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Prepare for Impact: The Solar Europe Industry Initiative

Wim Sinke

European Photovoltaic Technology Platform

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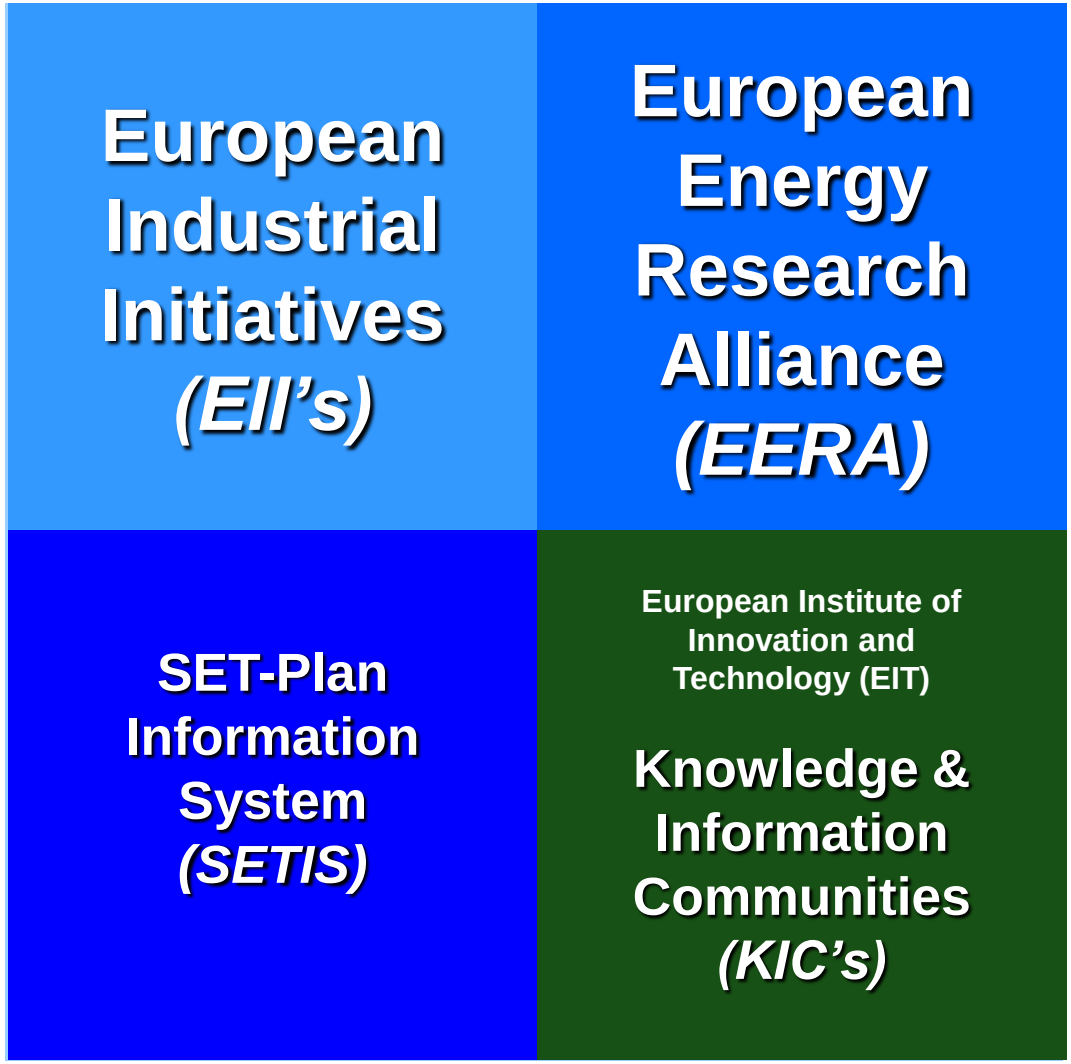
Policy context and background

EU Strategic Energy Technology Plan

- **EU 2020 targets:**
  - 20% contribution of renewables
  - 20% reduction of greenhouse gas emissions
  - 20% increase of efficiency

EU Strategic Energy Technology Plan



European Industry Initiatives

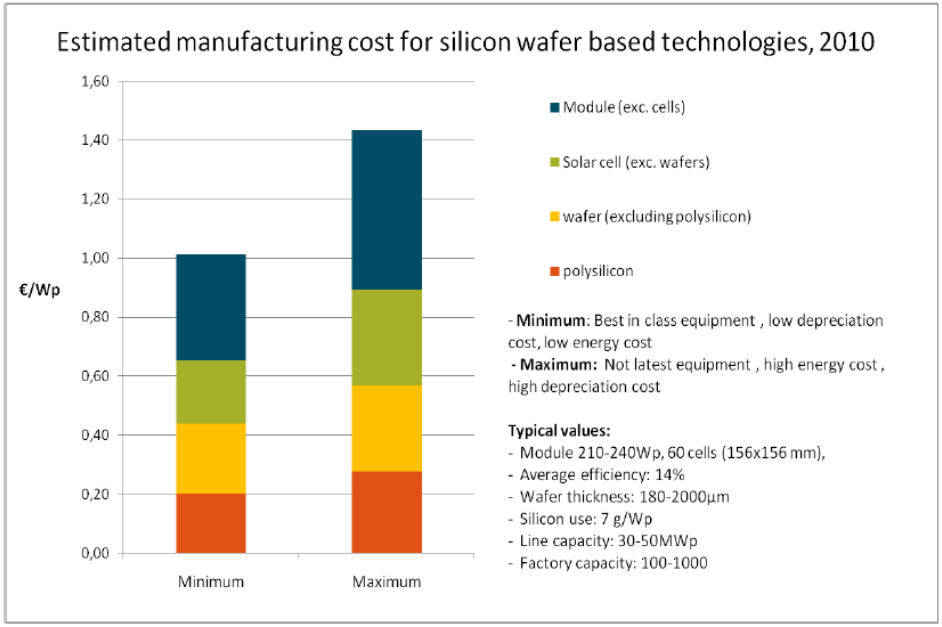
- **Industry-led RD&D programmes**
- **Large-scale (typically >1 G€) & long duration (2010 - 2020)**
- **Impact well beyond business-as-usual:**
  - enabling large-scale deployment of technology
  - ensuring a major role of the European industry
- **Mixed financing: private + public, EU + Member States, grants & loans**
- **EII's launched on 3 June 2010:**
  - solar, wind, grids, CCS

SET-Plan Information System

- **Monitoring of progress of SET-Plan related actions**
- **Definition of KPI's + reference systems and technologies**

System category	size	Type of installation
Residential	3-10 kWp	Roof-top/ BIPV (roof/façade)
Commercial	100 kWp	Roof-top/ BIPV (roof/façade)
Industrial	1 MWp	Roof-top
Utility scale	1-50 MWp	Ground mounted

examples



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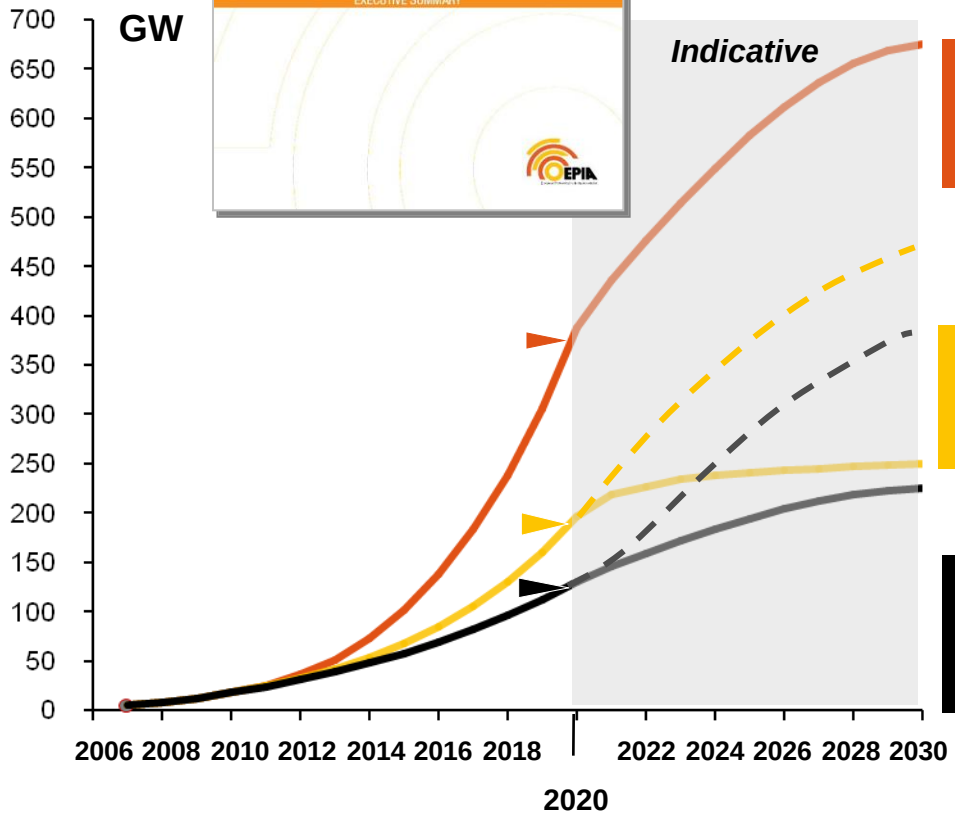
Vision on the future of PV

PV can contribute up to 12% of EU electricity demand by 2020

Courtesy M. Lippert, SAFT



Share of demand by 2020

Paradigm Shift Scenario*: *12%

Accelerated Scenario*: *6%

Baseline Scenario: 4%

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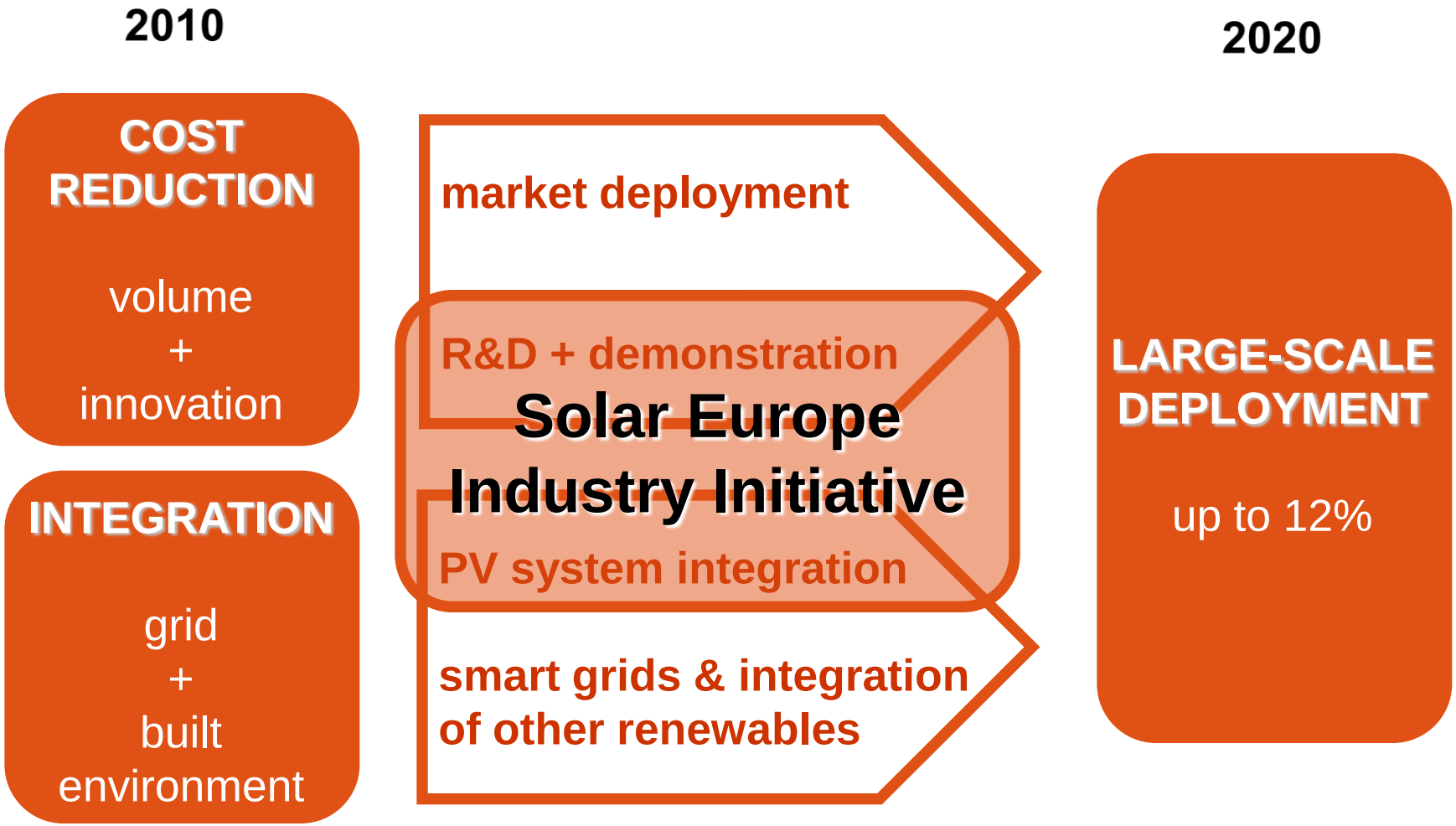
Enablers for very large scale use

SEII contribution to large-scale deployment



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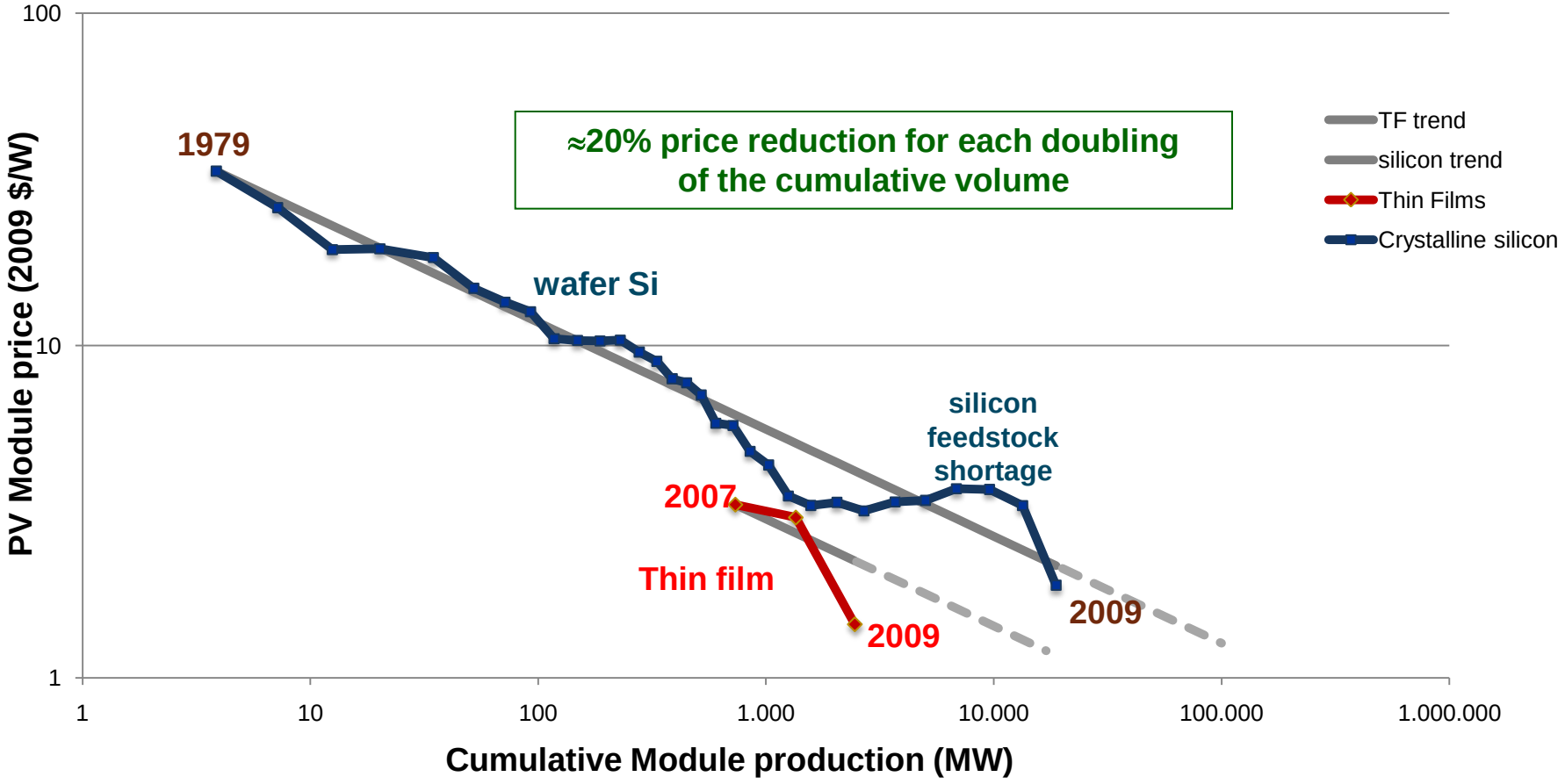
The Solar Europe Industry Initiative

PV module price-experience curve
(result of learning, scale effects and innovations)



Bron: EPIA, October 2009

PV technology state-of-the-art and indicative objectives

		2007	2010	2015	2020
Turn-key price larger systems (€/Wp)*		≥5	2,5-3,5	2	1,5
PV electricity generation cost in Southern EU (€/kWh)**		0.30 – 0.60	0.13 – 0.25	0.10 – 0.20	0.07 – 0.14
Typical PV module efficiency range (%)	Crystalline silicon	13 - 18%	15 - 20%	16 - 21%	18 - 23%
	Thin films	5 - 11%	6 - 12%	8 - 14%	10 - 16%
	Concentrators	20%	20 - 25%	25 - 30%	30 - 35%
Inverter lifetime (years)		10	15	20	>25
Module lifetime (years)		20 - 25	20 - 25	25 - 30	35 - 40
Energy pay-back time (years)***		2 - 3	1 - 2	1	0.5
Cost of PV + small-scale storage (€/kWh) in Southern EU (grid-connected)****		--	0.35	0.22	<0.15

*** System price depends on technology and market maturity**

**** LCoE varies with financing cost and location. Insolation range considered here 1500 - 2000 kWh/m² per year**

***** Best values**

****** Estimated figures based on EUROBAT roadmaps**

Scope and relation with other Initiatives

Interaction with other initiatives

- ***Energy Efficient Buildings PPP***
- ***Smart grids initiative***
- ***Green Cars PPP***

Technological component

SEII

Cost reduction

System integration

Beyond 2020

Non-technological component

Education & training

Awareness

SEII Implementation Plan 2010-2012

Core of the SEII 2010-2012: selected priority areas

1. Cost reduction: paving the way to 2020

- Advanced manufacturing processes for cells, modules and feedstock
- Performance enhancement and lifetime extension
- Power conditioning: smart inverters
- Sustainable material alternatives

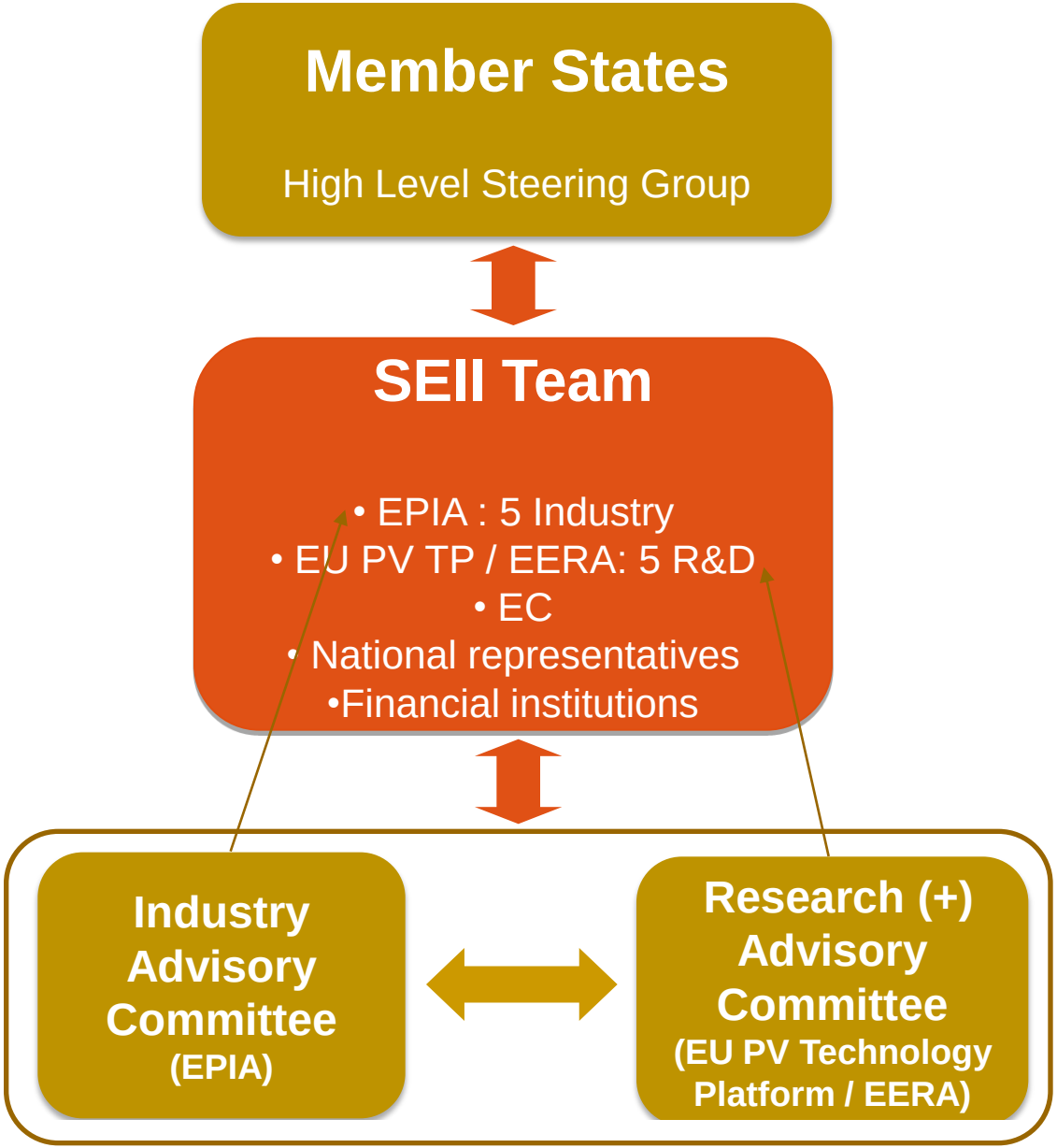
2. System integration: paving the way to 2020

- Multifunctional PV modules for building integration solutions
- Stability and dispatchability (storage management)
- Solar resources, monitoring & simulation

3. Preparing for cost and penetration beyond 2020 levels

- Ultra-low cost technologies (develop to pilot production levels)
- Very-high efficiency approaches (develop to proof-of-concept levels)
- Integration concepts for very high levels of PV penetration (demonstrate)

Solar Europe Industry Initiative: governing structure



Finding the appropriate funding instruments

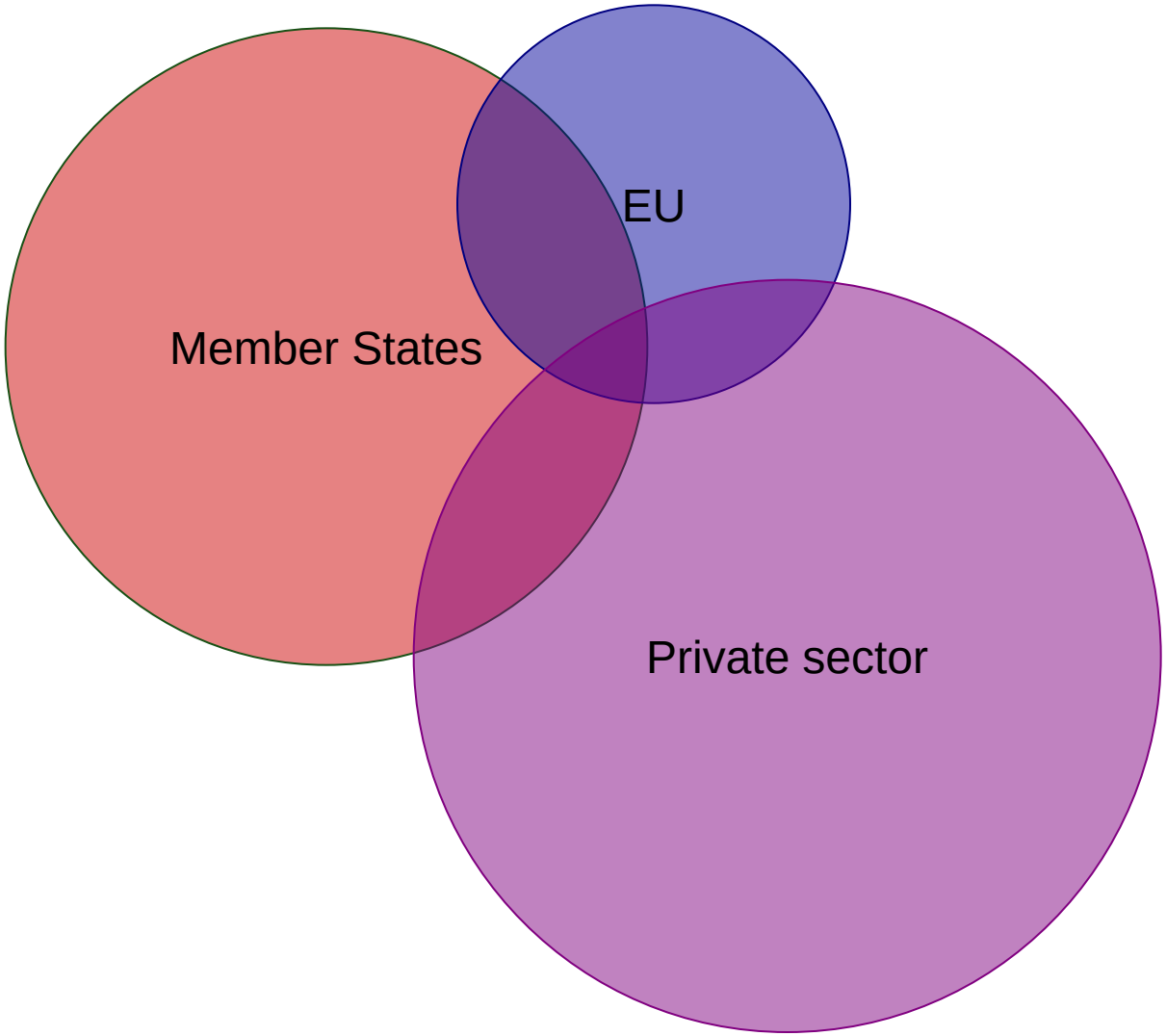
State of development	Level of public funding	EC/MS share
Market uptake / innovation / private infrastructure	<30%	20/80
Manufacturing technologies, demonstration & test facilities	30-50%	40/60
Pre-competitive research	50-70%	60/40
Enabling research / policy actions	70-90%	80/20

- Member States
- Equity and loans (EIB)
- NER-300

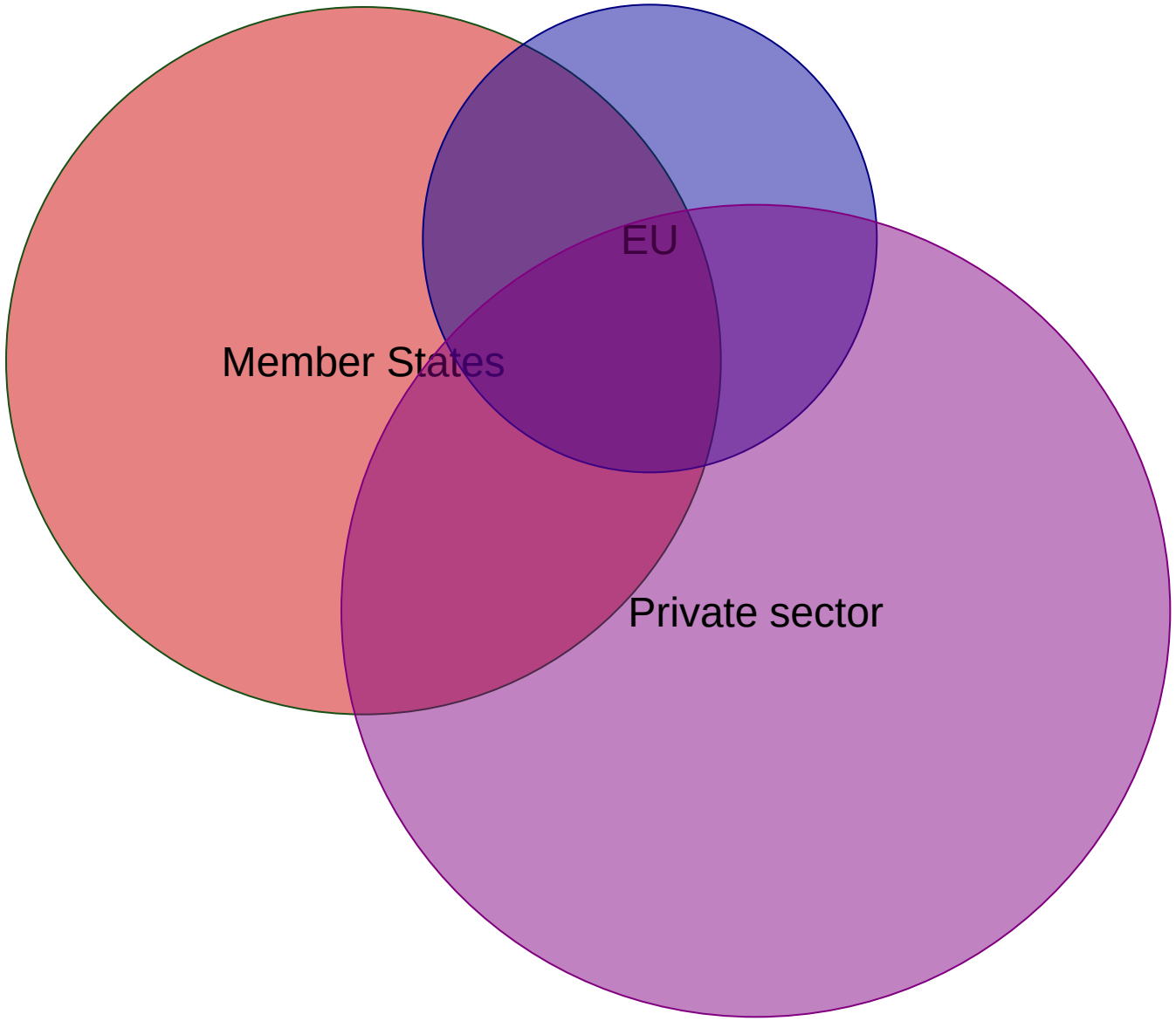
- EU grants
- Member States
- Equity and loans (EIB)
- NER-300

- EU grants
- MS for relevant actions

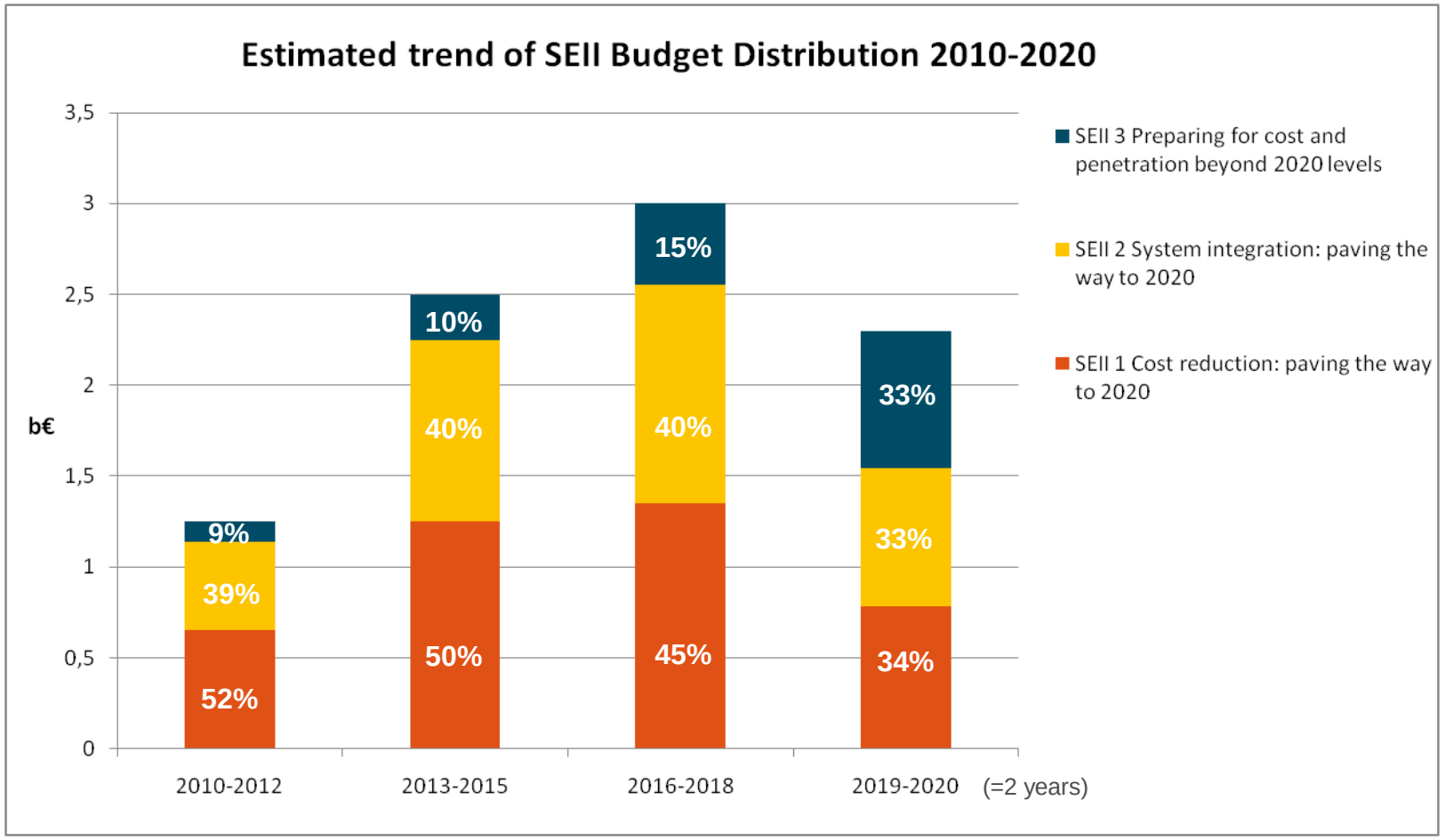
Total *vs* SEII RD&D



Total *vs* SEII RD&D

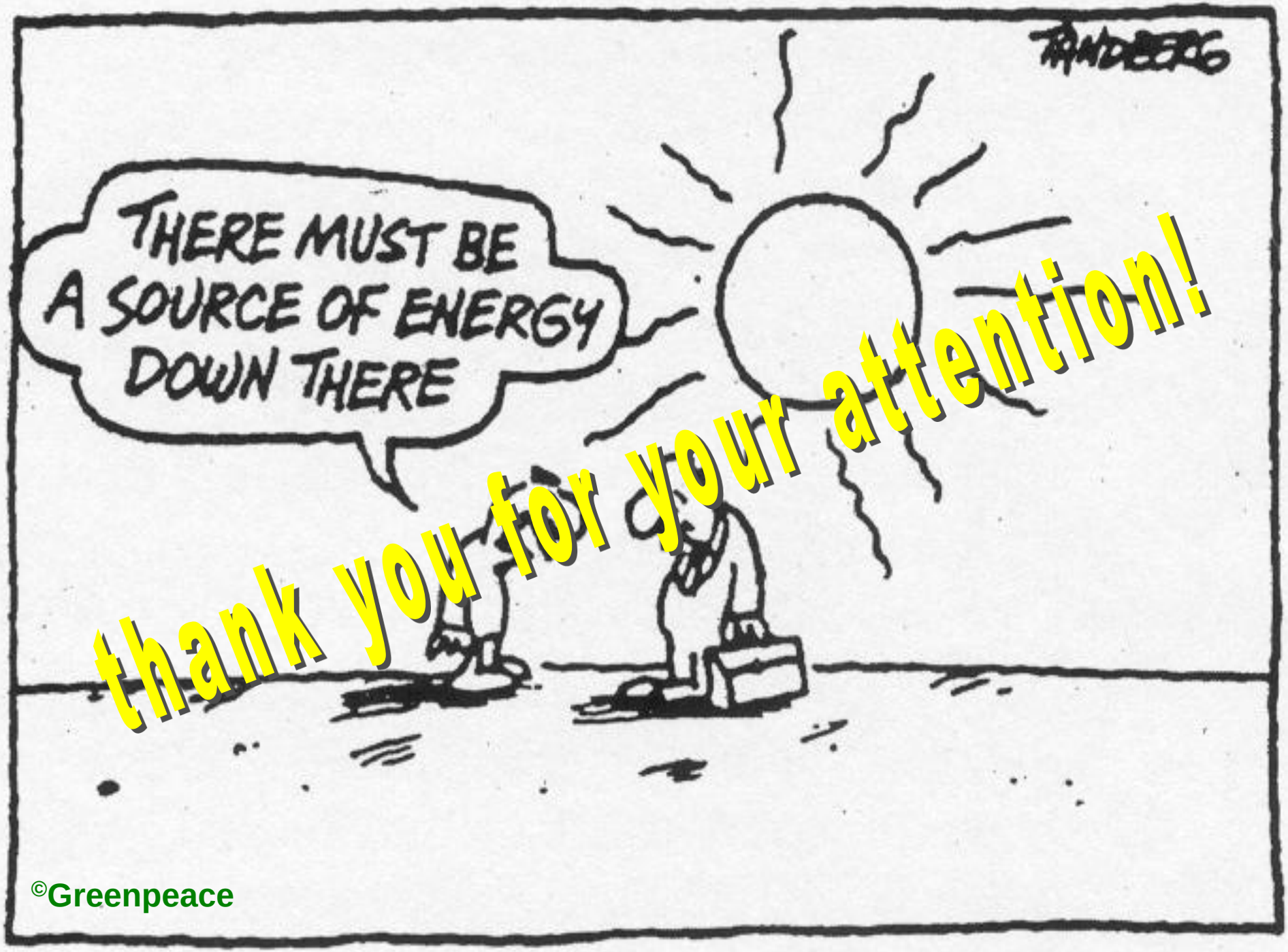


Budget breakdown for R&D & Demonstration (2010-2020)



Summary and outlook

- **Initial joint European priorities agreed upon**
- **Initial modes of (co)operation under preparation**
- **Core group of active Member States ready to start**
- **Budget (re)allocation now has highest priority**
- **First time Europe joins forces on this scale**


THERE MUST BE A SOURCE OF ENERGY DOWN THERE
thank you for your attention!