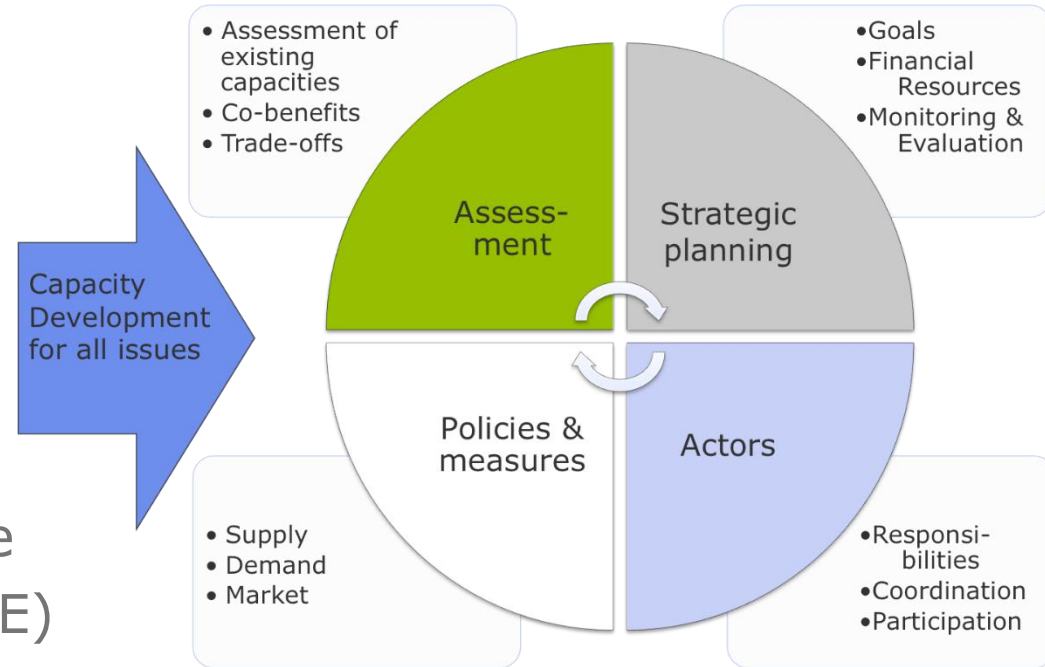


# Local value creation and employment promotion through Renewable Energy and Energy Efficiency in the MENA Region (RE-ACTIVATE)

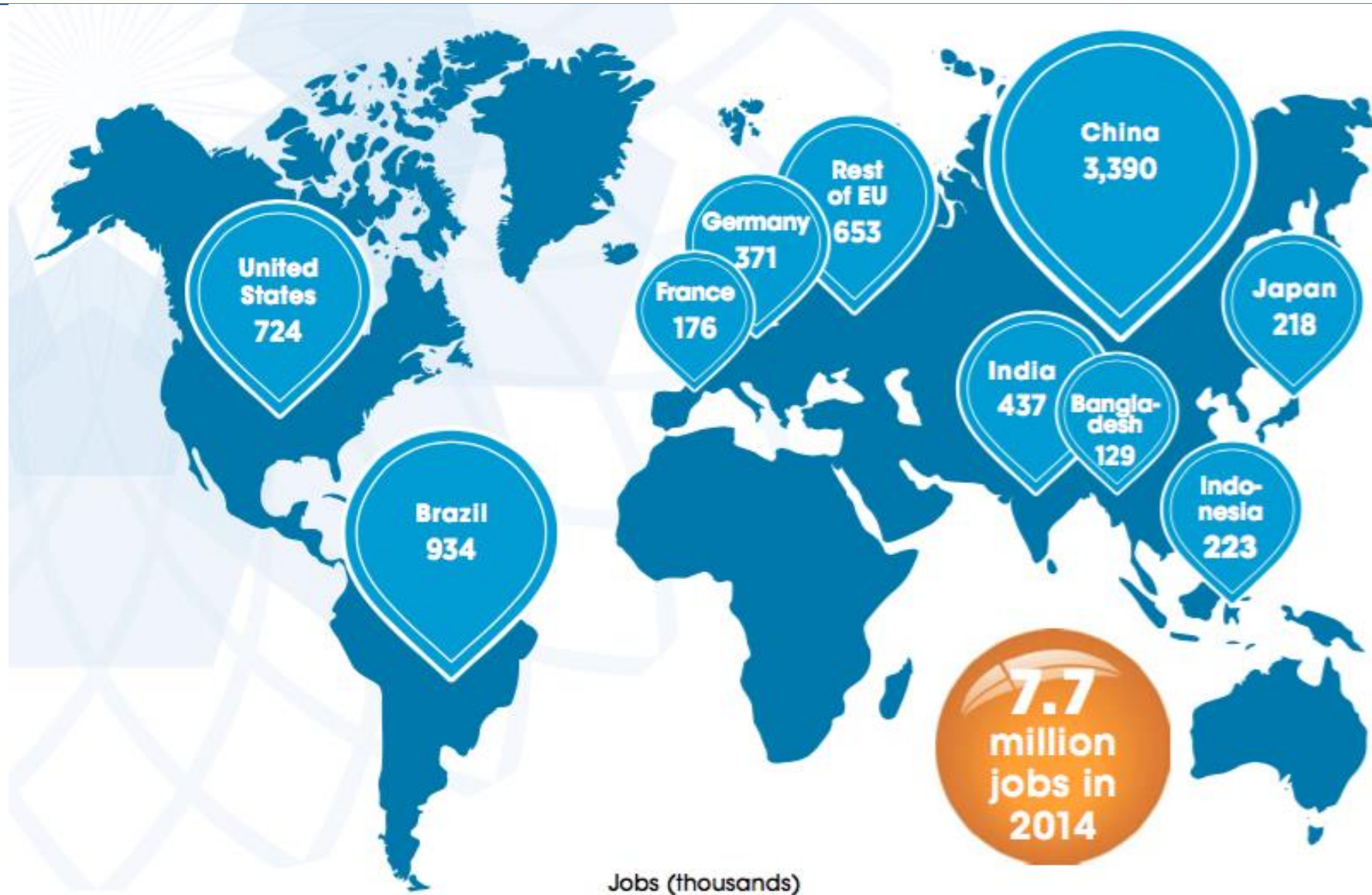


Klaus Jacob

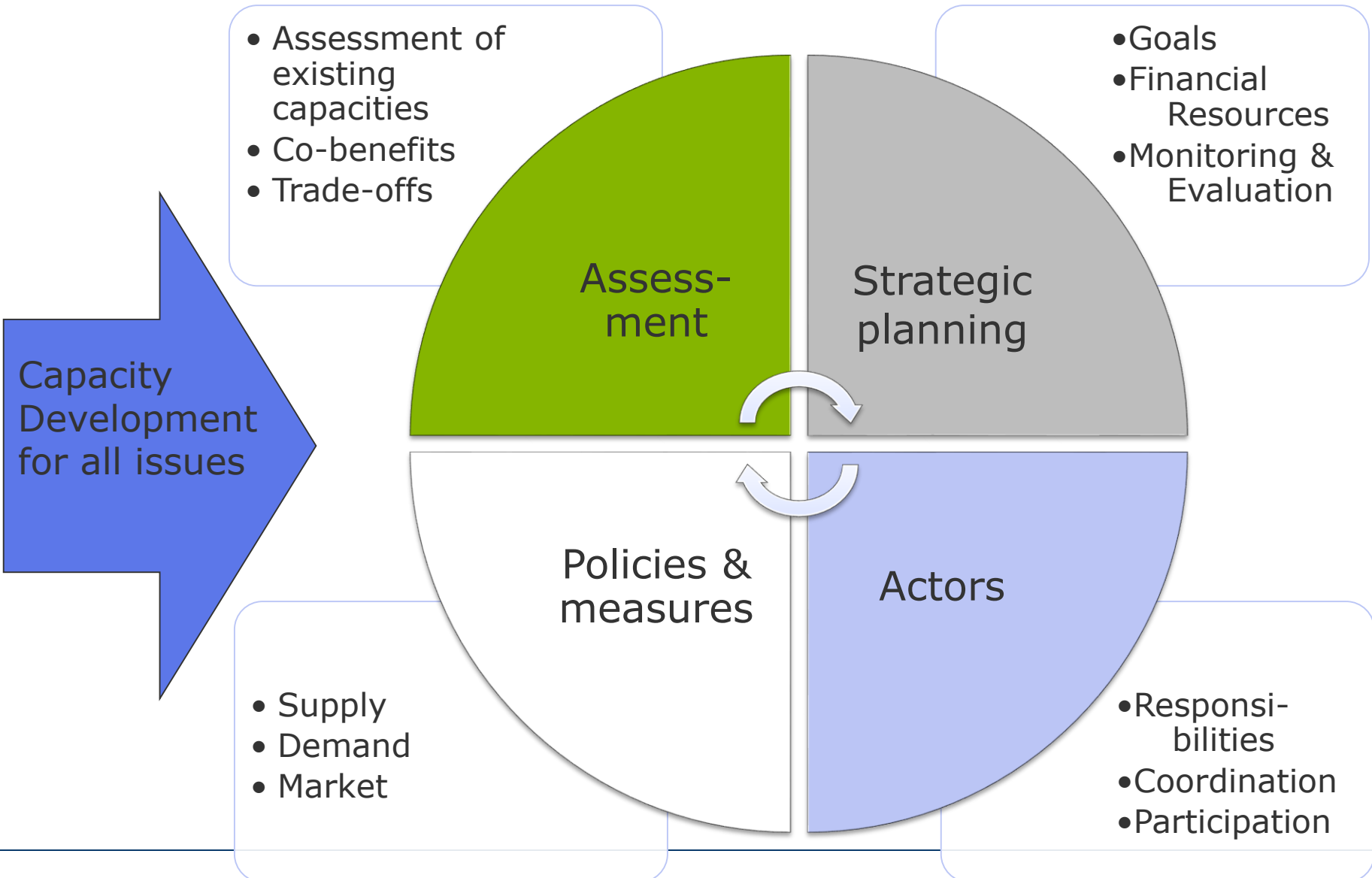
Environmental Policy Research Centre

Beirut Energy Forum, September 9-11, 2015

# RE employment worldwide: majority of jobs in the developing world



- Some countries are more successful in creating RE/EE employment – Why?
  - Markets and employment depend on a range of conditions to develop (and create domestic value added)
  - A broad coalition of actors are involved in these processes
  - There is no “silver bullet” – but certain recurring **issues** that need to be considered
  - We find different **options** on how these issues are being tackled: There is no one fits all solution. They need to fit with the overall context.
  - **Key elements are: Strategy, Commitment, Implementation and Capacities**



- Examples of options from good practice countries:
  - (1) How to **assess employment potentials**?
  - (2) How to foster **demand** for RE investments and local value creation & employment?
  - (3) How to **organize training**

## (1) Assessment of employment potentials

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- A strategy and policy instruments for employment in RE/ EE should be based on a realistic assessment of a country's current position
- Methodologies/ models can help building domestic assessment capacities
- Good practice options:
  - China and Mexico: using methodology developed by International Labour Organization to estimate future and current employment in RE/EE with input-output-tables
  - South Africa: use of system dynamics model to estimate economic, employment and environmental impacts

## Employment factors

<b>Option</b>	<b>Manufacturing (person-years/MW)</b>	<b>Installation (person-years/MW)</b>	<b>O&amp;M (jobs/MW)</b>
<b>Wind</b>			
Minimum	2.7	0.5	0.1
Median	<b>4.0</b>	<b>2</b>	<b>0.3</b>
Maximum	12.5	6.7	0.7
<i>Standard deviation</i>	3.3	2.4	0.2
<i>Sample size<sup>a</sup></i>	8	10	16
<b>PV</b>			
Minimum	6.0	6.4	0.1
Median	<b>18.8</b>	<b>11.2</b>	<b>0.3</b>
Maximum	34.5	33.0	1.65
<i>Standard deviation</i>	9.3	9.7	0.4
<i>Sample size<sup>a</sup></i>	9	9	12
<b>CSP</b>			
Minimum	4.0	6.0	0.2
Median	<b>12.8</b>	<b>10.2</b>	<b>0.5</b>
Maximum	21.6	14.4	1.0
<i>Standard deviation</i>	8.8	4.2	0.3
<i>Sample size<sup>a</sup></i>	2	2	6

<sup>a</sup> No units.

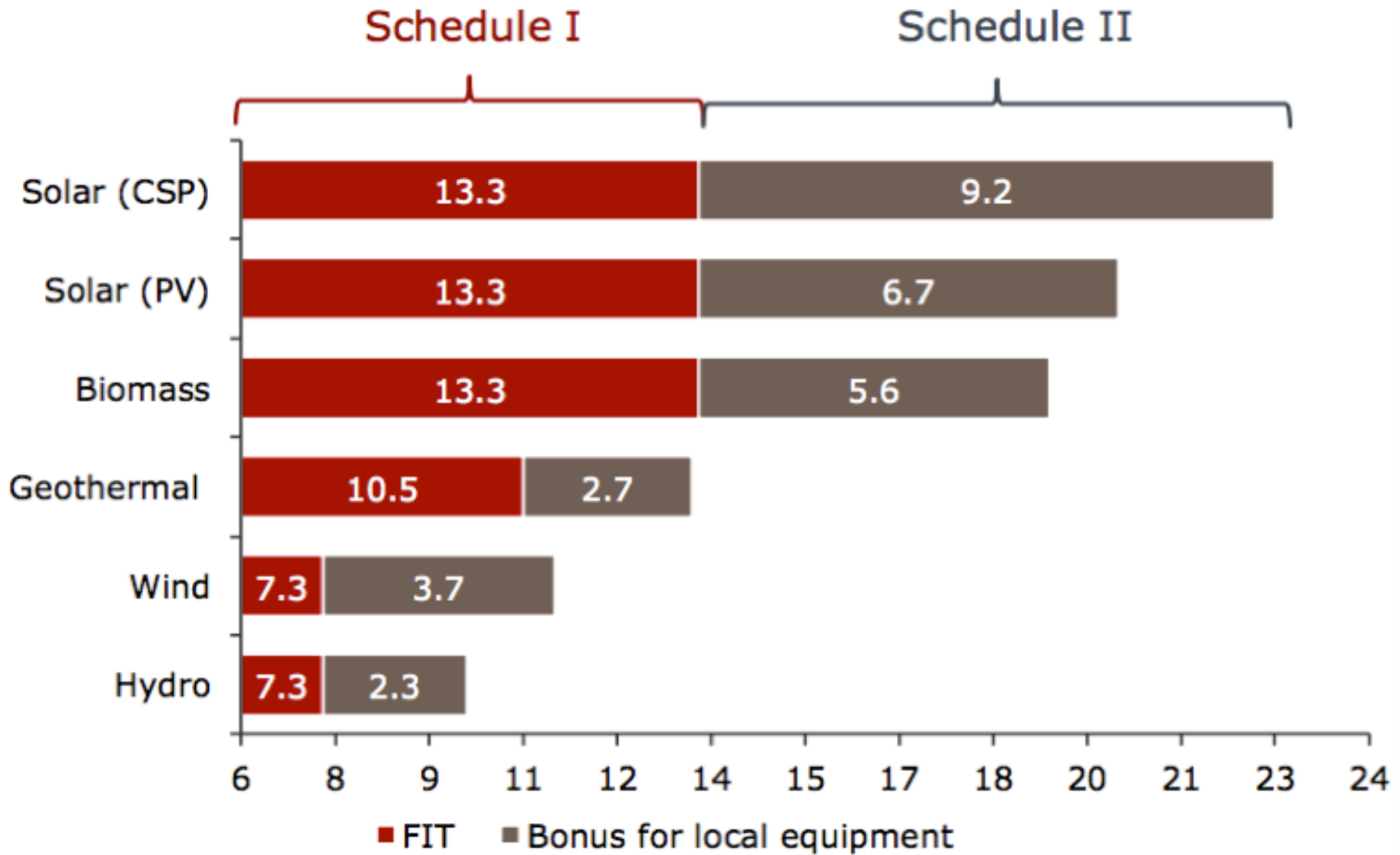
Source: Cameron and Van der Zwaan 2015

## 2) Issue: Fostering demand for RE

- Instruments to support demand to incentivize investments in RE/EE
- Good practice options:
  - Turkey: Feed-in tariffs (and premiums for locally manufactured components) for RE power plants guarantee a fixed price power purchase agreement over 20 years
  - South Africa: capacity auctions for RE 'reserve' a certain capacity in the electricity grid to renewables (or a specific RE technology) if they can meet a certain price threshold



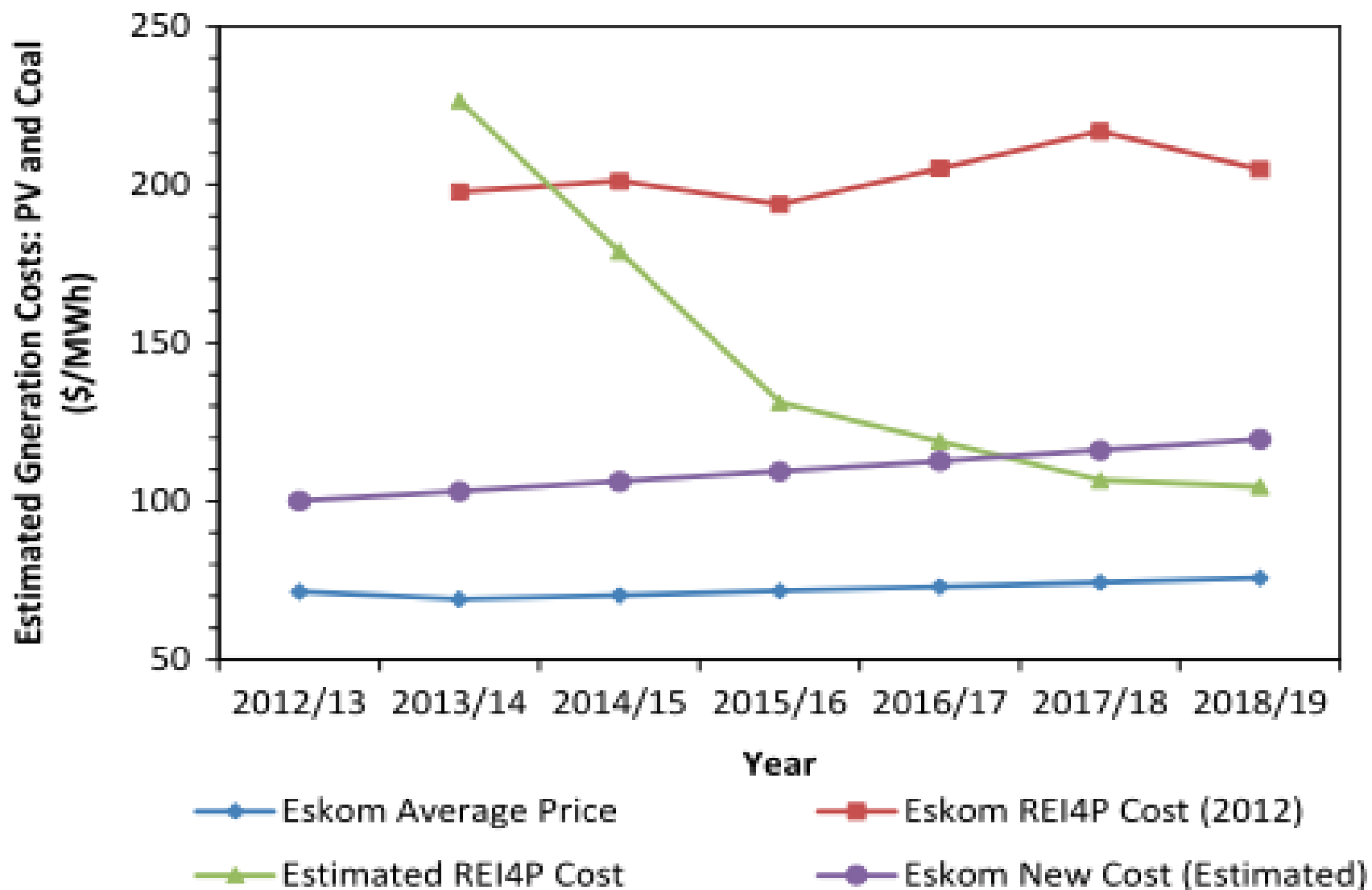
# Turkish feed-in tariff & local content premium



Technology	Power allocations (MW)			Price caps (\$/MWh)		
	One	Two	Three	One	Two	Three
Solar PV	631.5	417.0	401.3	285	174	140
Onshore wind	634.0	562.6	653.6	115	115	110
Small hydro	0.0	14.3	120.7	103	103	106
CSP	150.0	50.0	200.0	345	285	165
Biomass	0.0	0.0	60.0	107	110	140
Biogas	0.0	0.0	12.5	90	90	90
Landfill gas	0.0	0.0	25.0	84	90	94
<b>Total</b>	<b>1415.5</b>	<b>1043.9</b>	<b>1473.1</b>			
<b>Weighted average</b>				<b>215</b>	<b>147</b>	<b>127</b>



# South Africa: competitiveness of new RE vs. new coal



### (3) Providing training for RE/ EE employment

- Maximizing domestic employment requires a sufficiently large trained workforce with the right skill sets
- Good practice options:
  - ILO Study with assessment of skill needs for employment in RE/EE in China
  - Integration into existing scientific & training programs at universities, the 'normal' vocational training vocational system: TR, CN
  - Establishing RE/EE specific institutions and centres: SA, IN, BRA

- Successful countries:
    - Develop **strategic approaches** to their RE/EE goals, based on assessment of status quo and ambitious targets
    - Mobilize various government and non-governmental **actors and stakeholders**
    - **Implement policies** to develop markets and create employment
    - Invest in **capacity building** to accompany the development of markets & employment
- ⇒ Enable a co-evolution of policies, markets and technologies with benefits for employment and local value creation

Thank you for attention and comments

- Backup Slides