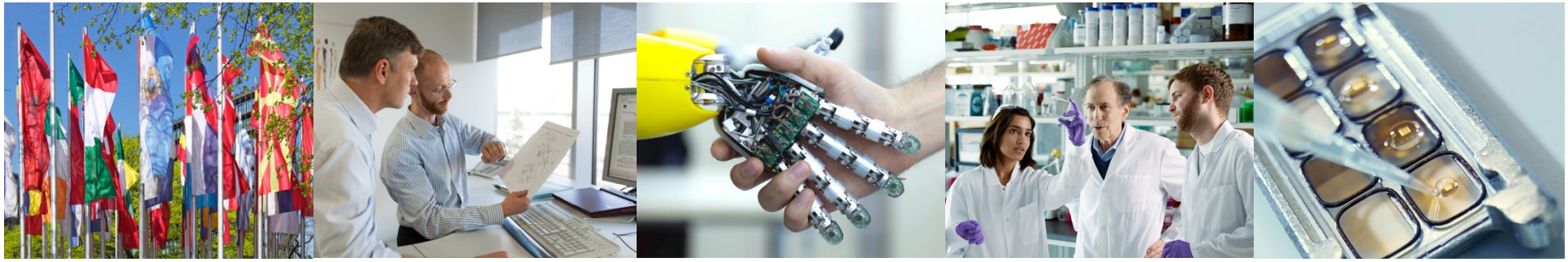
Europäisches Patentamt
European Patent Office
Office européen des brevets

Patents and Climate Change Mitigation Technologies

The EPO Experience and Latest International Trends



Rudyk, Ilja Senior Economist, EPO

10 - 10 - 2018

Climate change - A global problem

UNEP: “**Climate change is one of the most pervasive and threatening issues of our time, with far-reaching impacts in the twenty-first century.”**

Examples from the EPO‘s Inventor Award

Gert-Jan Gruter (NL) **Plant-based plastic bottles**

Henrik Stiesdal (DK)
Offshore wind farm

Mehrdad Mahdjoubi (SE)
Closed-loop shower to save water and energy

Source: Media materials on European Inventor Award 2018, https://www.epo.org/news-issues/press/european-inventor-award.html

Technology as a solution?

Development

Deployment

Second externality

§ **Technology, a dual resource**:

§ **Public goods problem:** The product or the process are rivalrous and excludable, but not so knowledge, which can be unlimitedly shared and reused

§ Market alone would create insufficient **incentives to invest** in R&D and to **exploit the results**.

Technology as a solution?

KNOWLEDGE

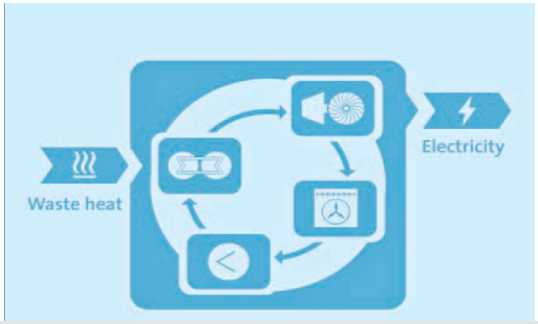
Patents

Development

Deployment

Example: Orcan Energy

Compact micro power plants turning heat waste into energy!



+ Increase electricity production

+ Reduce CO_2-emissions

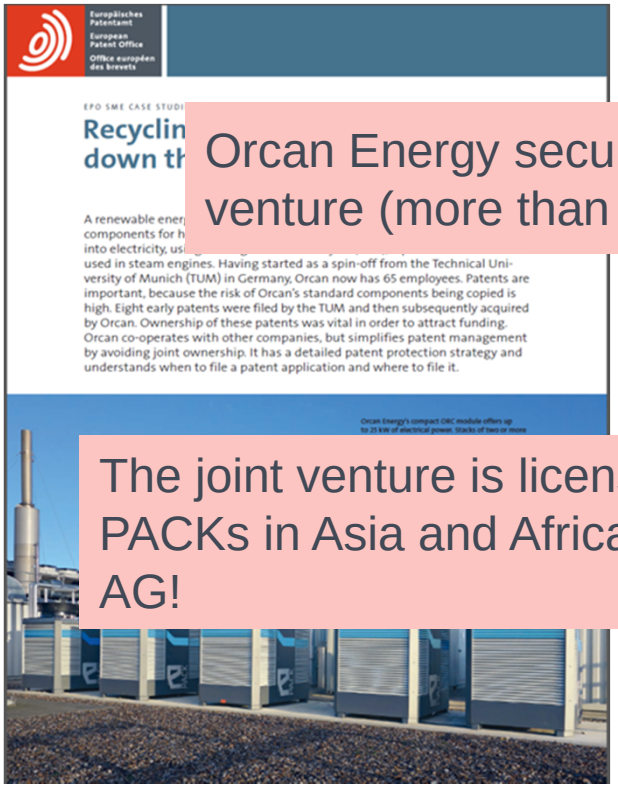
+ Improve energy efficiency

Example: Orcan Energy

- From a government-supported programme for university-based business start-ups
- Technology prone to copying è 23 patent families, eight from TUM
- Fast and early transfer (purchase) of university patents to Orcan was crucial for investors
- Exploring out-licensing & applications in other markets

www.epo.org/sme

Example: Orcan Energy



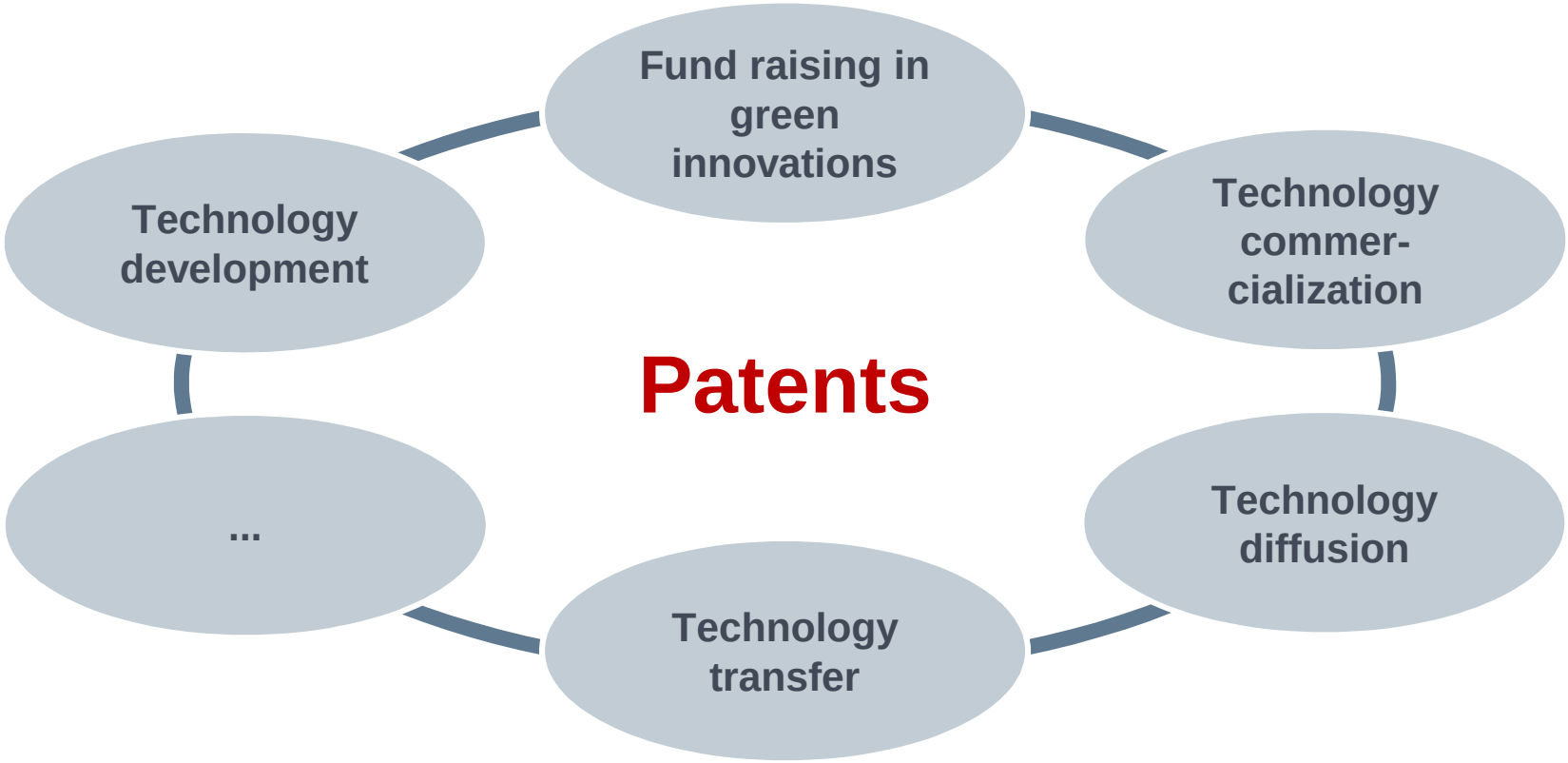
Orcan Energy secures market entry into Asia and Africa with joint venture (more than 80 orders already in the first months)

- From a government-supported programme for
  - eight from TUM
- Fast and early transfer (purchase) of university

The joint venture is licensed to manufacture, market and operate efficiency PACKs in Asia and Africa. Patent ownership will be retained by Orcan Energy AG!

www.epo.org/sme

Role of patents and IP



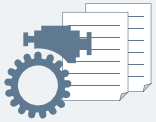
Role of patent information – the patent deal

Temporary exclusive right in return for **disclosure**

Why patent information matters

- § Avoid duplication of R&D expenditure
- § Find out what technology already exists and build on it

Technical information

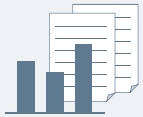


- § Check where an invention is protected (and where it is not)
- § Avoid infringing other people's patent rights

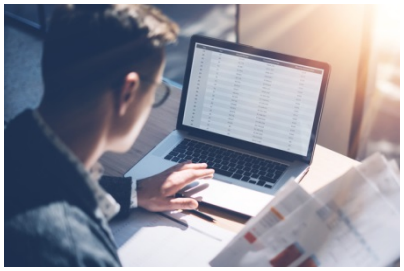
Legal information

- § Keep track of what others are doing
- § Identify new partners, e.g. for licensing
- § Spot trends in technology or the market

Business information



Different user groups



IP professionals

Top management

Interested public

Engineers/scientists

Policy makers

Problem: How to identify CCMT inventions?

Produce a **tagging scheme** which

- is **technically complete** (all relevant technologies)
- covers **comprehensive** documentation (definitions)
- is **technically specific** (granular)

at the same time:

- **relevant** information for the particular problems of climate change mitigation and adaptation
- **accessible** to people without a technical background
- **free** of charge
- **global**, i.e. cross-jurisdictional

Overview of the Y02/Y04S scheme

Y02C (Capture and storage of GHG**)**

Y02E (Energy generation, transmission or distribution**)**

Y04S (Smart grids**)**

Overview of the Y02/Y04S scheme

Y02B (Buildings**)**

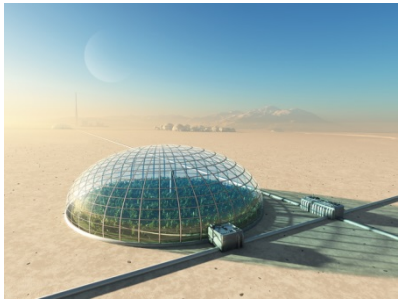
Y02T (Transportation**)**

Y02P (Industry and agriculture**)**

Overview of the Y02/Y04S scheme

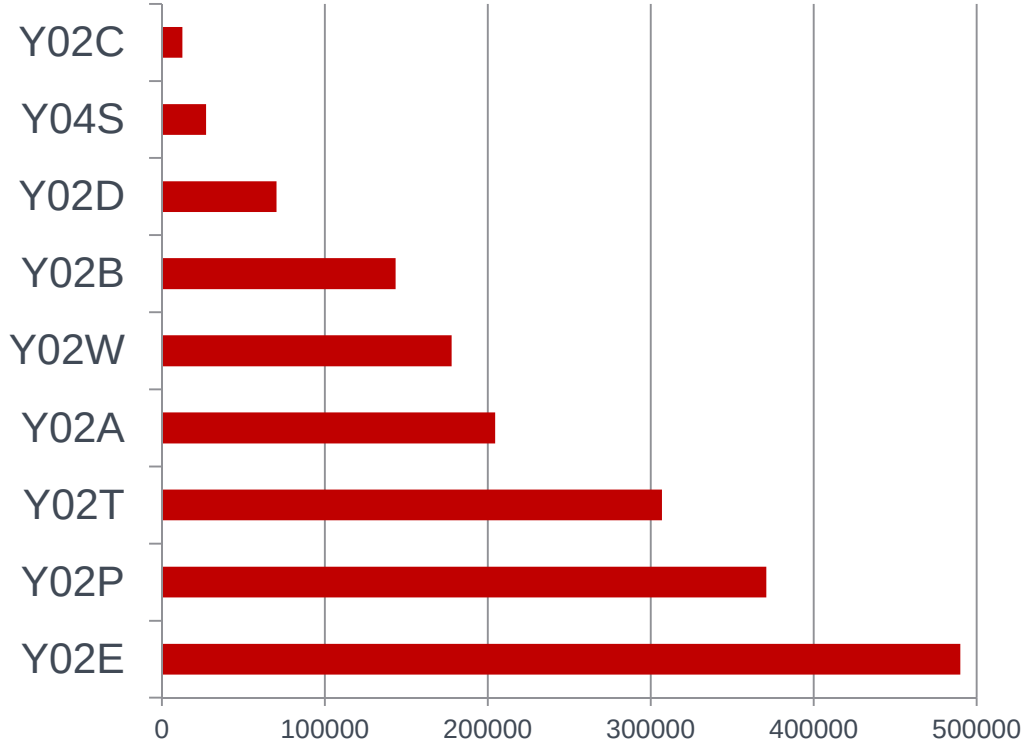
Y02W (Waste and waste water)

Y02A (Adaptation to climate change)



Y02D (Reduction of energy use in ICT)

Wealth of technical information

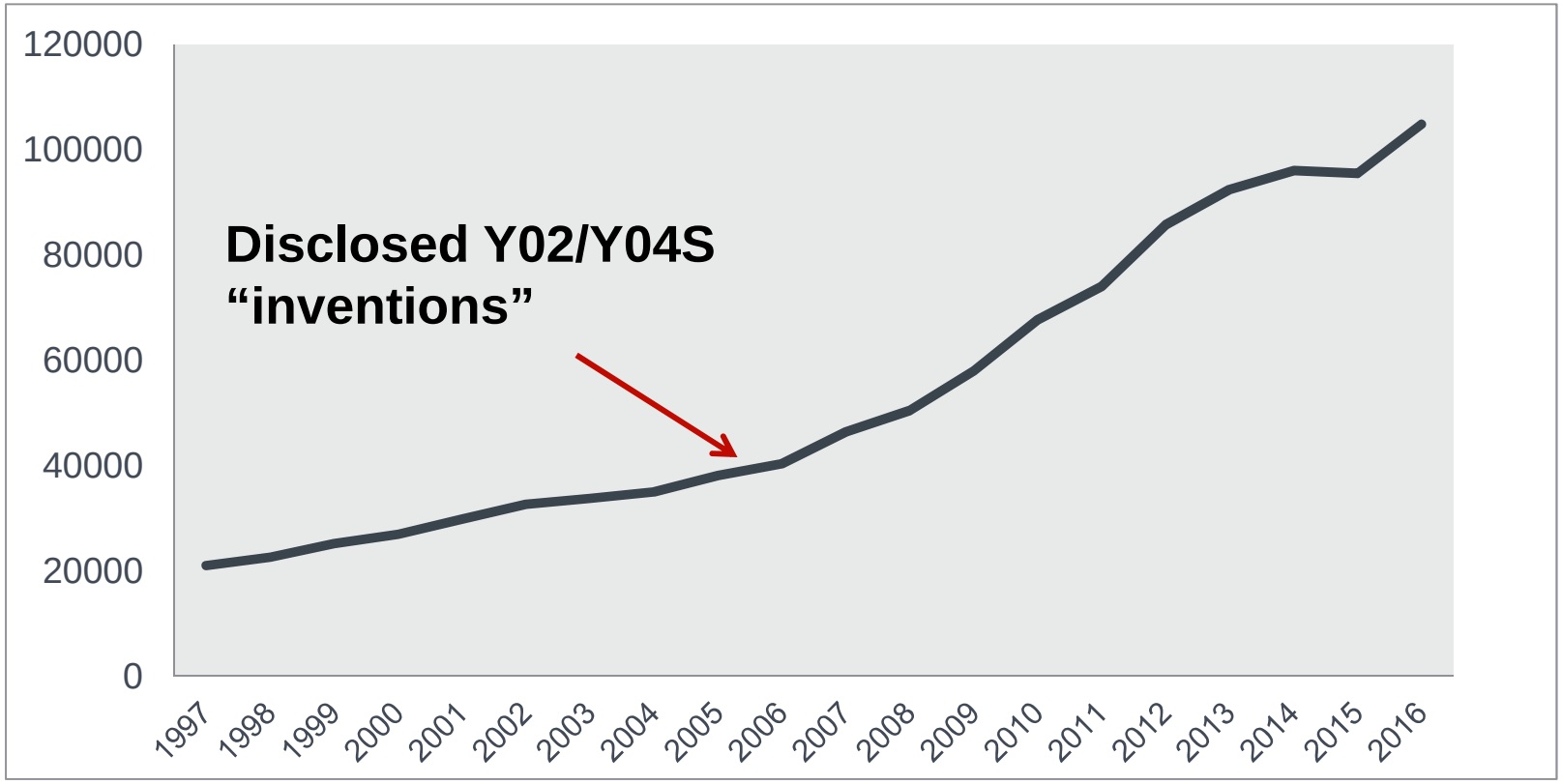


Almost **1.6 million published patent families**, i.e. disclosed inventions!

Representing **3.7% of all published patent families**.

Source: own calculations based on PATSTAT 01/2018. DOCDB family concept was used.

Information on inventive activity



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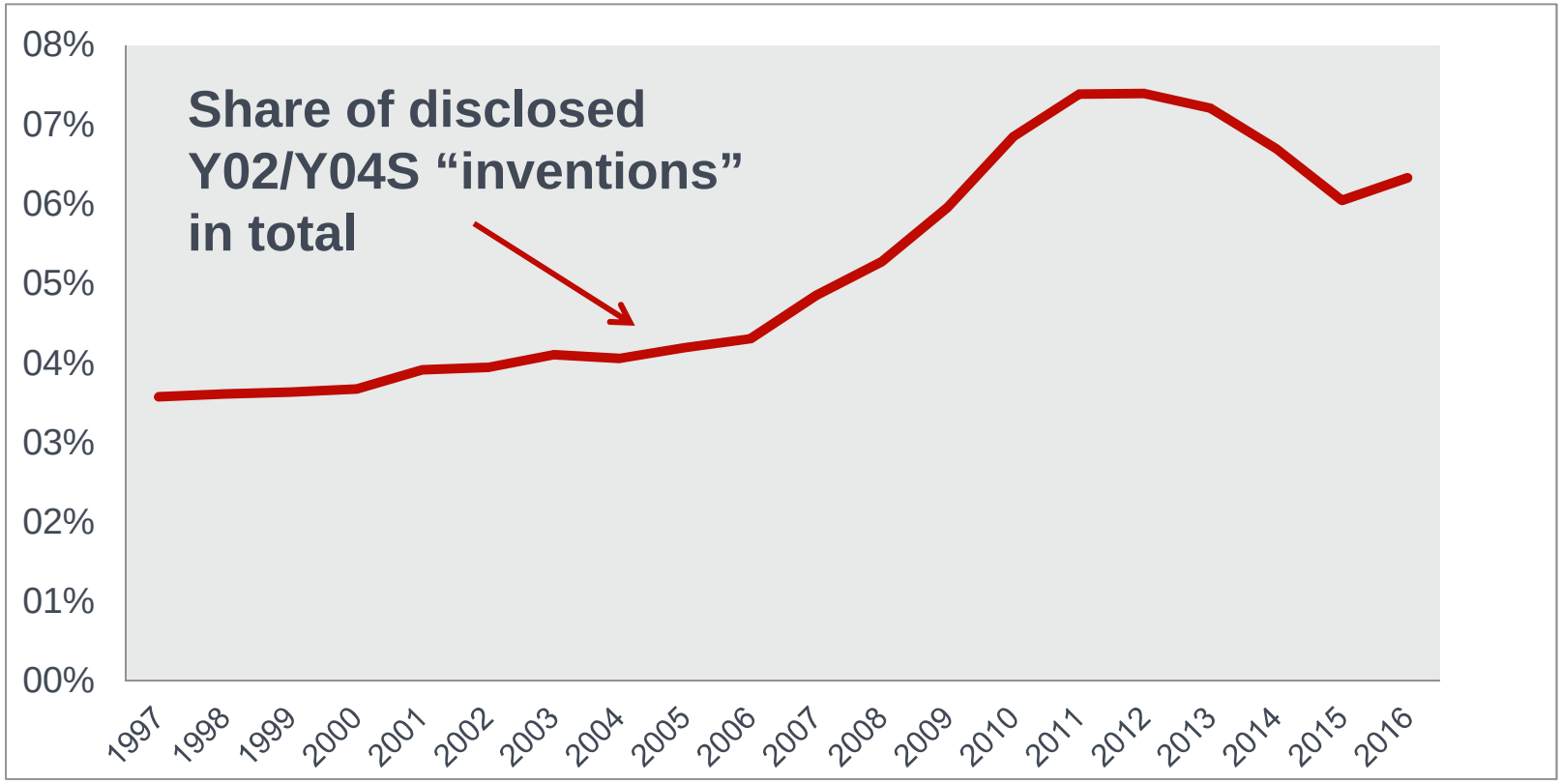
Information on inventive activity



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Providing evidence: Patents and technology transfer

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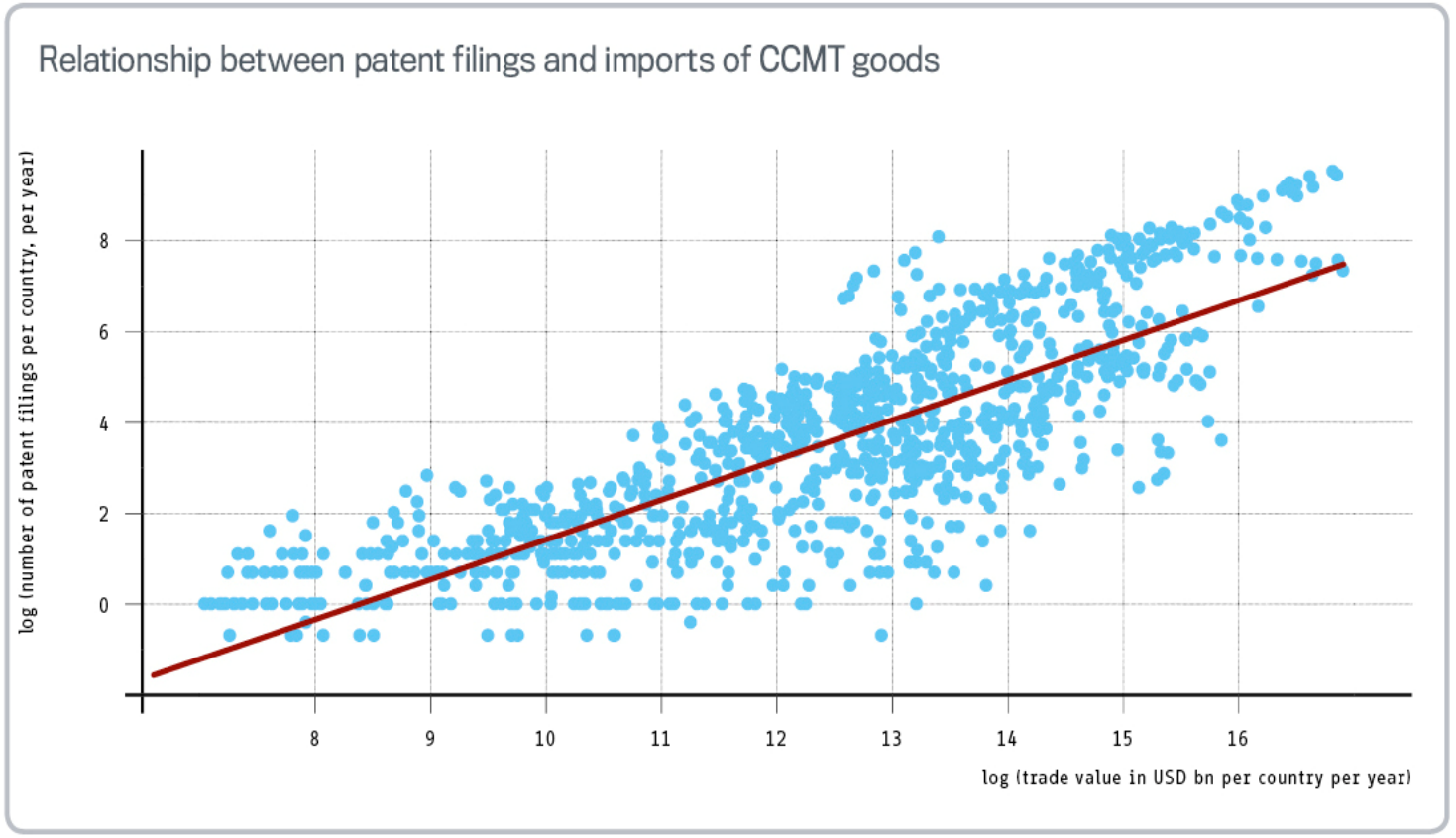
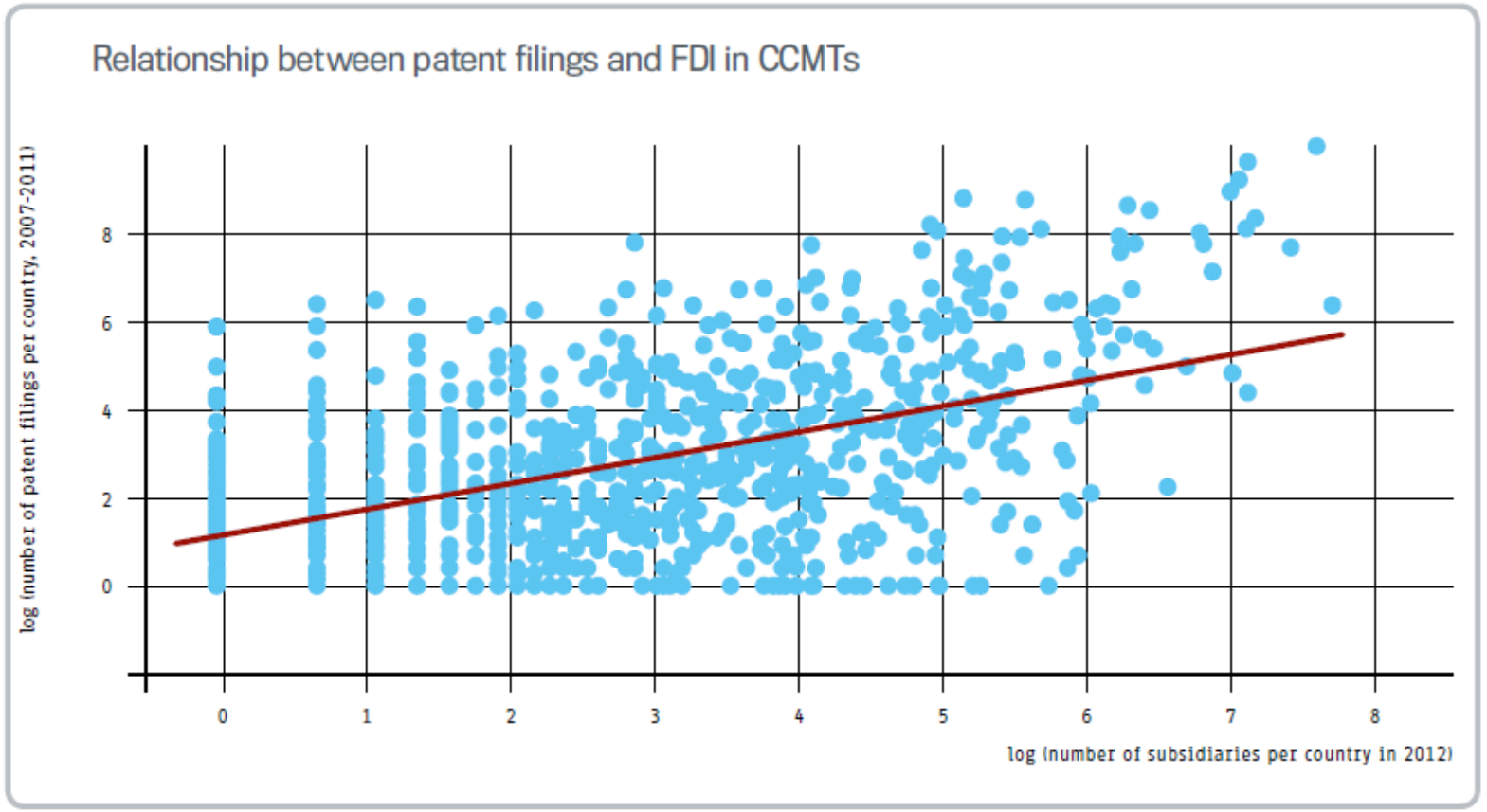


www.epo.org/climate-europe

Providing evidence: Patents and technology transfer



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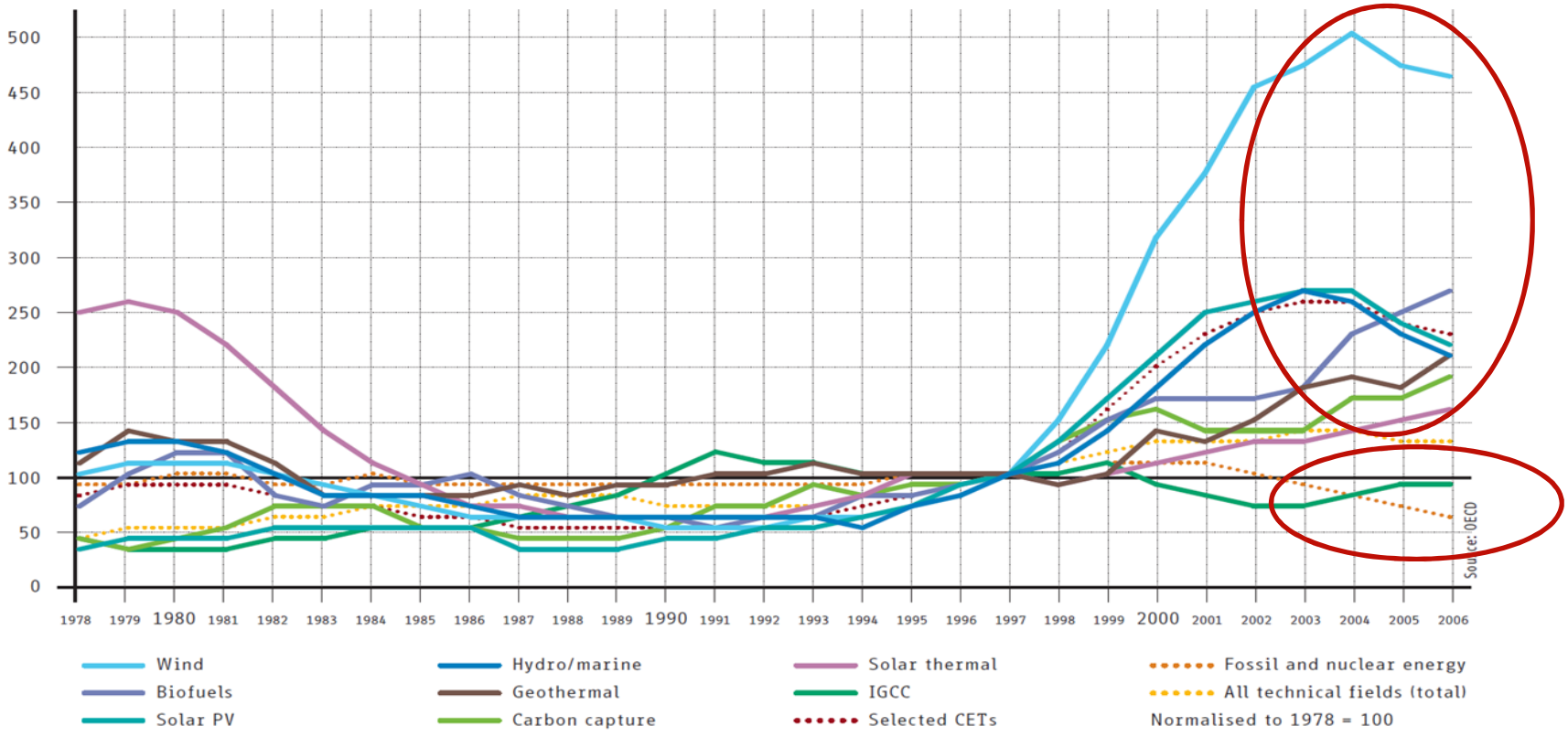
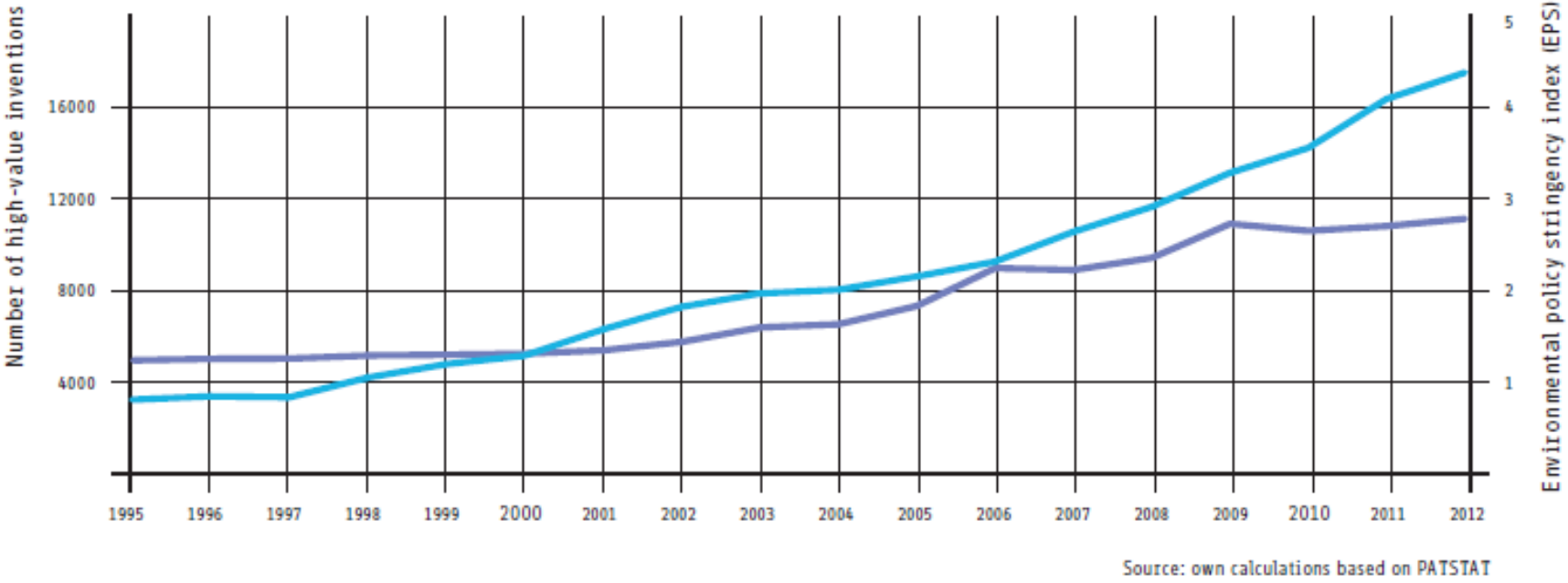
Providing evidence: “Kyoto Protocol effect”



Providing evidence: Climate policy and CCMT



The stringency index was developed by the OECD (Botta, E. and T. Kocuk (2014): Measuring Environmental Policy Stringency in OECD Countries: A Composite Index Approach) and is available for all OECD countries for the period 1990-2012.

www.epo.org/climate-europe

Performance of CCMT-intensive industries in the EU

Economic indicator	Contribution of CCMT-intensive industries	
	Share	Value
EU employment (direct)	**1.2%**	2.6 million
EU GDP	**2.1%**	282 billion €
EU trade		
- % total EU imports	**11.1%**	
- % total EU exports	**17.4%**	
Trade surplus		+ 103 billion €

Source: http://documents.epo.org/projects/babylon/eponet.nsf/0/419858BEA3CFDD08C12580560035B7B0/$File/ipr_intensive_industries_report_en.pdf

Thank you for your attention!

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