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Clean Energy Transition and Jobs in MENA Region

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Presentation Outline:

- Global estimates
- Clean Energy Employment Assessment Tool (CEEAT)
- Morocco Country Case Study
- Yemen Country Case Study
- From Potential Green Economy Jobs to Actual Employment

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Project overview:
Team, Collaboration and Funding Support

WORLD BANK GROUP
Energy & Extractives

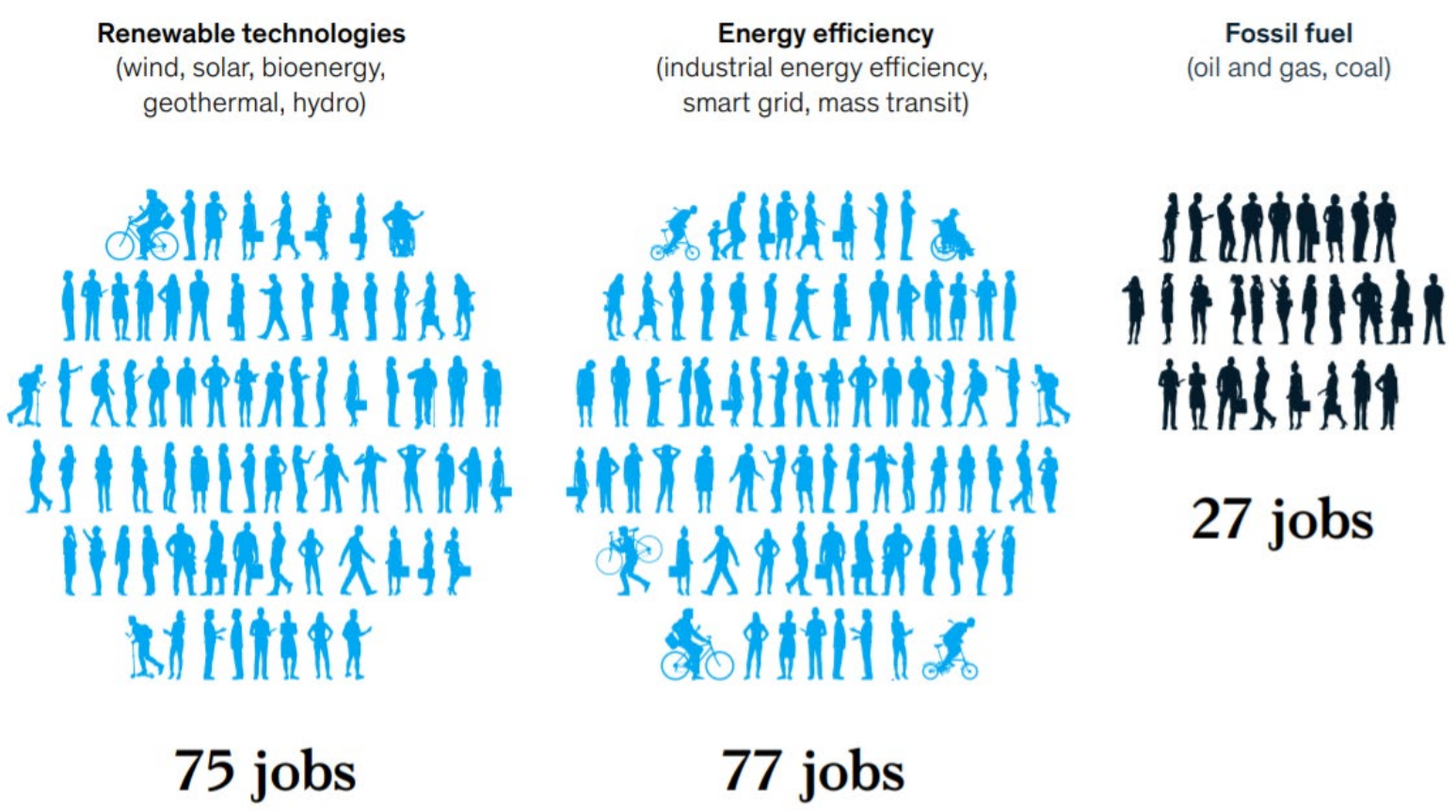
INFRASTRUCTURE
#BuildingBetterLives

ESMAP
Energy Sector Management Assistance Program

- Timeline: 2019-2021 and beyond
- Activity Led by: World Bank Global Energy Practice - MENA Region
- Financed by: Energy Sector Management Assistance Program (ESMAP)
- World Bank Task Team members from Energy, Jobs, Education and other GPs
- Supported by a global team of energy specialists, economists and modelers
- Collaboration with CIF, SD Morocco and external partners (ILO, UNEP, IEA, IISD, IRENA, GIZ, etc.)

Post-Covid19 stimulus and growth can both create more jobs and help the climate change mitigation

Jobs created, directly and indirectly,[1] per $10 million in spending



- Many global analyses point to significant job opportunities from clean energy transition
- As per global estimates by IRENA, 30 million renewable energy (RE) and 21.3 million energy efficiency (EE) jobs globally are possible by 2030.

Source: McKinsey (2020)

Clean Energy Employment Assessment Tool (CEEAT)

Outputs	Inputs/Data	Methodology	Geographic scope	Platform
Direct, indirect, and induced (economy-wide) employment for each RE and EE technology	• RE and EE deployment (capacities) • Financing sources • I-O tables to determine employment multipliers • Local manufacturing • Innovation rate • Energy sector parameters	Net I-O (using gross positive & negative impacts	Morocco, Egypt; to be extended to MENA	Simulation, Spreadsheet (MS Excel)

The CEEAT models the net effects of energy expenditures as a combination of four gross positive and negative impacts

Employment Impact Channel	Drivers	Job Impact
Project Investment Impact: Investments to support clean energy expansion	Stimulates employment: Moving expenditures from capital-intensive to labor-intensive sectors; Building up local supply chain	+
Investment Shift Impact: Redirecting funds from other projects/spending to support clean energy investments	Displaces jobs in other sectors (e.g., fossil fuels)	-
Substitution Impact: Energy savings from efficiency/renewables respent locally	Stimulates employment as consumers (residential, commercial, industrial) spend savings in economy	+
Revenue Impact: Lost energy company revenues	Displaces jobs in the utility sector	-

Morocco Country Case Study

Cumulative Net Jobs in 30 years (Base Scenario)

	Utility Scale Solar	CSP	Industry Distributed Solar	Residential Rooftop Solar	Utility Scale Wind	Energy Efficiency
Investment Impact	27,491	213,144	10,184	24,242	85,811	129,534
Investment Shift Impact	-60,946	-130,598	-26,166	-40,064	-215,758	-41,692
Substitution Impact	97,543	194,703	43,035	49,249	358,783	115,494
Revenue Impact	-6,176	-13,235	-2,652	-4,060	-21,865	-24,087
Sub-Total	**57,912**	**264,014**	**24,401**	**29,368**	**206,972**	**179,248**
Total	**761,914**					

The job impact can be up to **1 million with certain policy parameters:** expanding the scale of investments, reducing cost of investment, increasing rates of innovation, building up local production capacity, and utilizing domestic rather than international financing mechanisms with lower interest rates.

Looking forward: Expansion of CEEAT

- CEEAT can be recalibrated to a broader set of **countries and regions**.
- Using the same analytical framework, the Tool can be expanded to estimate more complex clean energy technology pathways, such as **electric-mobility, sustainable/EE cooling/heating, battery storage, green hydrogen.**
- The final version of the Tool will be made available to World Bank's member countries and the broader clean energy community in 2021.
- The results of CEEAT will be used to inform clean energy policy dialogues in these and other countries on the potential of employment opportunities

Yemen Country Case Study

THE WORLD BANK

Solar PV Industry Growth and Employment Impacts in Yemen

DRAFT REPORT

Prepared for: Disruptive energy transition and the opportunities for job creation in the Middle East and North Africa (P170546)

Submitted to: The World Bank (Energy & Extractives Global Practice, MNA Region)

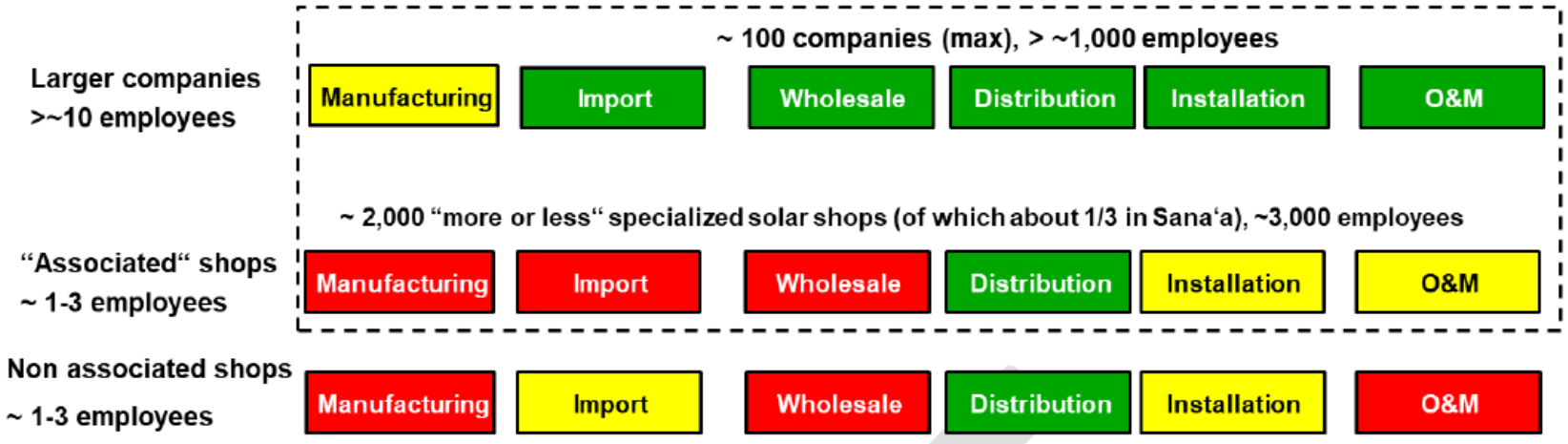
Supported by: Energy Sector Management Assistance Program (ESMAP), Word Bank

Prepared by: eclareon GmbH

ESMAP
Energy Sector Management Assistance Program

- The assessment for Yemen **does not use CEEAT** but a simpler tool focusing on the job potential of the growing private distributed solar PV industry value chain.
- This simpler approach focuses more on collecting **primary data through in-depth interviews and online surveys** with private energy micro, small, and medium enterprises in the emerging distributed PV industry and supply/value chain.
- The tool is also Excel based and consists of the **PV Market-Sizing Model** and the **Socio-Economic Impact Model (SEIM)**.

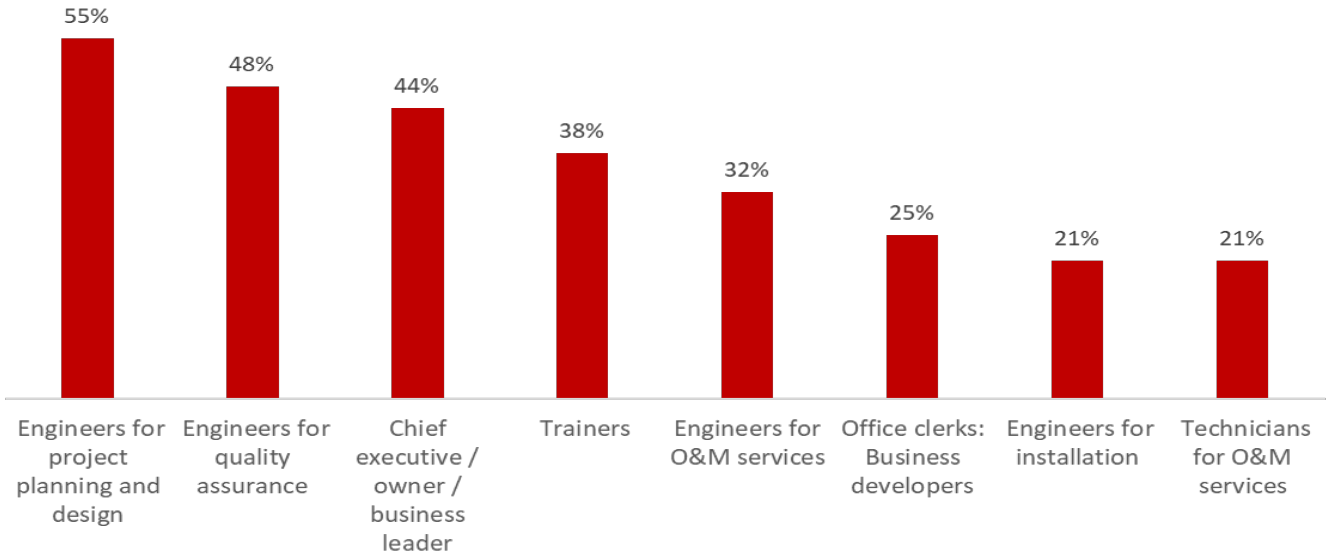
Actors across Yemen's solar PV value chain



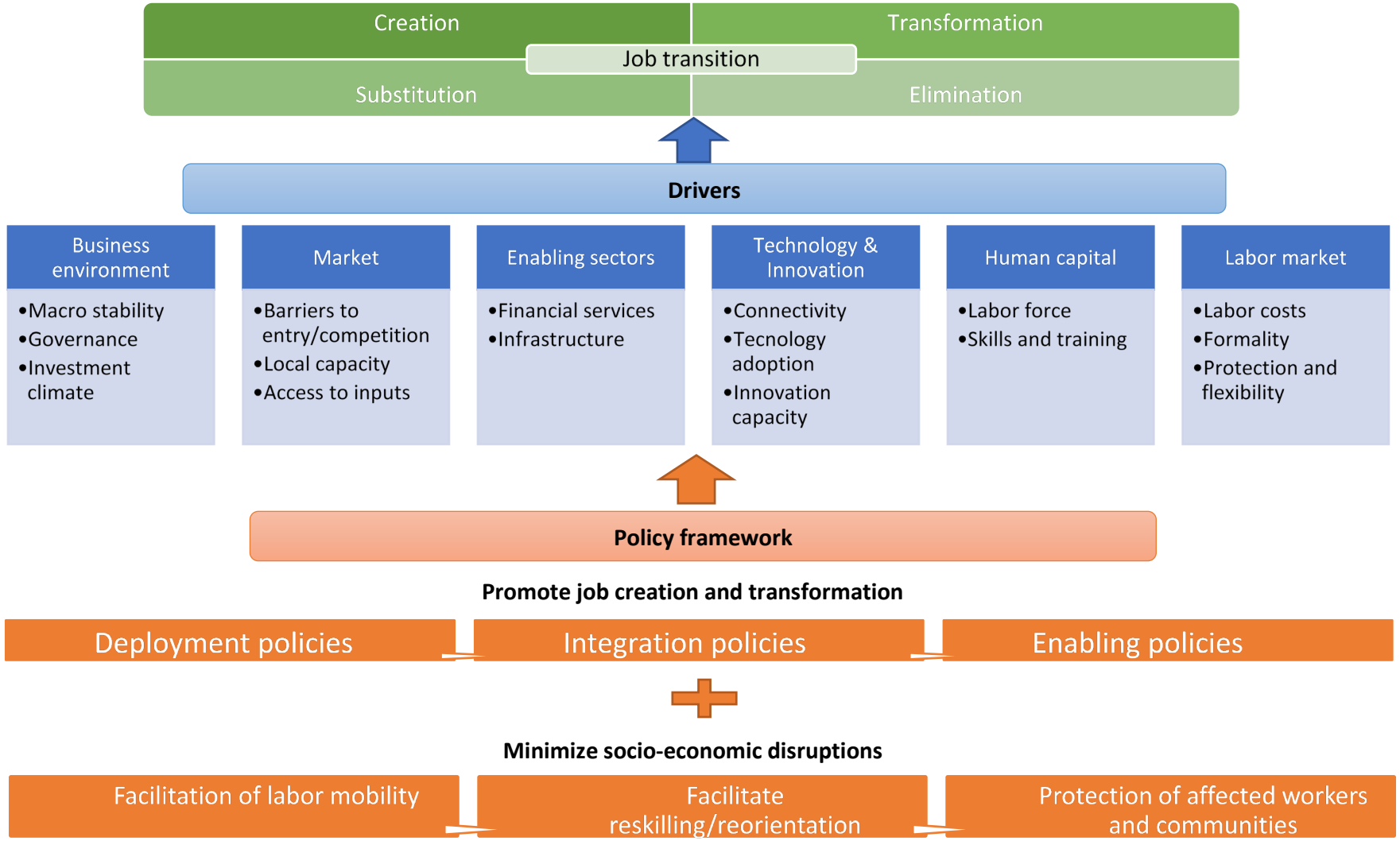
Yemen Country Case Study: Results

- ❖ The models estimate that around 6,200 direct, 4,700 indirect and 11,000 induced jobs are to be created by 2030 from solar PV in the base case scenario.
- ➔ Three times the current jobs in the “electricity, gas and water supply” industry
- ❖ O&M accounts for about 42% of direct labor, other downstream activities for about 47% and importation of PV equipment for about 11%.
- ❖ An additional 10,000 jobs could be created by productive use jobs.
- ❖ In the worst- and best-case scenarios, total jobs without productive use could range from 14,000 to 59,000.

Job profiles and skills in Yemen solar PV industry: "Needed and scarce", top answers from online survey



Next steps: Sectoral Deep Dive on Opportunities and Challenges for Job Creation



What are the Changes in Skills Requirements for Green Economy Jobs?

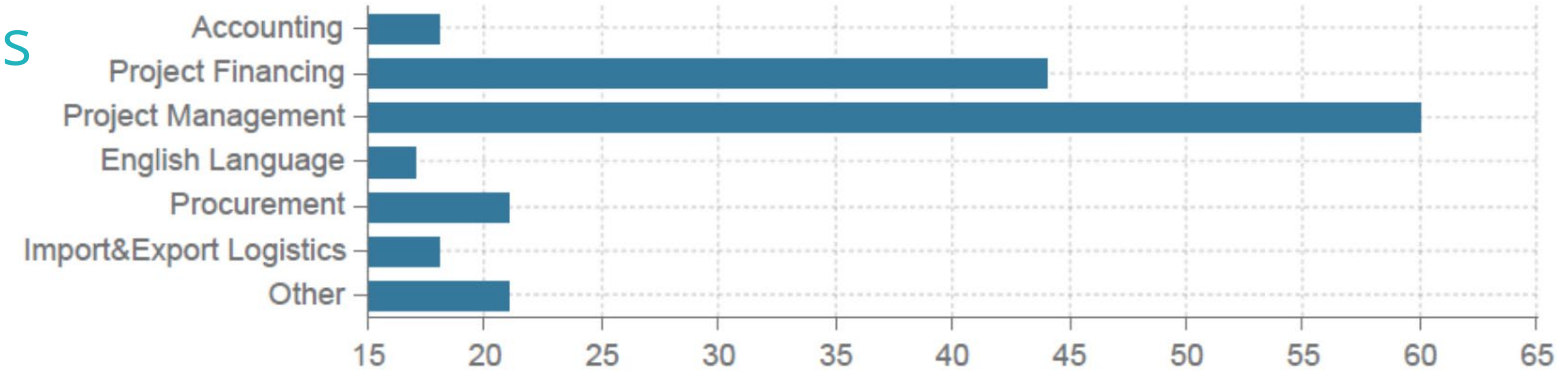
Low Skilled Jobs	- **Generic adaptation(s) to existing jobs/work processes** (e.g., waste collectors)	• **On-the-job training** • **Short re-/ upskilling training**
Medium skilled Jobs	- **Some new occupations** (e.g., wind turbine operator, solar installer) - **Substantial changes to some existing job profiles (technical skills)** (e.g., A/C technicians)	• **Short to medium training programs** • **TVET programs**
High Skilled Jobs	- **Most new green economy occupations** - **Substantial changes to some existing job profiles (technical skills, knowledge)** (e.g., solar engineers, energy efficient building architects)	• **Specialized university degree programs** • **Longer upskilling training programs**

Source: Adapted from ILO, 2018, Skills for Green Jobs

In addition to Technical Skills/Knowledge, Soft & Transferable Skills are Critical

- Teamwork, leadership skills
- Communications/negotiations skills
- Customer handling, sales & marketing
- Project management
- Entrepreneurship
- Digital skills (MS office etc.)
- Languages
- Occupational Health & Safety

What are the skills and competencies that tend to be missing in the job applicant pool for management and support staff positions?



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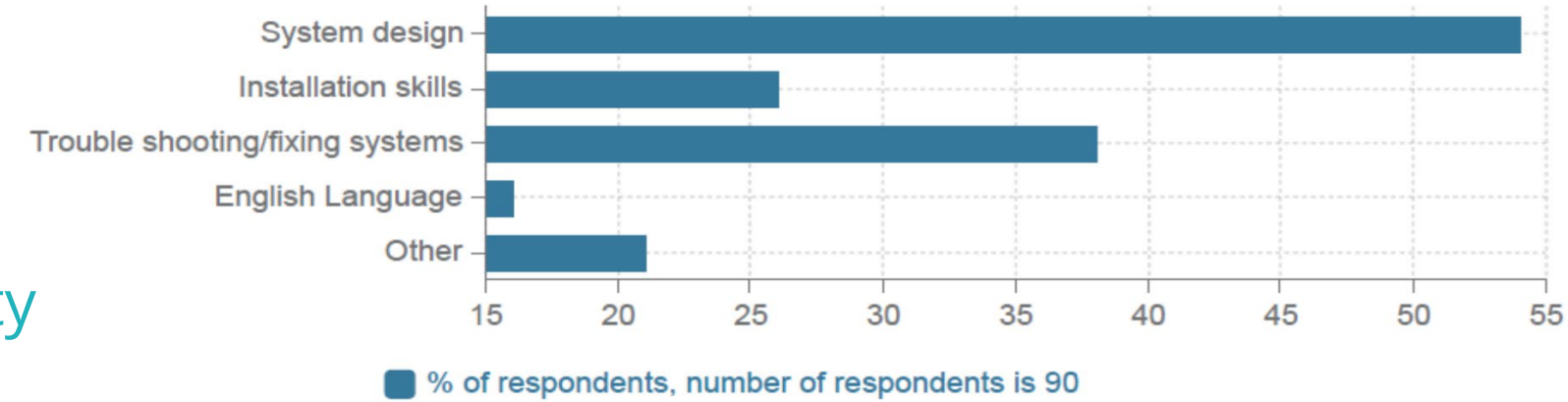


2019 Survey of the MENA Clean Energy Business Council

How to Skill, Re-Skill & Upskill to Turn Potential Green Economy Jobs into Actual Employment? Some Country Examples

- **Identify/track skills needs:** e.g. France: National Observatory for Jobs & Occupations of the Green Economy
- **Set up sector skills councils & provide incentives for on-the-job/firm level training:** e.g. India: National Skills Council for Green Jobs
- **Develop national/local green skills plans/policies:** e.g. Philippines-Green Jobs Act & National Green Jobs HR Development Plan; South Korea, UAE, local government green growth plans
- **Develop/update national occupation/qualifications frameworks to define industry credentials:** e.g. China, India, Estonia, Ghana

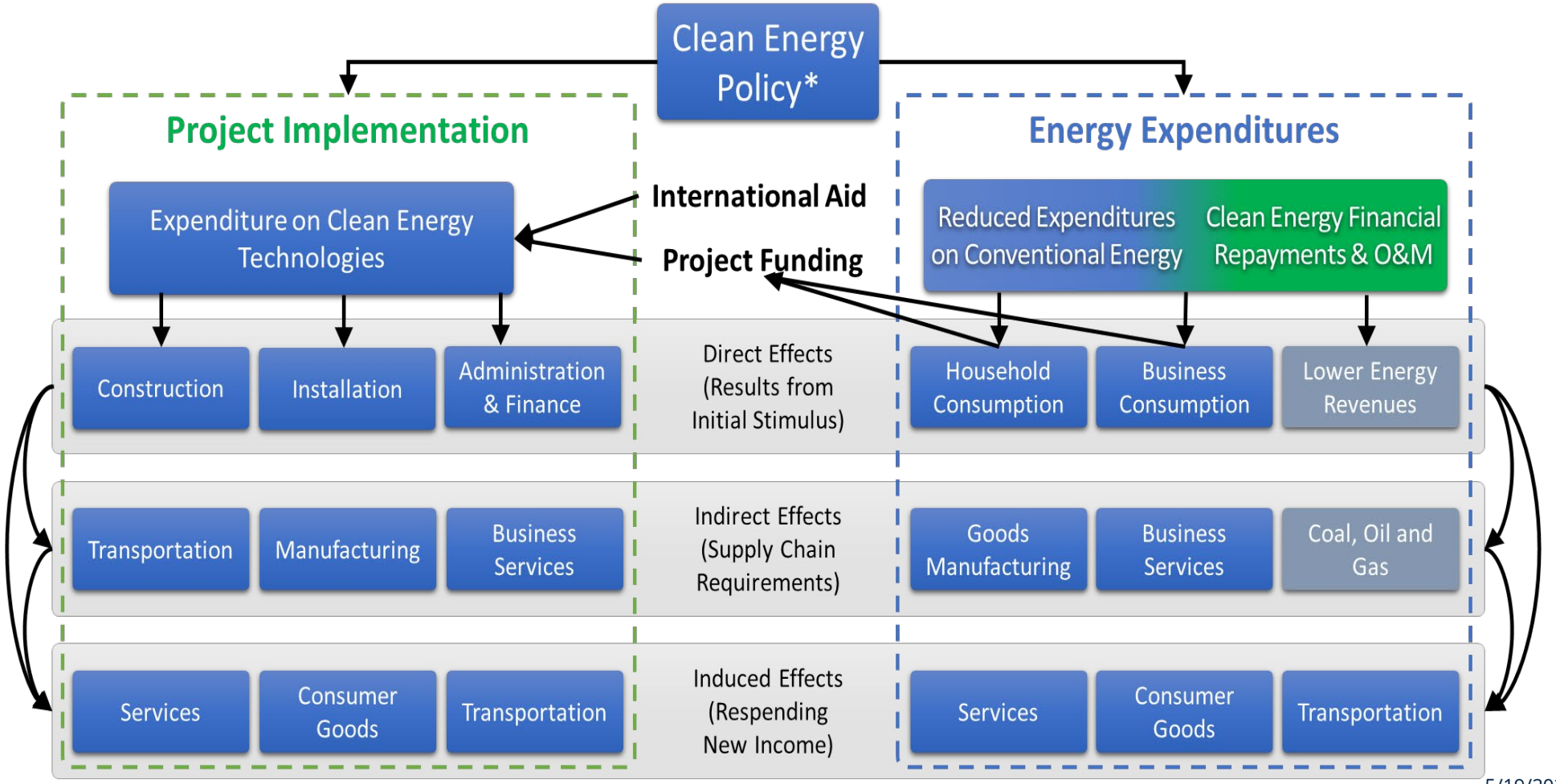
- **Co-design training programs/curricula**, provide feedback for existing curricula
- **Offer scholarships** to incentivize students to pursue specialized STEM/programs
- **Provide structured internships** to boost students' job readiness
- **Sponsor clean energy professional certificate programs** (similar to e.g. what Microsoft, Huawei are doing for ICT/digital skills)
- **Build capabilities for green jobs career advising** & placement
- **Create education programs for school children to encourage STEM** & introduce energy and energy careers

Thank You!

Our Activity on Clean Energy and Jobs: To Assess the Potential Employment Opportunities Associated with Clean Energy Transition

- **Phase 1: Assessment of the job impact of disruptive clean energy transition (FY19-21)**
  - ***Clean Energy Employment Assessment Tool (CEEAT)*** which simulates the net direct, indirect, and induced job impact for six different RE and EE technology pathways: utility-scale PV, industrial PV, rooftop solar, CSP, utility-scale wind, and commercial building EE
  - Application of the employment assessment tool initially to *three countries:* ***Morocco, Egypt, and Yemen*** *(separate analysis, focused on Solar PV)*
- **Phase 2: Deep dive into the opportunities and challenges of job creation along the clean energy value chain (FY21-22)**
  - Build upon Phase 1 analytics and delve into the **skills development of the green economy**
  - Assess the need for **Just Transition** and help workers in the conventional energy sectors obtain new skills, move jobs/sectors, or receive benefits to cope with the negative impact of jobs loss or substitution
  - **Country-level consultations and recommendations** to help client countries establish the building blocks to deliver those new green jobs while informing our energy, jobs, social protection and labor markets, and education lending interventions.
  - Expand the analysis into **e-mobility and more countries**.

CEEAT: Overall Analytical Framework



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*** With non-energy or multiple benefits creating a parallel set of effects beyond those highlighted here.**