# Policy Instruments to Support RE Industrial Value Chain Development (RE-ValuePolicies)

**CEM4 – SideEvent**

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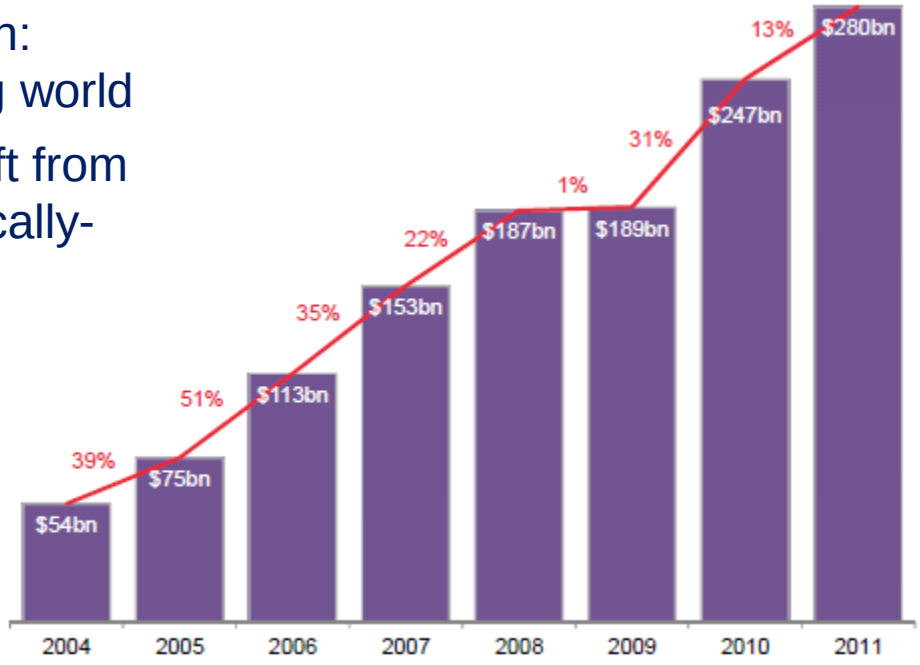
# Overall objective

- ToR: Carry out a study on the possible instruments to support the renewable energy industrial value chain - the study aims to assess a basket of cross-cutting policy instruments (innovation, labour, industrial, finance, export, etc.) which could complement the currently used set of RE policies, in order to enable countries to maximise the economic benefits of the further development of the RE industry.

- ToR: What is the impact of RE deployment and the RE sector on economic value creation? How can policy instruments (structural policy, labour market policy, research & innovation policy, industrial policy, export policies) facilitate the development of a domestic RE sector and enhance this impact? How do these instruments interact at national and international level? - The envisaged RE-ValuePolicies study aims to find answers to these questions.

- Success of RET:
  - Spectacular (>$1tr) amounts in clean energy investment (2004-2012) (Bloomberg 2012)
  - Geographic diversification: Developed -> Developing world
  - Cost competition: the shift from policy-driven to economically-driven growth

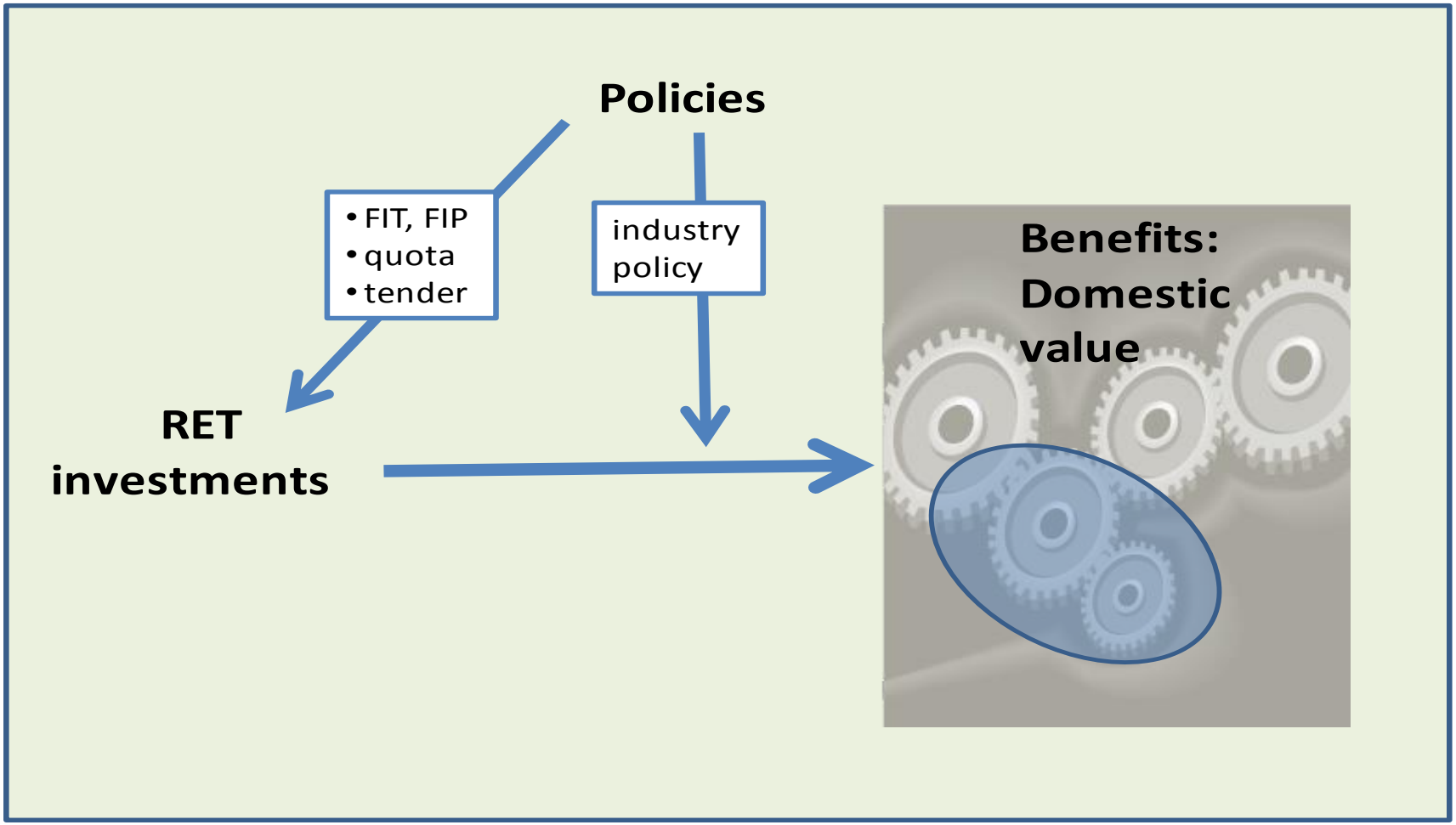



Note: Includes corporate and government R&D, and small distributed capacity. Adjusted for re-invested equity. Does not include proceeds from acquisition transactions

Source: Bloomberg New Energy Finance

- Has this been an economic success in the respective countries?

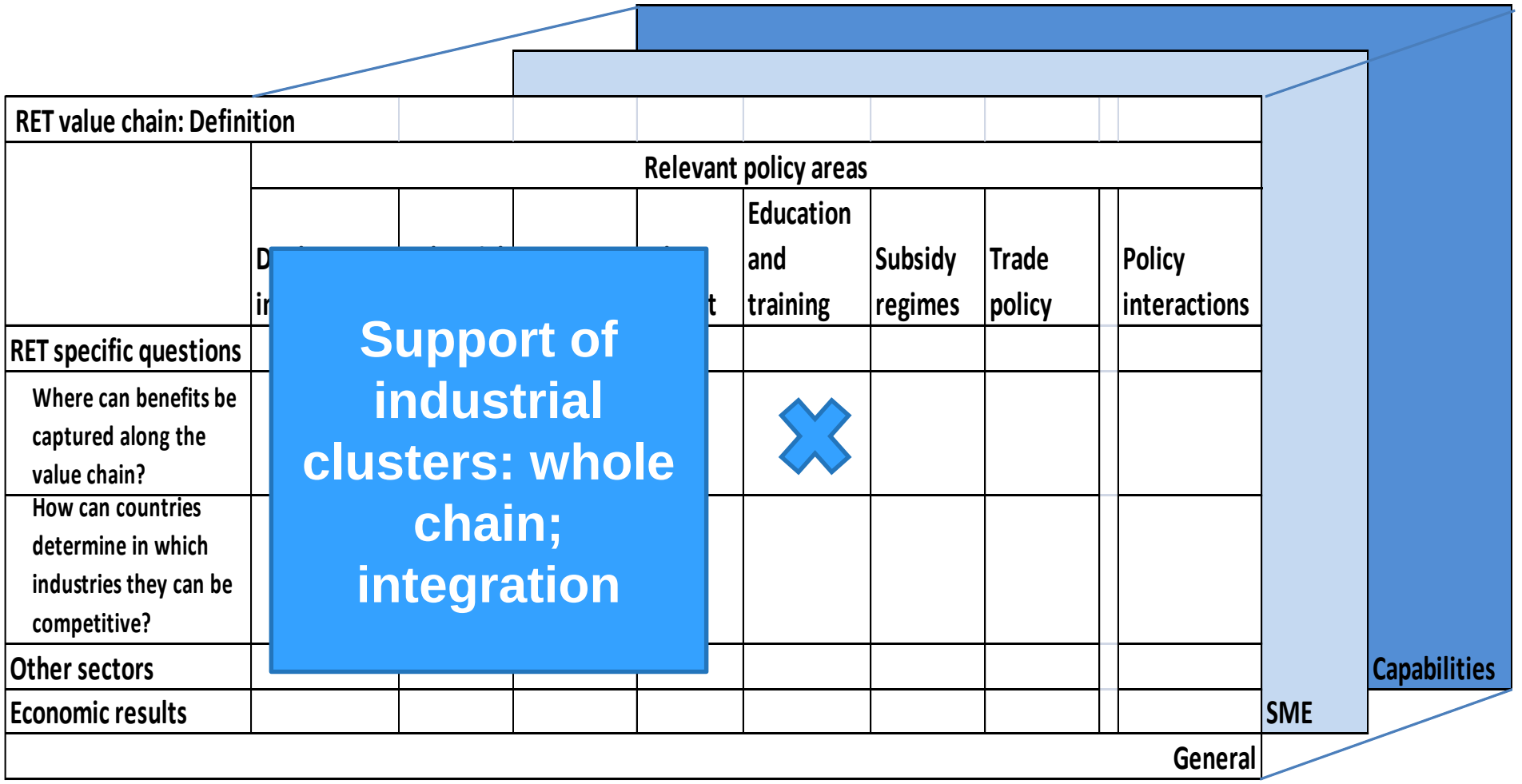
# Objective


Policies
• FIT, FIP
• quota
• tender
industry policy
RET investments
Benefits: Domestic value

# Regional scope – time horizon – RET - policy

- OECD – IEA – RETD countries
- Next 5 years – next 10 years
- All RET – focus on wind and solar
- All policy sectors. « Industrial policy » = all policies that either help to attract an industry along the value chain or help to keep it
- Success = industry exists

# Project objectives: why, what and how?



# Link to IRENA EcoValue Project

- Input WP2 => Definitions of value-added; value chain
- Input WP3 => Report on
  - Opportunities along the value chain
  - Identification of niches
  - Overview of policies that worked:
    - In OECD / IEA / RETD countries
    - In other economic sectors in industrialized countries

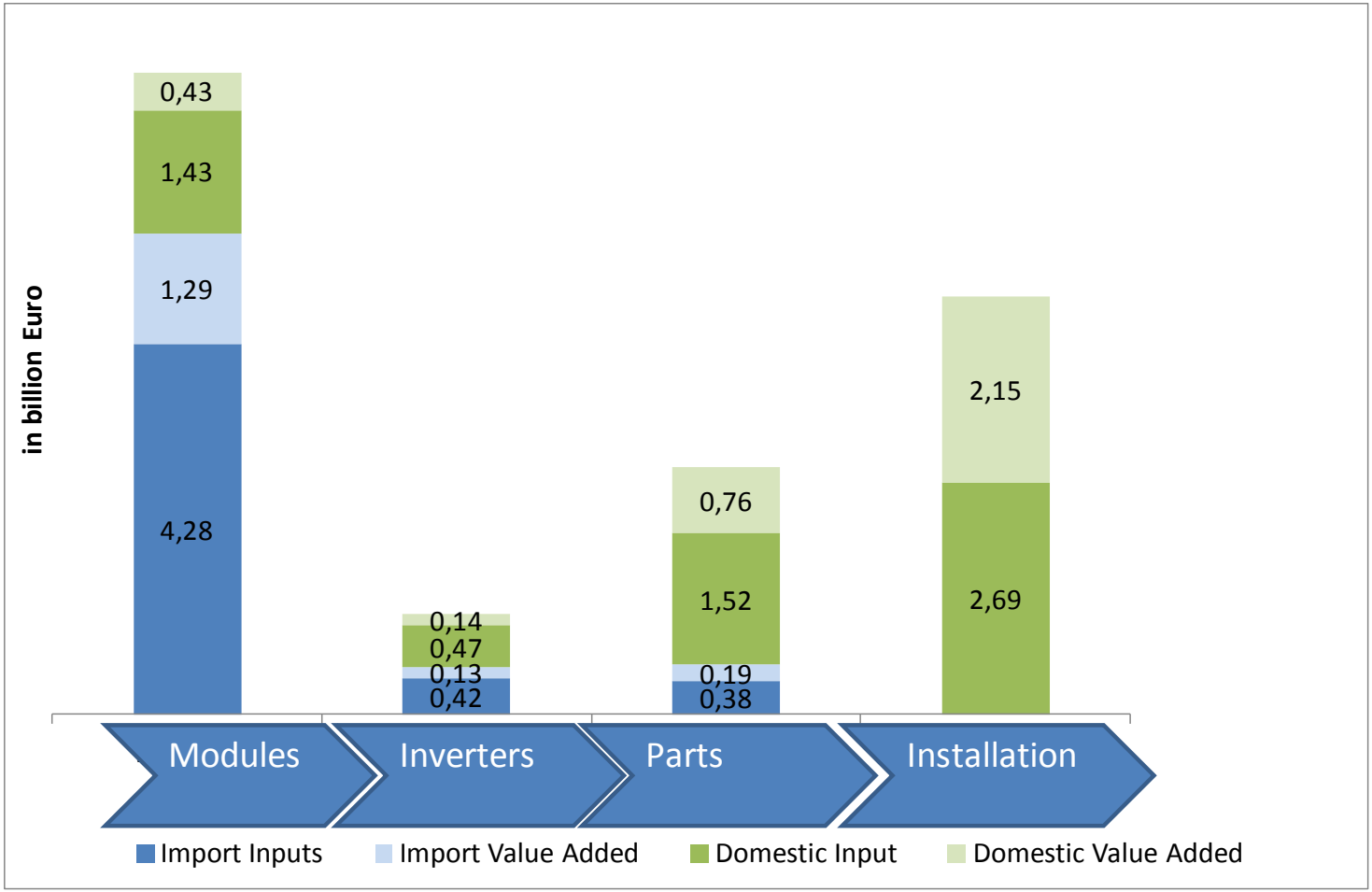
# First results: definition of value-added

- Value creation is at the center of economic activity, be it of countries or firms.
- Micro-economic definition (firms): amount of money which remains in the firm after all payments for material inputs, services from others, interests on loans and taxes are settled
- Meso-level (economic sector): production value of the sector minus all purchases of inputs (at basic prices) from domestic providers or from imports
- Macro-economic definition (economy): sum of value-added over all sectors (plus taxes, minus subsidies) = GDP

# Value-chains (supply chains) – more than first round effects!


| | e.g. Steel | e.g. Inverters | Trucks | e.g. cables | e.g. replace module | e.g. removal |
|---|---|---|---|---|---|---|
| Inputs | Ore | Copper | Inputs structure automotive | Copper | Input structure module | Transport |
| | Energy | Diode | | Plastic | | Container |
| | Machinery | Transistor | | Energy | | Environmen-tal tests |
| | Small parts | Capacitor | | | | |
| | … | … | | … | | |
| Value added: | ~ 20% | ~ 25% | ~ 18% | ~ 33% | ~ 20% | 15% - 40% |

# First results: First and second round effects PV value chain Germany (2012)



# Coverage in inception report

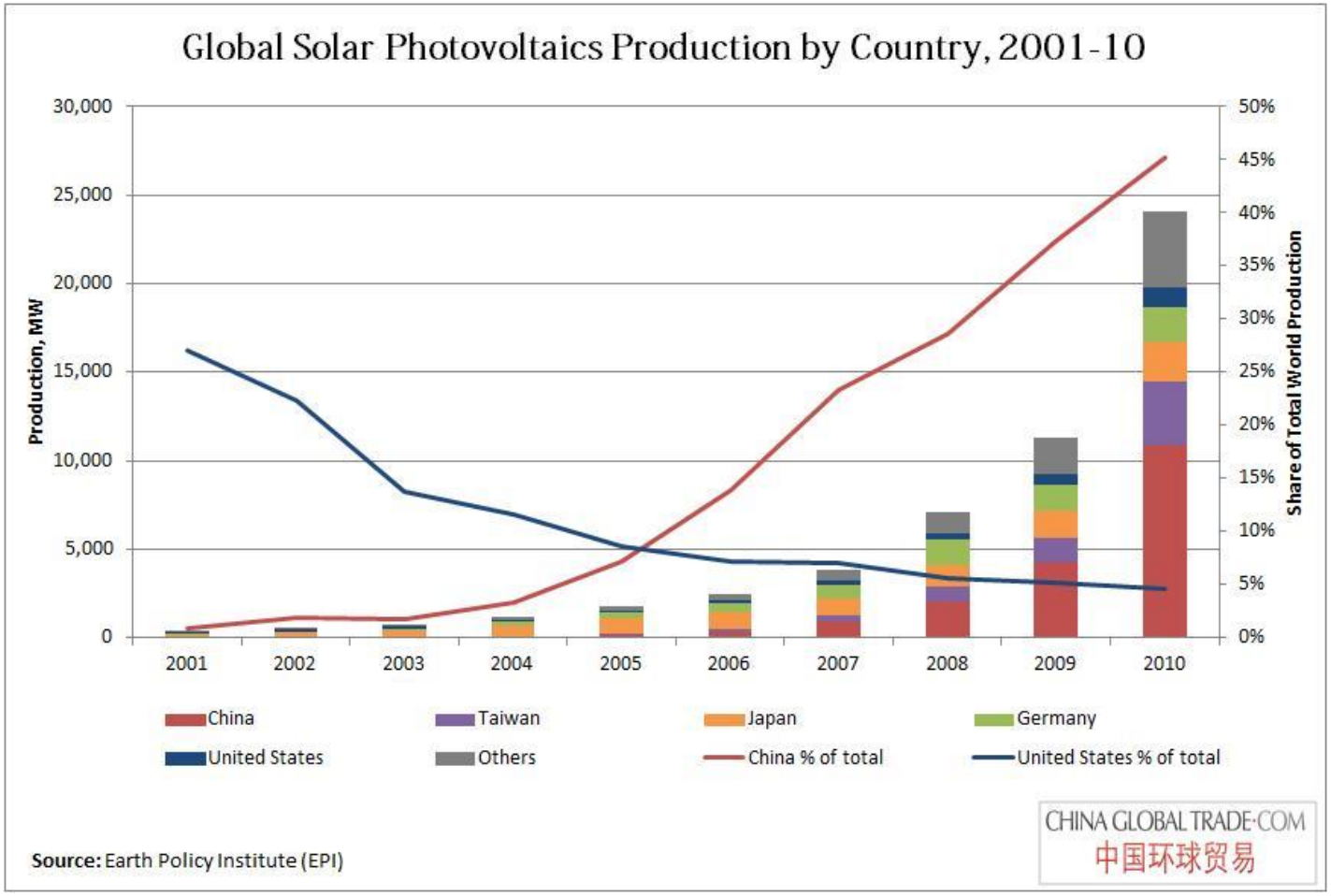
- What is the use of developing a national RE industry?
  - PV: currently 100% overcapacity, easily shipped and transported; today's capacity suffices for even the more ambitious PV deployment scenarios (E[r]) => opportunities up-stream and down-stream
  - Wind: currently 30% overcapacity, higher transport costs – more detailed in later report
- Where are the opportunities along the value chain?
  - PV: up-stream: inverters, parts => metal; electrics/electronics industry;
    down-stream: installation and inputs therein => deployment!
- The more specialized, the more dependent on (regional or global) deployment => multiple use products industries are more robust
- Other sectors: Automotive, aircrafts

# Coverage in inception report

| | Opportunities for value creation along the value chain | | | | |
|---|---|---|---|---|---|
| Policy areas | R&D | Manufacturing | Project Development | Installation | O&M |
| Investment promotion | ← | — | → | | |
| Linking investment to employment and capabilities | | ← | — | — | → |
| Developing productive clusters | ← | — | — | — | → |
| Links between public research institutions and enterprises | ← | — | → | | |
| Advanced skills development | ← | — | — | — | → |

| Policy areas | Best practice examples |
|---|---|
| Investment promotion | Costa Rica, Canada |
| Linking investment to employment and capabilities: | |
| - Local content requirements | Ontario |
| - Supplier development programs | Ireland, Singapore, Mexico |
| Developing productive clusters | California, Germany |
| Links between public research institutions and enterprises | Germany, Canada |
| Advanced skills development | Malaysia, Spain |

# Finding the right niche – success stories



# Finding the right niche – success factors

| | Proximity to existing production | Skilled workforce | Cluster quality | Integration along the value chain |
|---|---|---|---|---|
| Metals | ++ | ++ | + | + |
| Machinery | +++ | +++ | +++ | + |
| Electrical devices | ++ | ++ | + | ++ |
| Electronic parts | +++ | +++ | ++ | ++ |
| Process and controls | ++ | ++ | ++ | + |
| Construction preparation | + | + | | |
| Installation, construction | ++ | + | | +++ |
| Trade, whole sale | | + | + | ++ |
| Banks | | + | | ++ |
| Insurance | | + | | + |
| Industrial services | ++ | +++ | ++ | +++ |

# First (tentative) conclusions

- Industries spin off industries!
- Create an “industrial environment”!
- Infrastructure matters!
- LCR can only be a start!
- Governmental commitment impresses investors!
- Take all citizens with you!
- Who is worth rescuing?
- Don’t wait until you have to rescue.

# THANK YOU!

**For additional information on RETD**

**Online:** www.iea-retd.org
**Contact:** IEA_RETD@ecofys.com

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