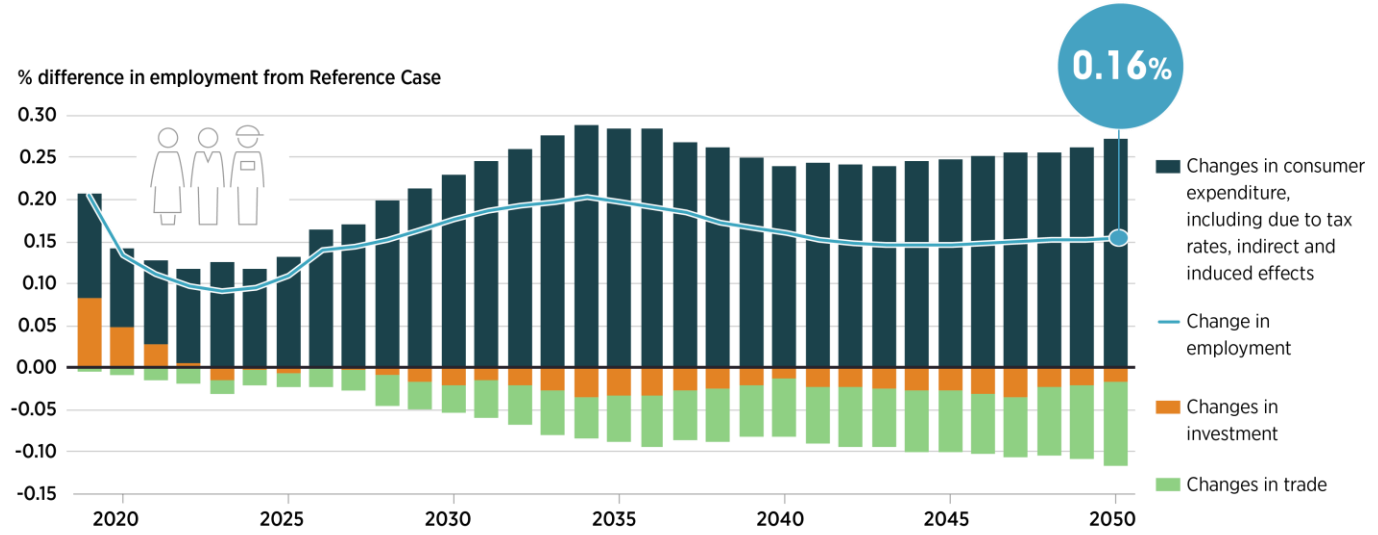
Energy transformation creating significant employment opportunities



- **Asia will have over half of the global jobs in renewables in 2050 – 26.8 Million**
- **In Southeast Asia, jobs in renewables will reach to 6.7 million from around 850 thousand jobs today**

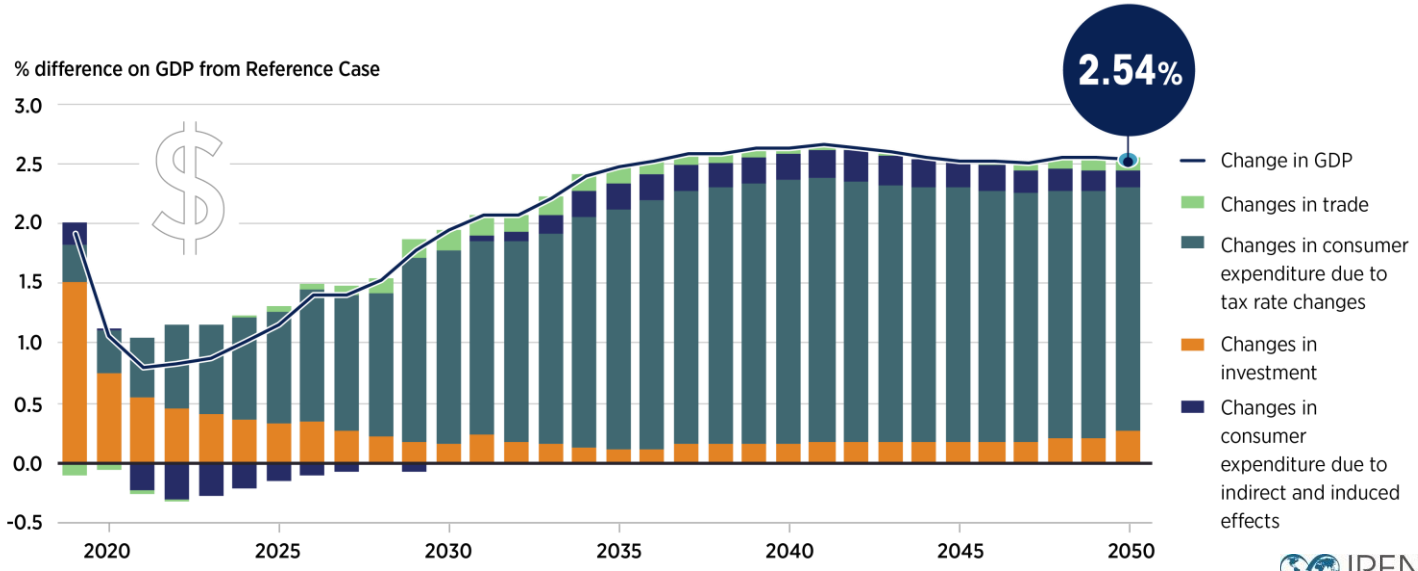
Citizen Benefits: Jobs and Economy in the Energy Transition

Global Economy-wide Employment
(measured in number of jobs)



Period to 2050:
Compared with a business-as-usual approach, the energy transformation yields GDP and job gains across the entire economy

Global Economic Growth
(measured in GDP)



The Welfare indicator: Measuring beyond GDP

Economic

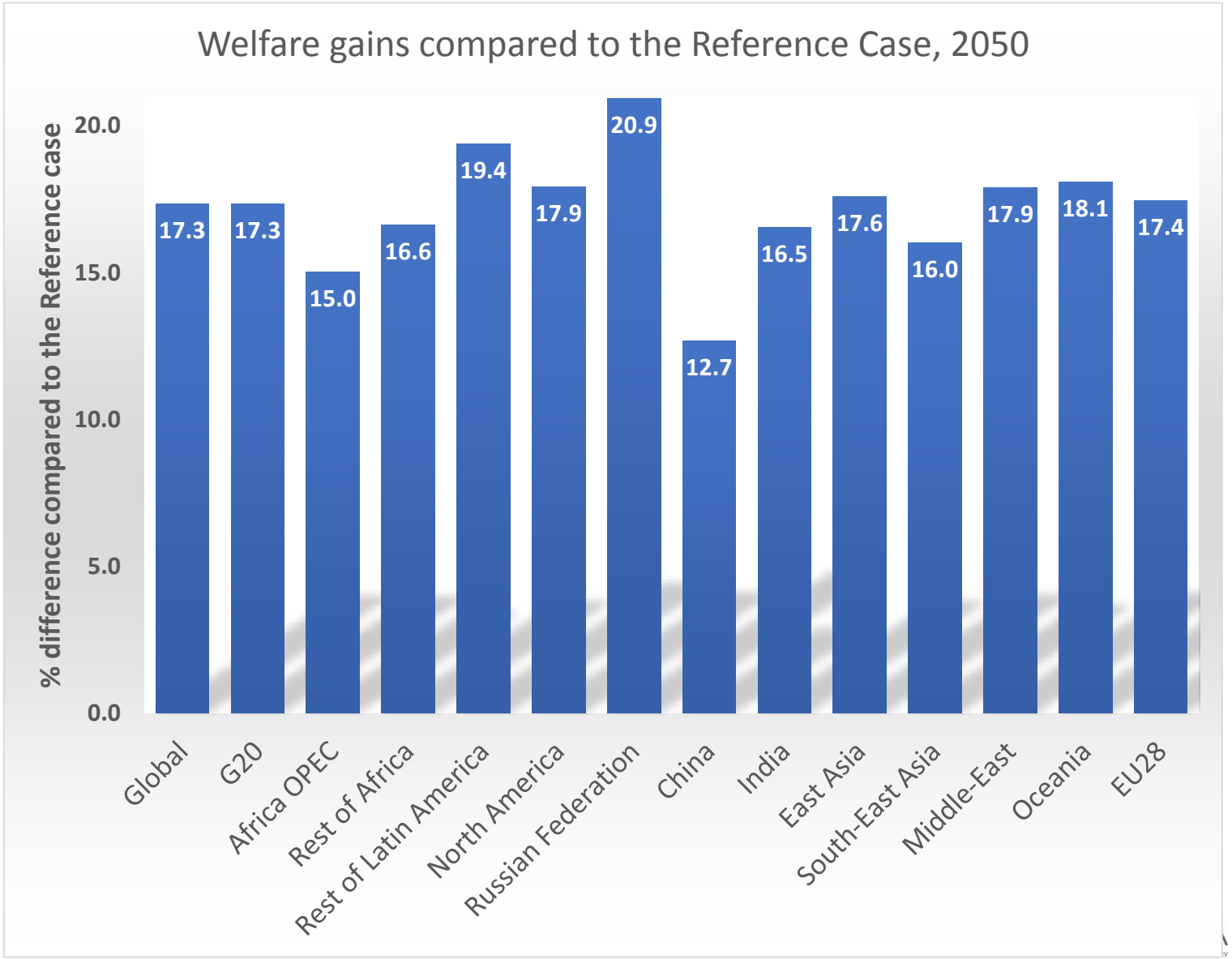
- Consumption and investment
- Employment

Social

- Health
- Education
- Energy Access

Environmental

- GHG emissions
- Material consumption



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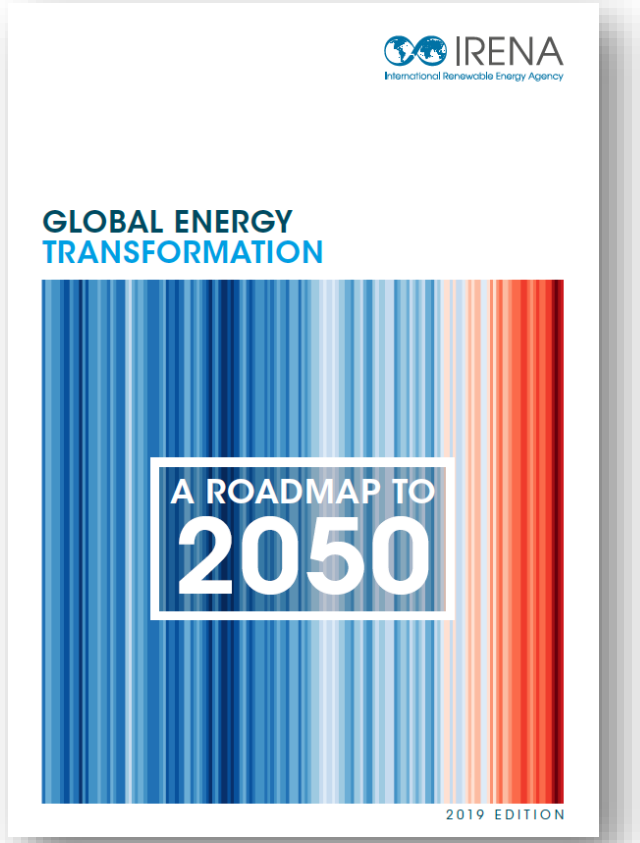

Thank you!

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