YOU CAN'T HAVE YOUR CAKE & EAT IT TOO: SOME KEY TRADEOFFS AND PRIORITY ISSUES FOR OPTIMIZING SOCIO-ECONOMIC BENEFITS OF RE/EE

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On behalf of:
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
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On behalf of
Federal Ministry for Economic Cooperation and Development

IRENA
International Renewable Energy Agency

RE/EE: a new jack of all trades for policy makers?

- ✓ **Increase security, affordability and sustainability of supply (+ demand):**
- Create a hedge against energy prices hikes and supply crunches;
- Help reduce CO2 emissions and other environmental impacts;
- Help drive local socio-economic development and innovation;
- Cluster new value chains and business opportunities around RE/EE;
- Create new sources of income and employment for local populations;
- Enhance social access to and control of modern energy services etc.
- ➢ Wishful thinking isn't good policy—trying to square the circle either!

With very different contexts for newcomers!

- ✓ **Increasingly mature markets mean a more competitive environment:**
- competitive prices / grid parity for many RE technologies;
- competitive world markets / globalized supply chains for many inputs;
- dynamic demand growth / supply crunches in the global south;
- often weak administrative / industrial / technological capacities;
- often still vertically integrated / monopolized electricity systems;
- serious supply bottlenecks for many inputs (capital, technology, HR…);
- soft currencies, high perceived risks among investors…
- ➢ <u>These very different framework conditions are often not considered!</u>

First of all: clarify your priorities!

- **Energy security**: making sure energy is available when/wherever needed
  - ➢ Avoiding supply crunches/over-dependence on a single source or supplier
- **Environmental sustainability** : respecting absorptive capacities of ecosystems
  - ➢ Reducing CO2 emissions/other damaging impacts of energy installations
- **Economic sustainability**: being affordable and competitive viz. other options
  - ➢ Improving public or foreign accounts/fostering socio-economic opportunities
- **Socio-political sustainability**: being beneficial to and supported by citizens
  - ➢ Broadening access to modern energy, helping empower citizens

Then: make sure what they mean exactly!

- ✓ **If the are socio-economic in nature, what is exactly meant by it:**
- Increasing GDP (p.c.)? Productivity? Employment?
- Only more jobs? Or better jobs? If yes, which ones?
- Only more, or cheaper, or more broadly accessible energy?
- Regarding the compression of energy costs: for the government, for utilities, for consumers, or for taxpayers? they are not one and the same!
- More socio-economic opportunities for the resident population in general or for underprivileged strata in particular? If yes, which ones?
- ➢ Answers determine the choice of the technologies, of the sites, and of the tools!

Key priority issue / policy trade-off 1

- ✓ **Decide if the focus is on minimizing short term project costs or on optimizing longer term socio-economic outcomes.**
- Low-cost approaches help slash deployment costs / save public resources, but often offer no add-on socio-economic benefits / no real strategic perspectives
- Many benefits are blended out: reduced expenses / increased income due to health / productivity gains, avoided envt. degradation; enhanced / more fairly distributed national income due to wider participation in / reduced spending on energy supply
- Building up RE/EE technology and process knowhow requires significant and sustained investment in machinery, education, R&D… which can only be justified if they have positive net effects and lead to intl. competitiveness

Key priority issue / policy trade-off 2

- ✓ **Decide if the focus is on fostering technology knowhow, industrial development or employment creation.**
- For the former two: 1) FDI will most likely play a key role (requiring sound frame-work conditions & deployment targets); 2) strengthen local supplier capacities & firm-level cooperation; 3) research & technology policy will be of key importance
- For the latter: 1) focus on services (upstream & downstream), lower entry barriers for SMEs & support entrepreneurship/start-ups; 2) promote distributed generation alongside energy efficiency; 3) training & labor policy have to be closely coordinated
- In both cases: upgrading of local suppliers and HR via applied education and training is crucial, as is enforcement of quality and performance standards

Key priority issue / policy trade-off 3

- ✓ **Decide to which extent you envisage to open the system / grid and allow for a participation of small, private producers / investors**
- Main advantages of a stronger reliance on small RE plants: facilitating the quick mobilization of private investment; the involvement of local groups in energy supply; the cost-efficient coverage of remote/marginal populations; the cost-efficient replacement of expensive/polluting sources and plants
- Main disadvantages: requiring early-on attention for grid modernization; a concerted effort to ensure system integration and system stability; absolute priority for the issue of quality and the availability of mechanisms to ensure it
- In both cases: the political stance and practical involvement of the utilities, the grid operators and the regulators (where existing) becomes paramount

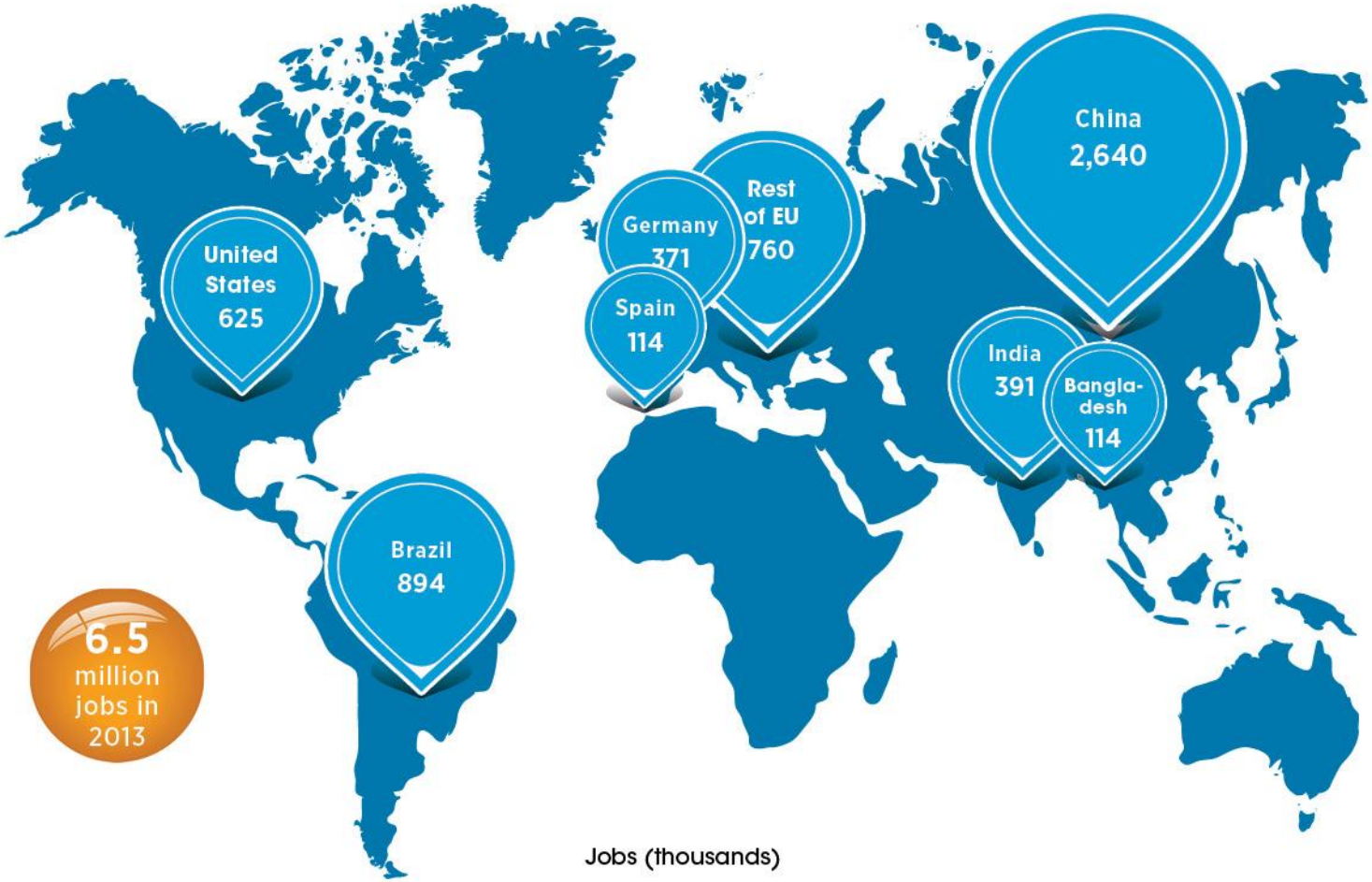
Key priority issue / policy trade-off 4

- ✓ **Decide if the focus is on reducing consumption / enhancing the productivity of the system, or on deploying new technologies / transforming the system**
- EE measures: often easier and quicker to implement, less technology- and capital-intensive; but politically challenging and conceptually complex
- Actions need to be tailored to the specificities of each sector (building, industry, agriculture, transport…) and need to be followed up by a closely coordinated set of policy measures (legal-regulatory obligations/mandates, technical specifications, financial/technical support, awareness raising, capacity building…)
- Effective EE are on average more labor-intensive than RE, but depend even more critically on the human factor (both supply and demand side)

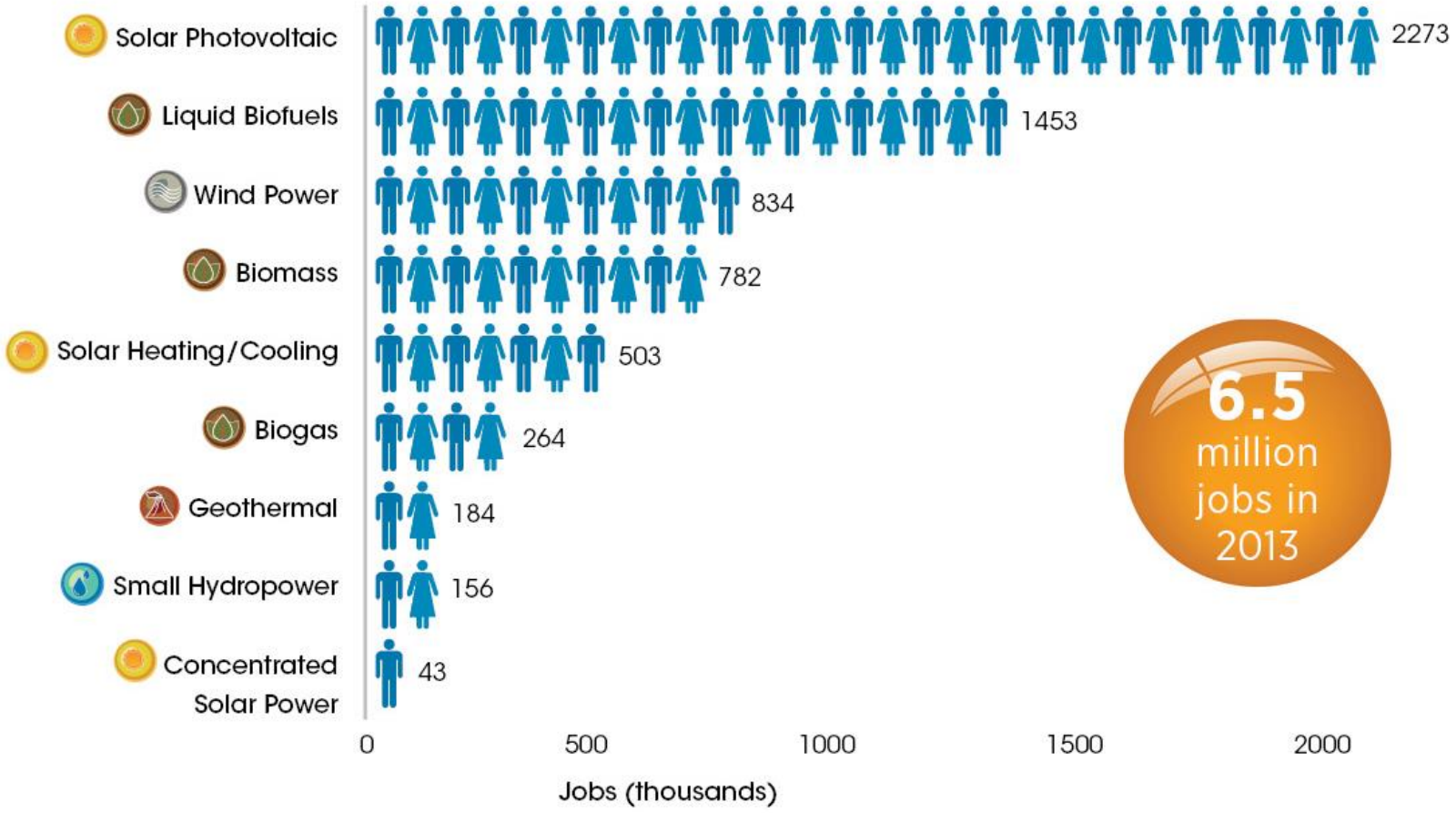
Conclusion & Outlook

- Need to deepen our understanding of the real perspectives and potentials of the MENA in terms of local employment and value creation: to be done via in-depth assessments of selected countries, potentially alongside a regional screening
- Need to strengthen our understanding of actual trends and change processes in the MENA in this regard, to be done via the introduction and testing of new data collection tools in a few selected countries, together with local partner institutions
- Need to assess recent or current good practices and success models with regard to RE/EE based or driven employment and value creation in developing and emerging country contexts worldwide, also leading to the development of a new set of policy, advisory and capacity building tools made available on-line

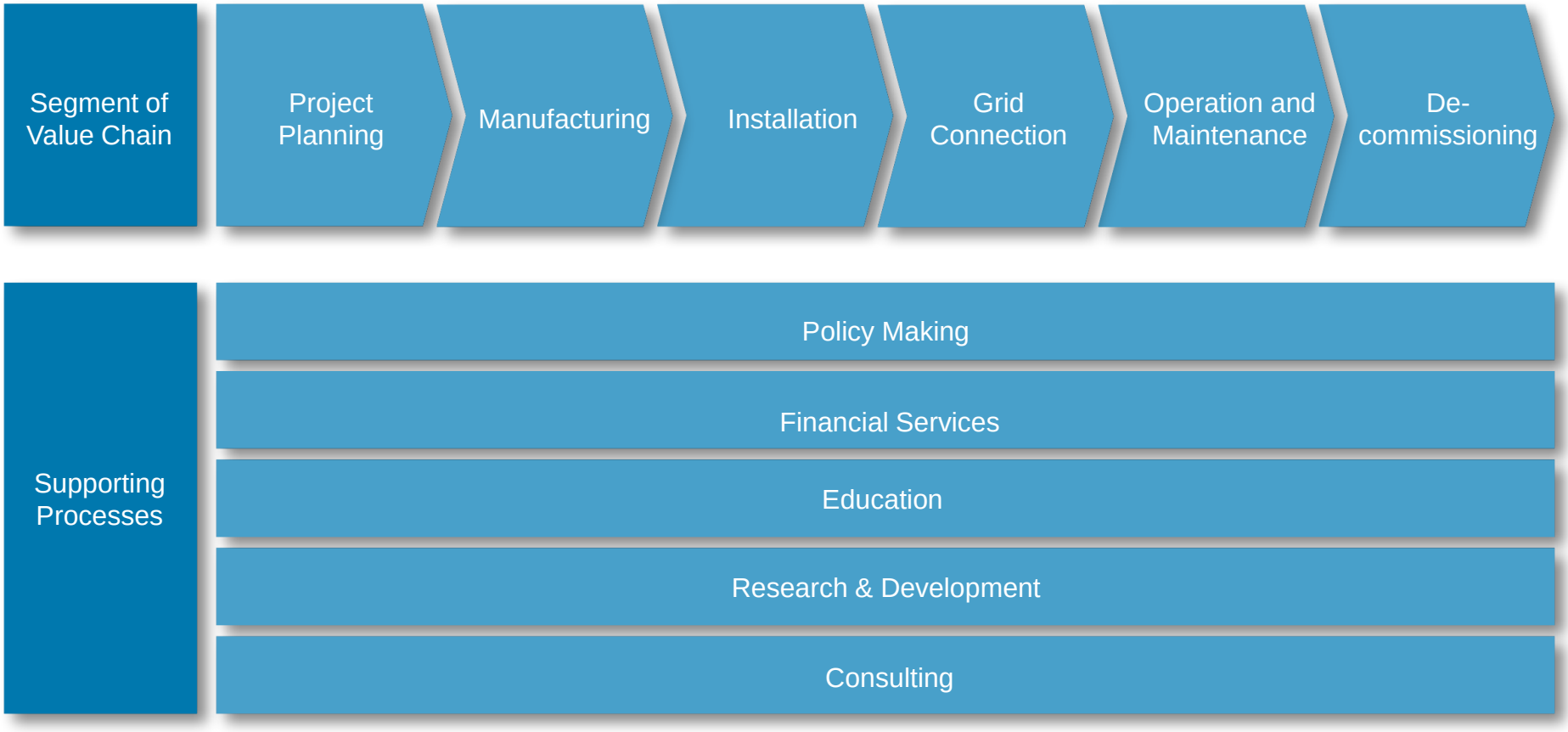
Renewable Energy Jobs - *Employment in Selected Countries*



Renewable Energy Jobs - *Employment by Technology*



Typical segments of the RE value chain



Source: Adapted from MWGSW, 2011.

The right policy mix can maximise value creation