

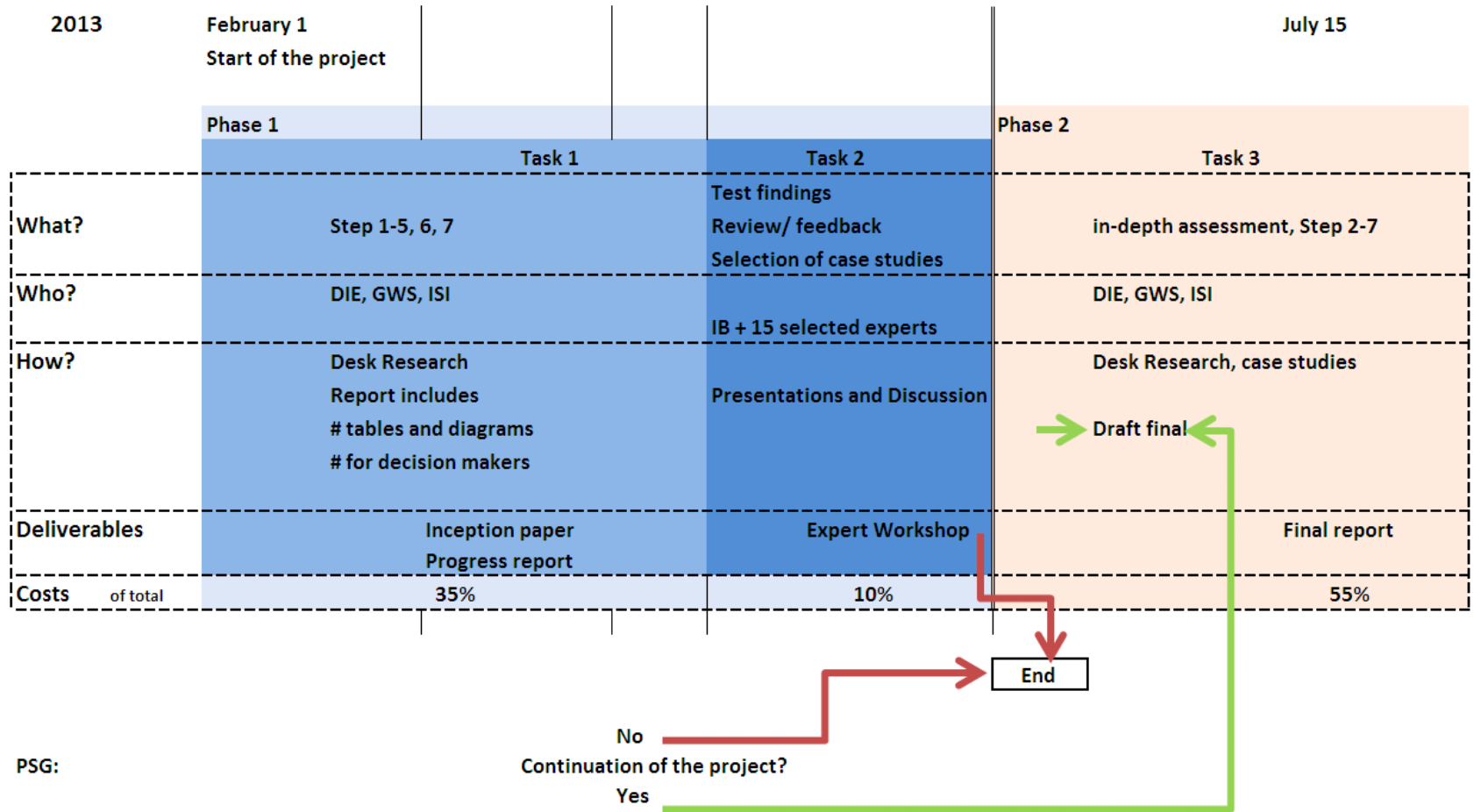
Policy Instruments to Support RE Industrial Value Chain Development (RE-ValuePolicies)

IEA-RETD Workshop on Policy Instruments to Support RE Industrial Value Chain Development (RE-ValuePolicies)

May 2, Bonn (Session 1)

Ulrike Lehr

Why this workshop?

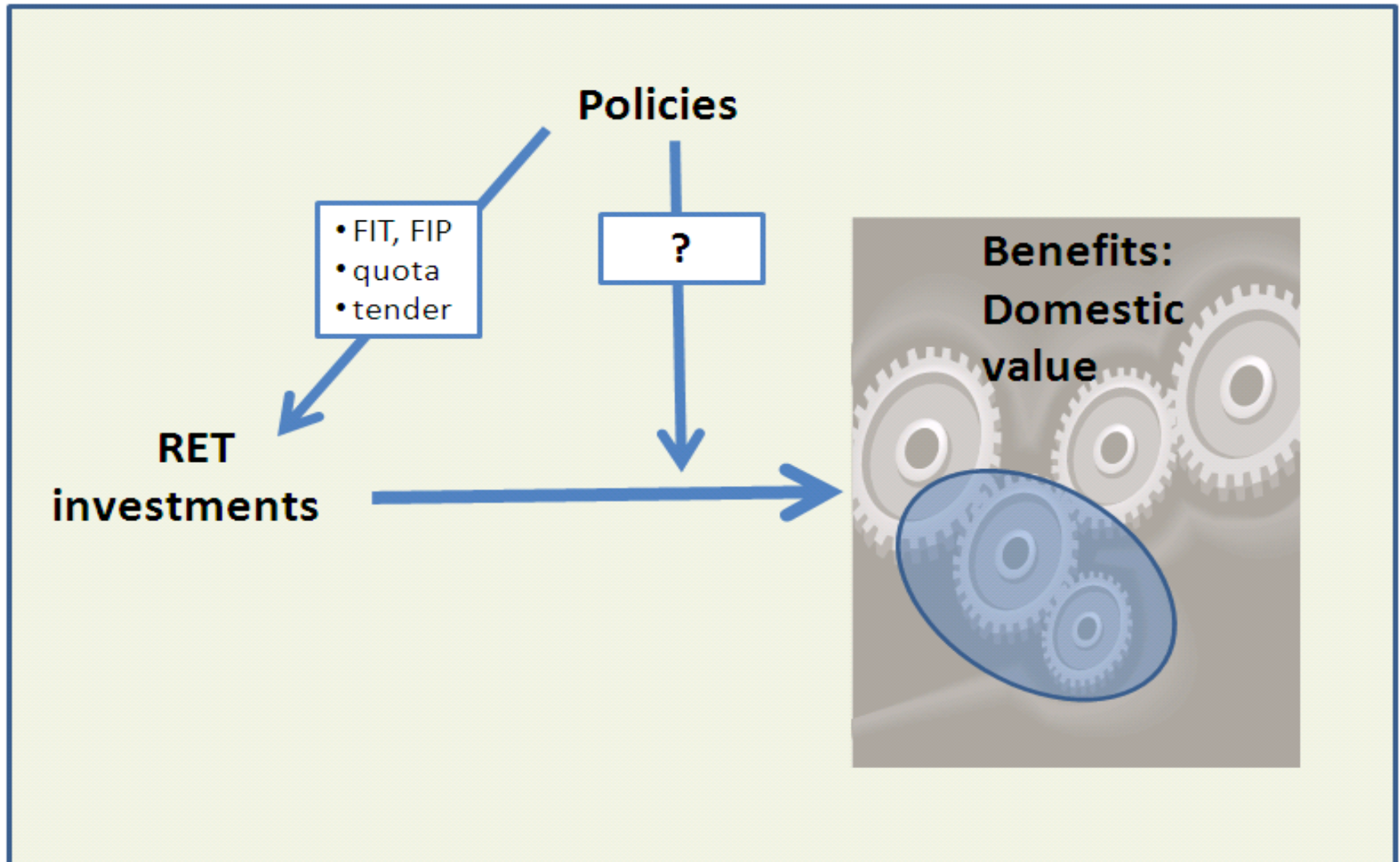


In each session, we like to know:

- **Where do you agree and where do you disagree?**
- **What seems interesting but requires more explanations?**
- **What do you consider interesting for further analysis?**

+ particular, specific questions at the end of the presentations

How can deployment success be turned into economic success in terms of value creation?



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

Where are the opportunities?

How much production capacity is needed – **now** and in the future?

**North America: 21
production sites**

2011: Capacity installed ~30 GW

**China: 131 out of
370 module
production firms;
45 GW production
capacity**

**Europe: 8.5 GW,
before 2012**

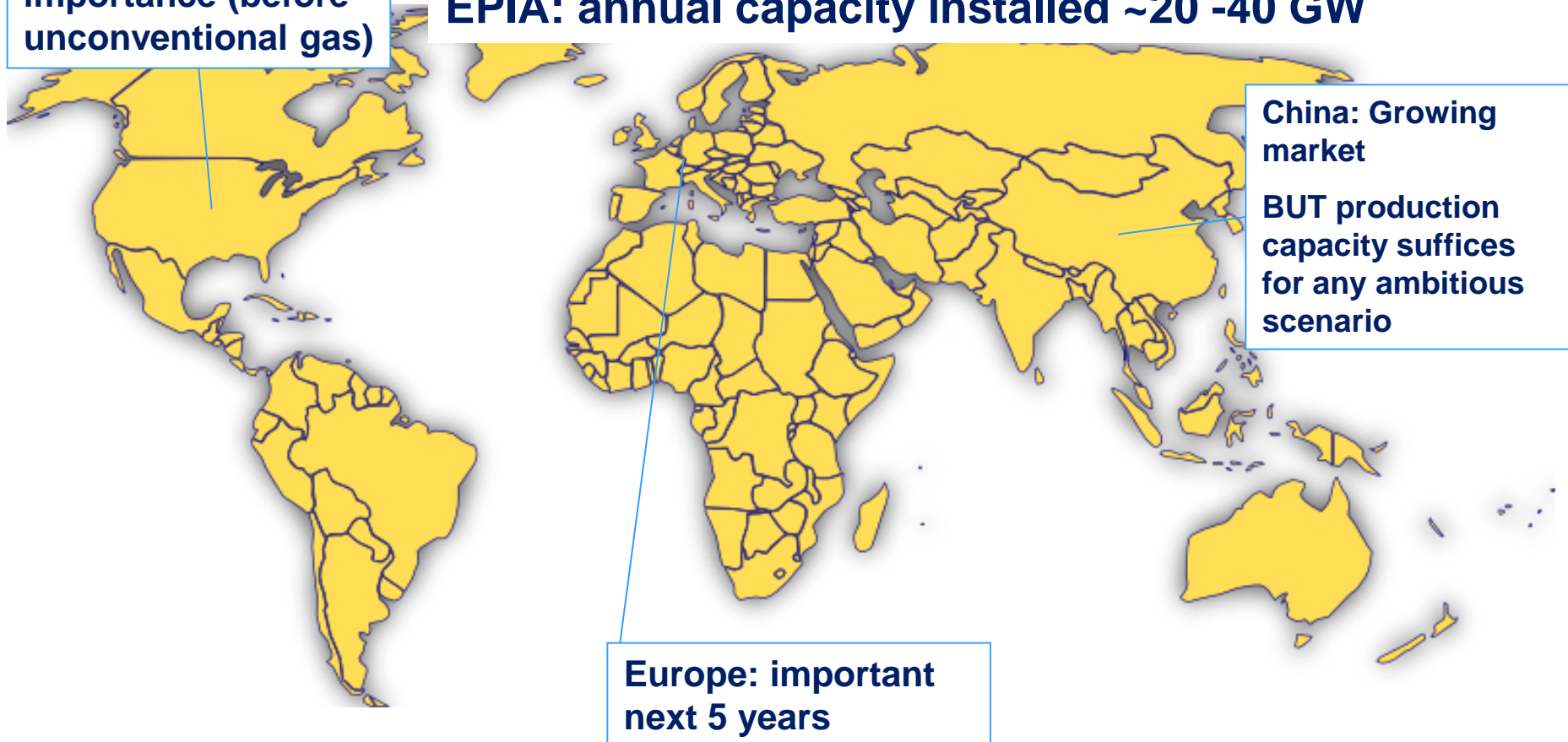
Where are the opportunities?

How much production capacity is needed – now and in the future?

E[r] scenario: North America of great importance (before unconventional gas)

E[r]: annual capacity installed ~35 GW

EPIA: annual capacity installed ~20 -40 GW



- Wind starts to face overcapacity, too
- Currently, worldwide capacity installed was around 50 GW – with a global production capacity of nearly 80 GW

Where are the opportunities?

In new products and along the value chain!

First results: definition of value-added

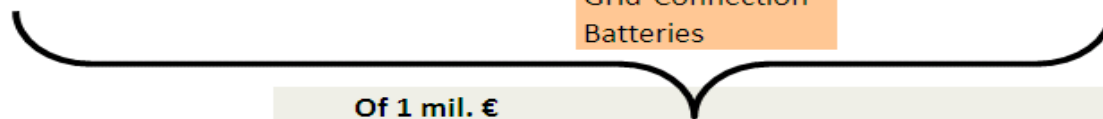
- Value creation is at the center of economic activity, be it of countries or firms.
- Micro-economic definition (firms): amount of money which remains in the firm after all payments for material inputs, services from others, interests on loans and taxes are settled
- Meso-level (economic sector): production 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		Environmental tests
	Small parts	Capacitor				
		
Value added:	~ 20%	~ 25%	~ 18%	~ 33%	~ 20%	15% - 40%

		Inputs			Value added per sector
		Materials	Services	Components	Installation
Wind energy	Steel	Planning	Base Tower Blades Brakes Rotor	Construction	35%
	Concrete	Finance		Electrical connection	
	Fiber glass	Insurance		Cranes	
	Aluminum	Transport			
	Copper	Wind prognosis			
Solar energy	Ceramics	Insolation prognosis	Nacelle		34%
		Trade	Wafer		
		Inverter			
		Cable			
		Grid-Connection			
			Batteries		



	Of 1 mil. € investment, this amount	goes to	this Sector	Of left column, percentage value added
1 mil. € Investment in Wind and Solar	25.957		Chemicals	35%
	7.252		Ceramics	33%
	75.601		Metals	40%
	27.051		Machinery	35%
	81.179		Electrical devices	35%
	29.201		Electronic parts	26%
	6.531		Process and controls	46%
	45.051		Other vehicles	27%
	26.946		Construction prepara	45%
	24.698		Installation, construc	38%
	4.961		Trade, whole sale	64%
3.864		Banks	45%	
6.046		Insurance	17%	
56.361		Industrial services	56%	
+	Imports		18,00%	
+	Value added		35,00%	
=	Output of Sector Wind and Solar		100,00%	

First (tentative) conclusions

- Value creation opportunities from RET production and deployment are found in several economic sectors
- To create domestic value:
 - Support deployment, because installation and O&M are always domestic
 - Support up-stream industries - specialize?
 - Support services

Questions to participants:

- Current analysis: Comprehensible?
- Future analysis:
 - More numerical examples?
 - Transfer to other countries?
 - Which technologies?



THANK YOU!

For additional information on RETD

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

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

