

Overview on the current state of the renewable energy sector

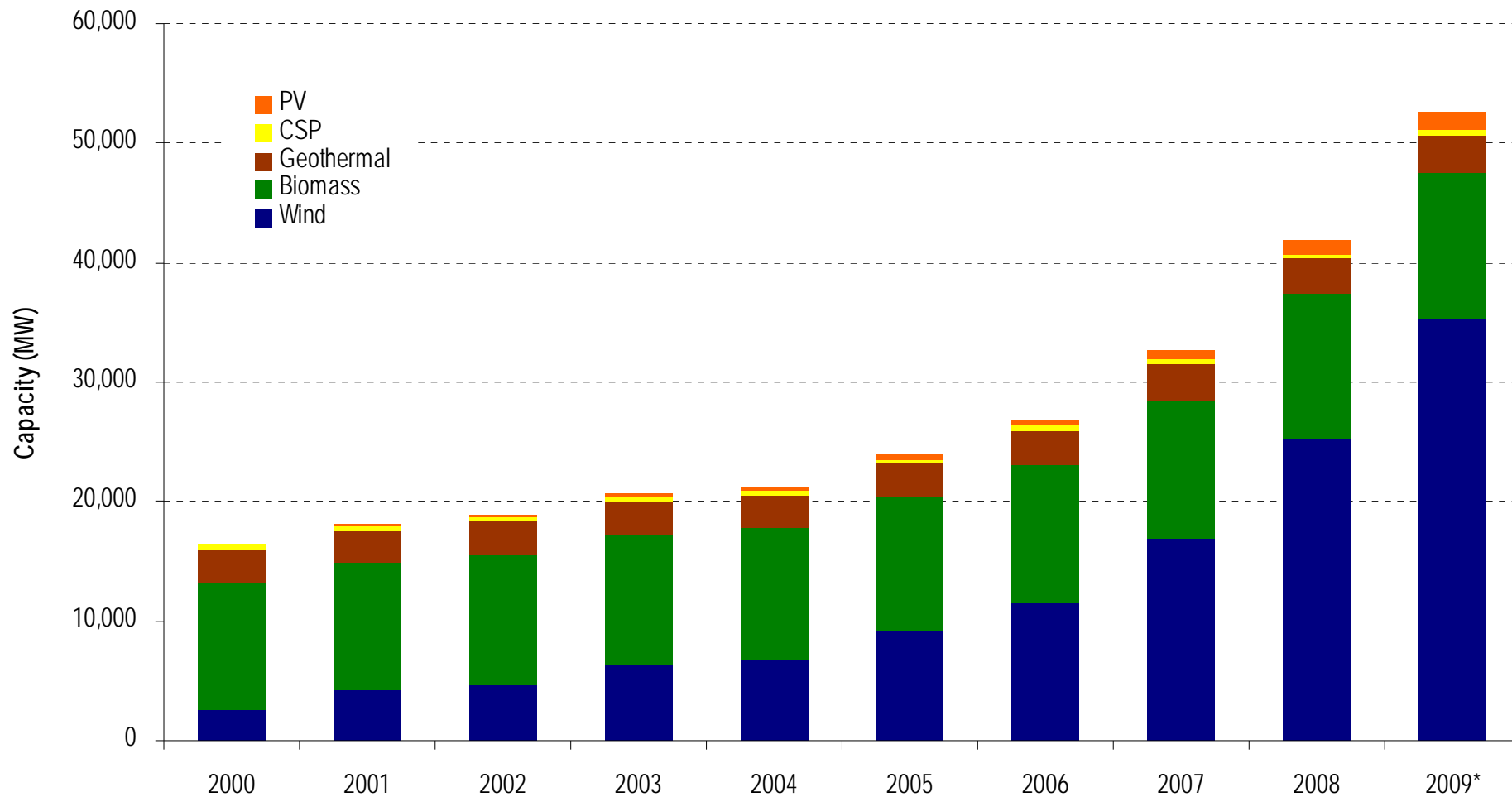
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International Energy Agency**

***CPI-ICCG International Workshop
"The Challenge of Financing Low-Carbon Growth"
Venezia, Italy, 15-16 April 2010***



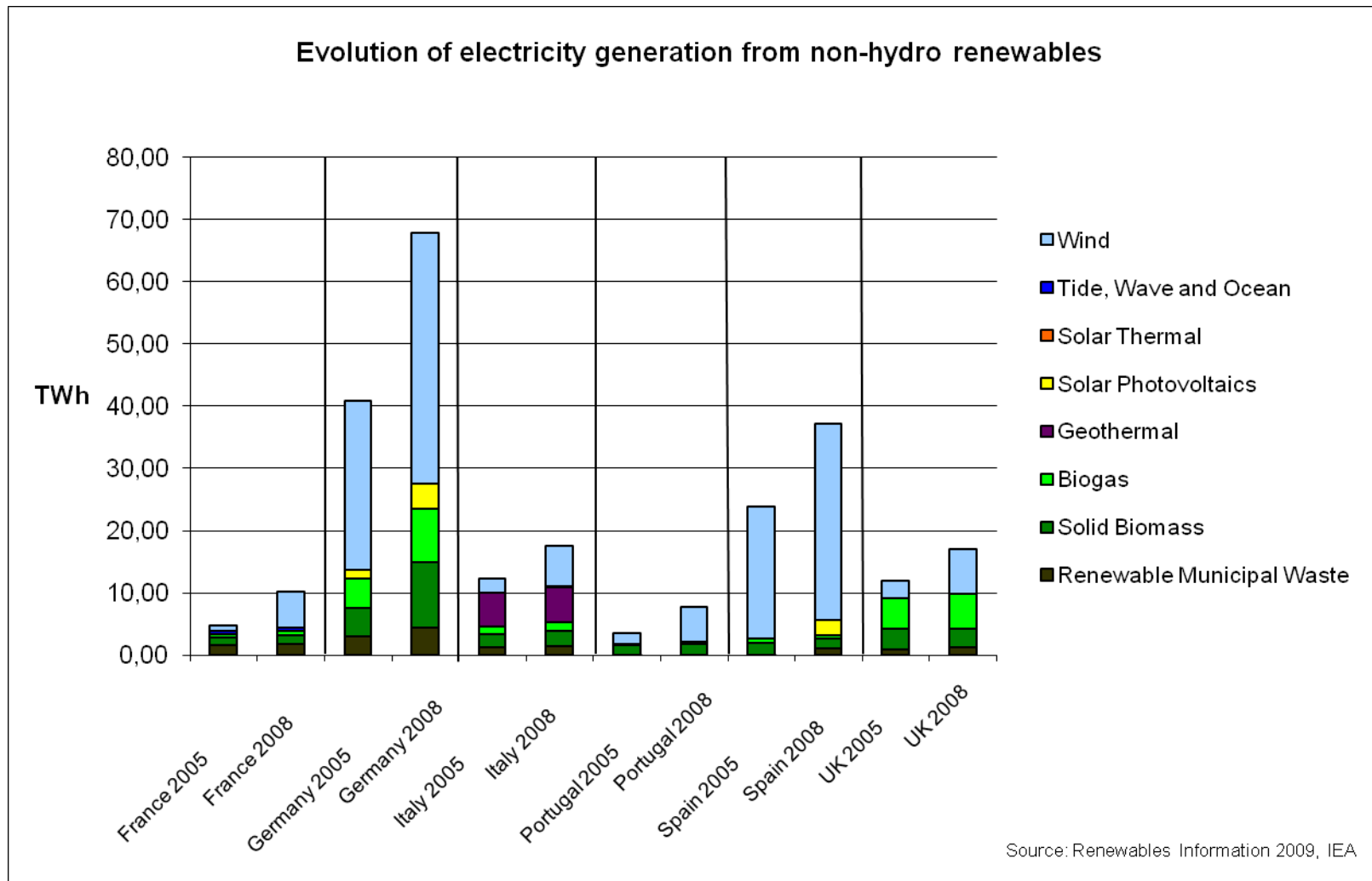
U.S. Renewable Electricity Total Installed Capacity 2000-2009



* Preliminary
Sources: EIA; American Wind Energy Association; Geothermal Energy Association; GTM Research

Recent trends in selected countries

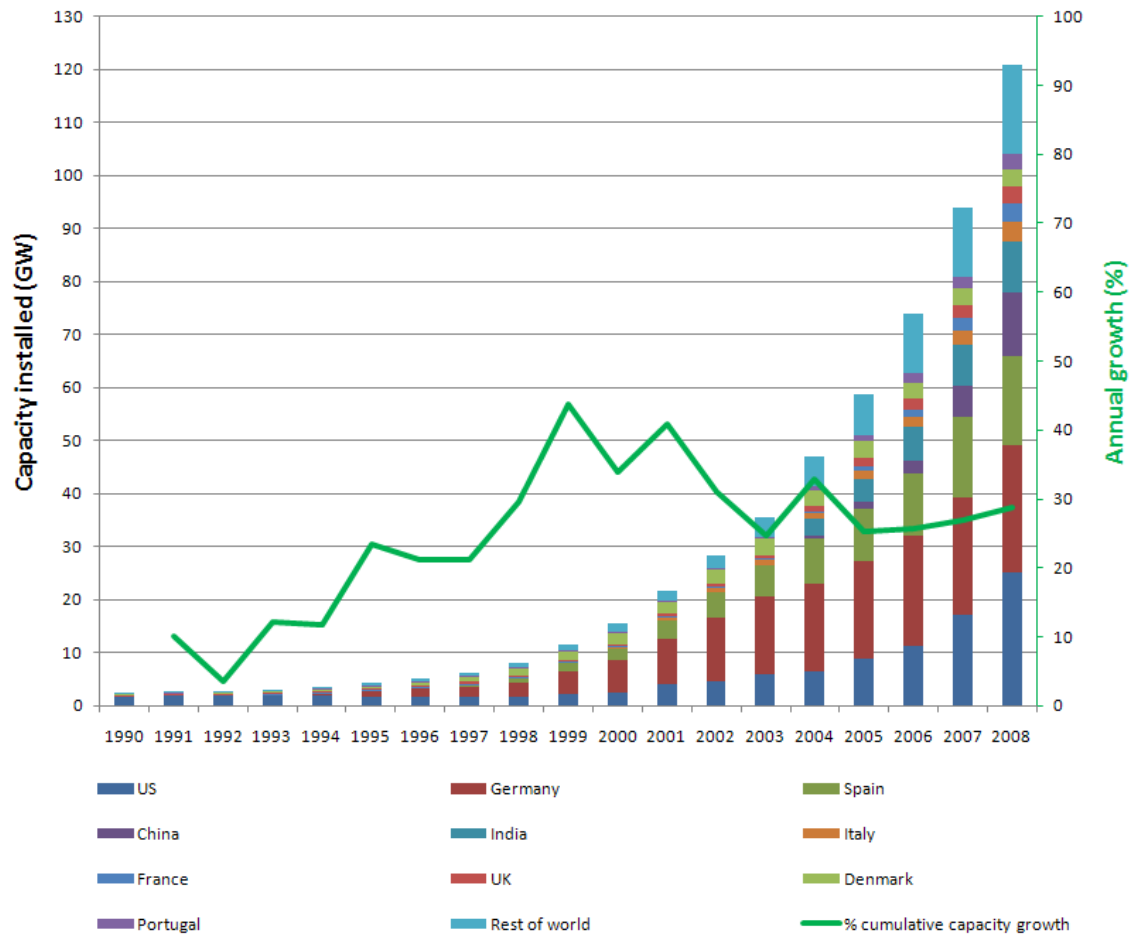
Non-Hydro Renewable Electricity



[Source: IEA 2009

Data: IEA *Deploying Renewables and Renewables Information, 2009*]

Wind installed capacity

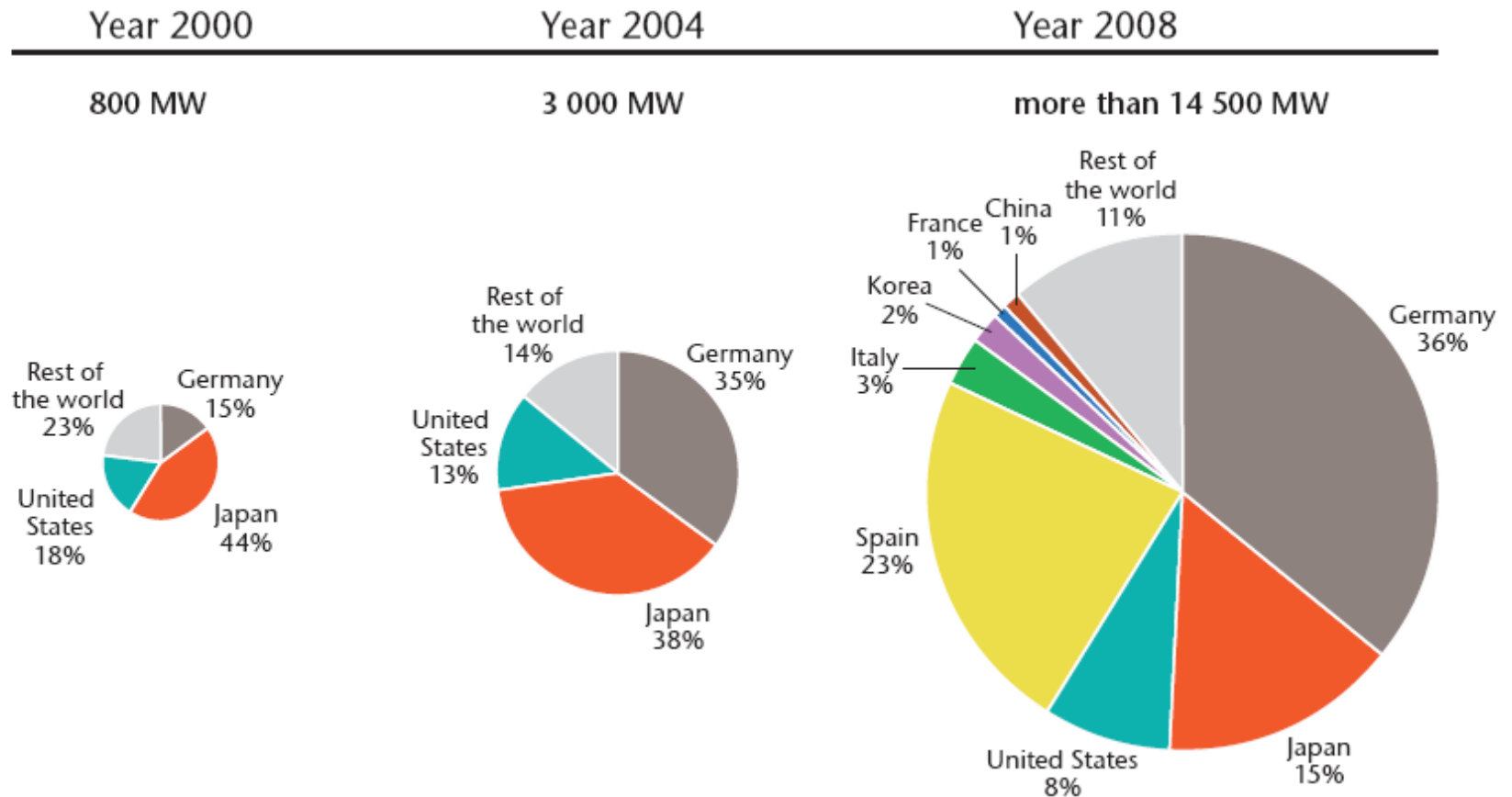


2009:
+ 12 GW China
+ 10 GW US
Largest share new
installations in EU

Source: IEA Wind Roadmap, 2009

PV installed capacity

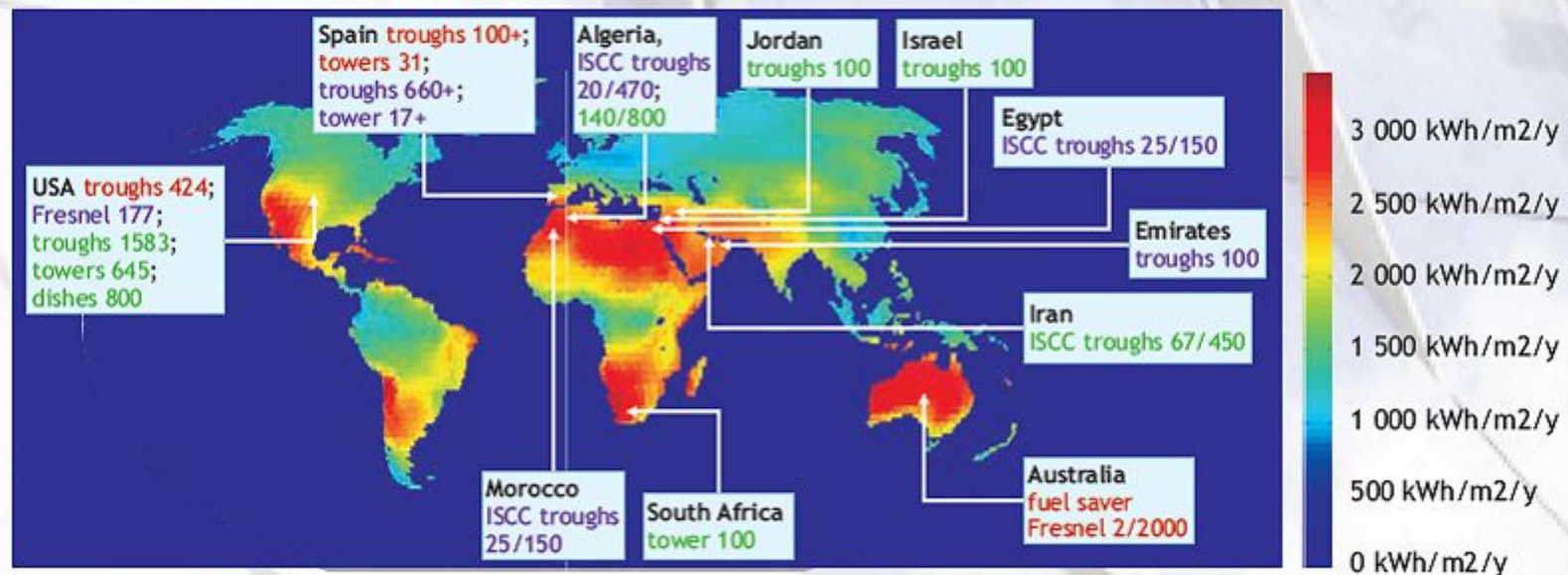
2009 estimate:
+7 GW worldwide



Source: IEA PV Roadmap, May 2010

Concentrating Solar Power

Figure 1: Direct Normal Insolation in kWh/m².y and on-going projects Breyer & Knies 2009, after DLR-ISIS, plus IEA information.

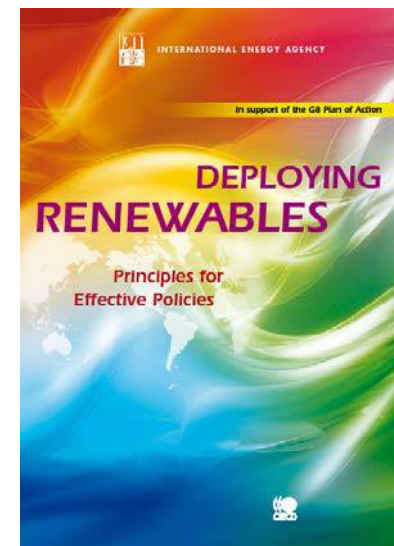


Legend: **existing capacities**; capacities under construction; **announced capacities**; xx: capacity in MWe. +: indicates large storage capacities (the capacity of the power plant is larger than the electrical capacity indicated); xx/yy: for Integrated Solar Combined Cycle or fuel saver systems, xx indicates the solar capacity, yy indicates the overall capacity.

Global Renewable Energy Markets and Policies Programme (GREMPP)

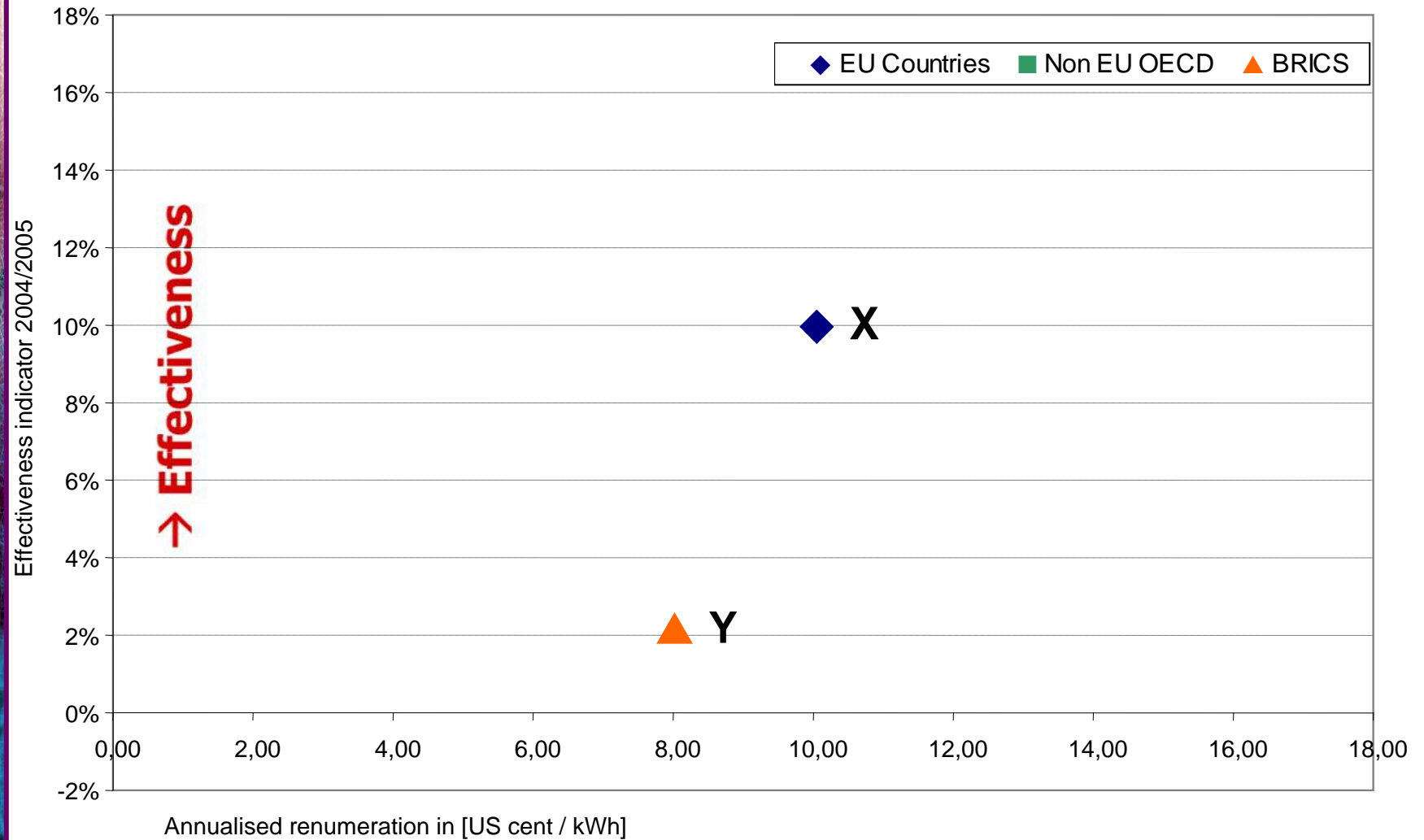
- Comparative assessment of **effectiveness** and **efficiency** of renewables support policies in **OECD** countries plus **Brazil, Russia, India, China, South Africa** (BRICS)
- Chosen policy effectiveness indicator on a yearly basis:

Incremental RE generation in a given year
Remaining additional realisable potential
(by 2020)



Effectiveness & Efficiency

Wind On-shore 2005 (OECD & BRICS)



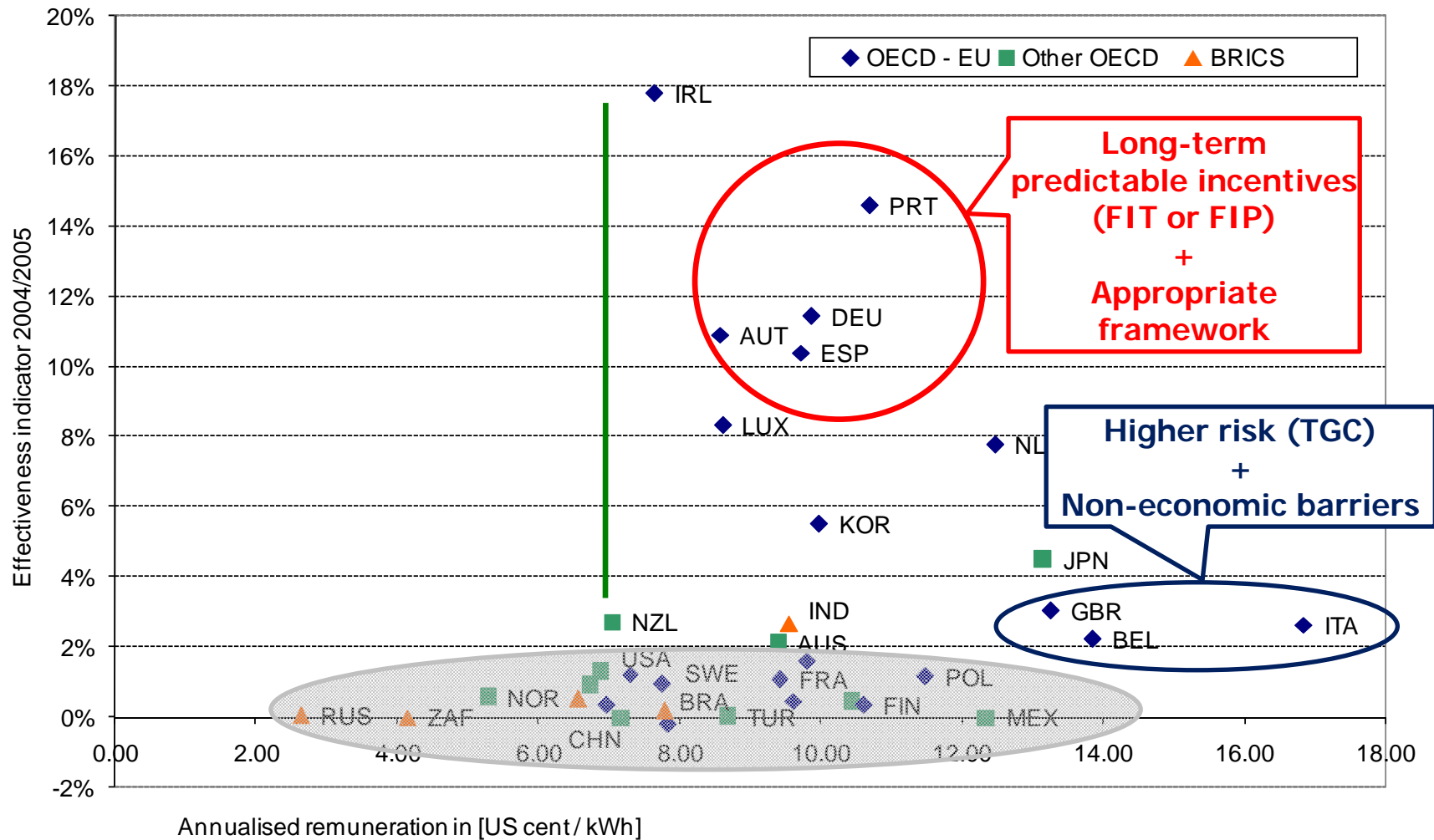
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← **Efficiency**

Source: IEA & Fh-ISI, 2008

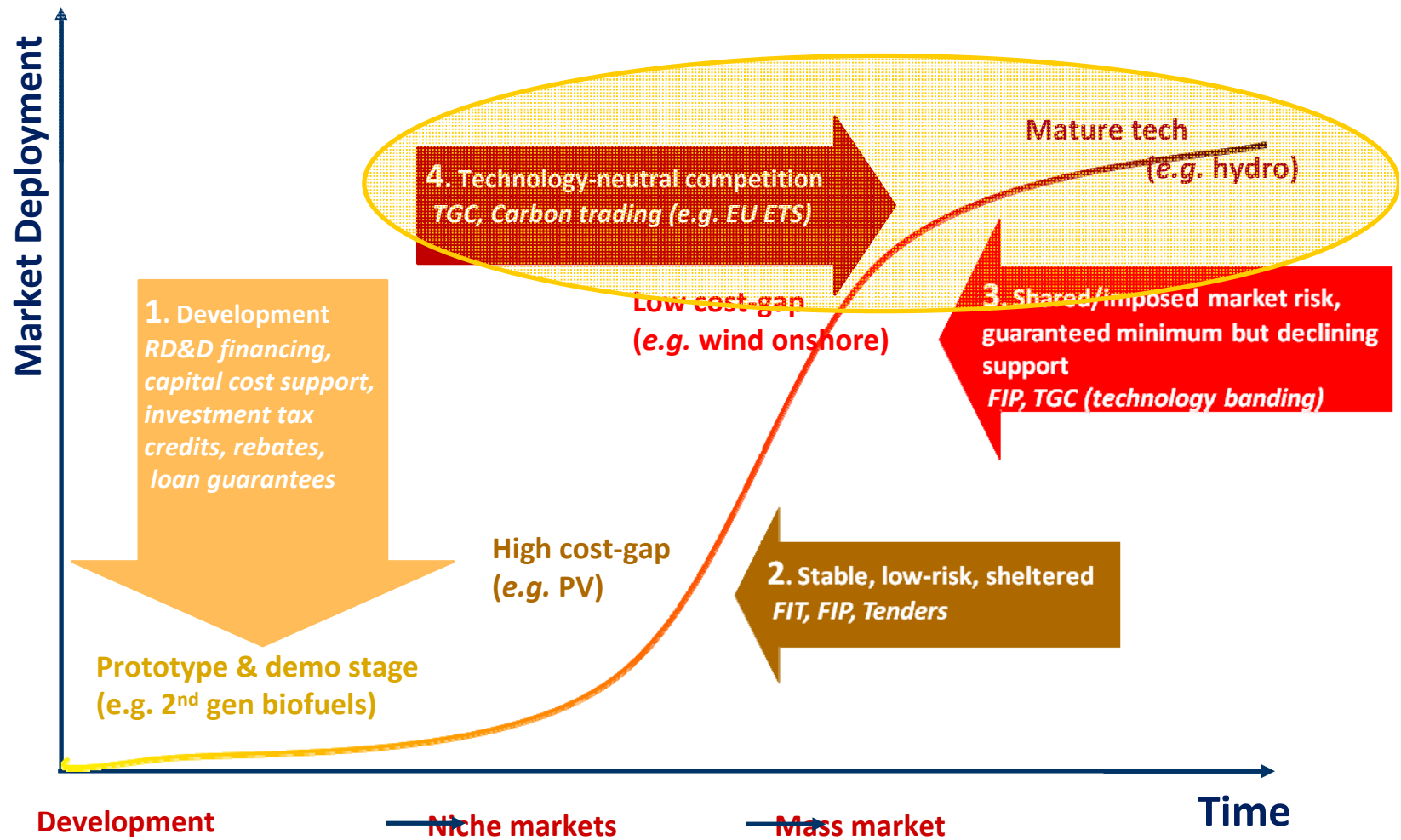
Effectiveness & Efficiency Wind On-shore 2005 (OECD & BRICS)



Key Principles for Effective Renewable Energy Policies

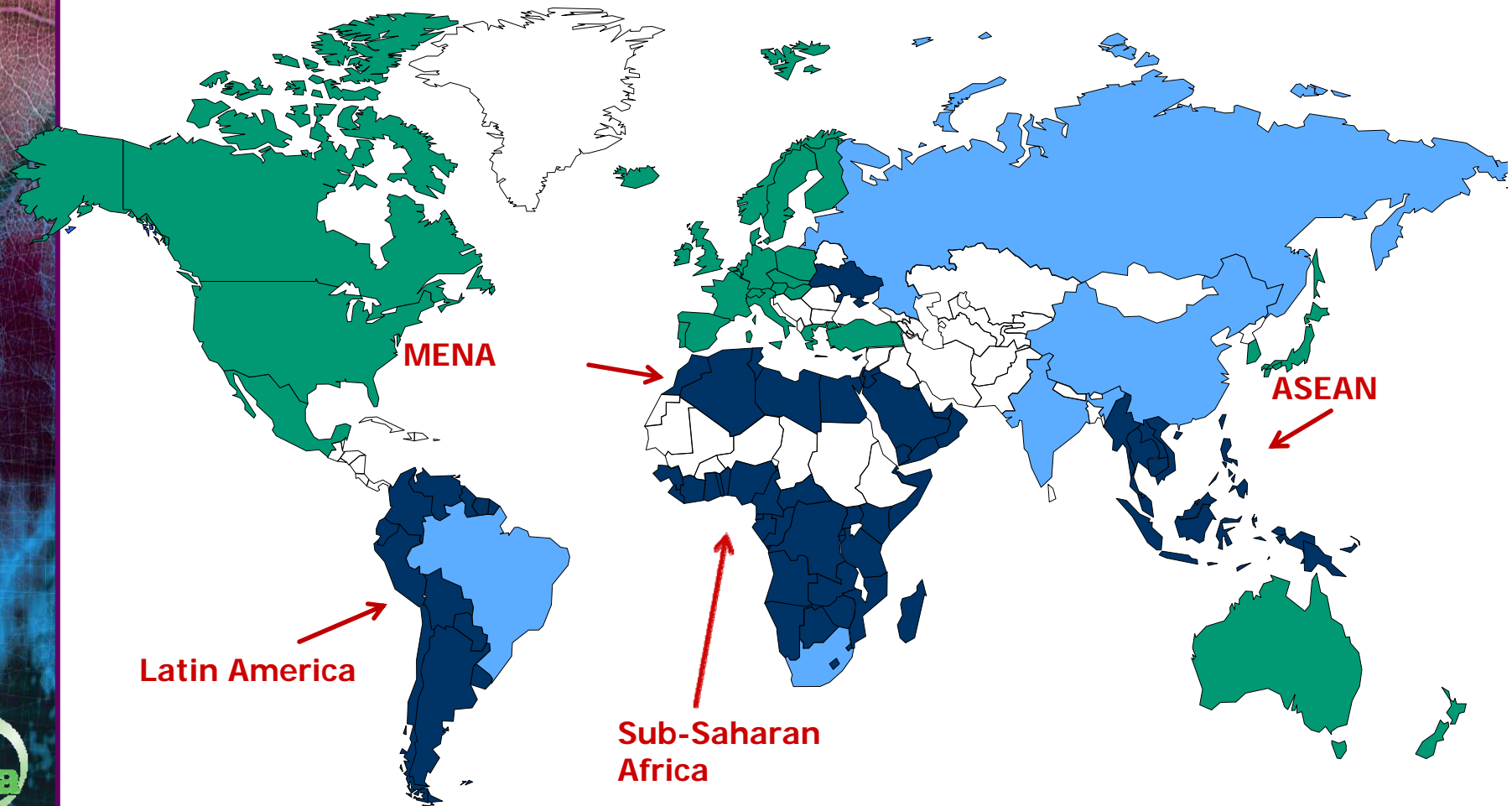
1. **Remove non-economic barriers** to improve market functioning
 2. Establish **predictable** support framework - to attract investments
 3. Set up **transitional** incentives **decreasing over time** – to foster and monitor technological innovation and move towards market competitiveness
 4. Ensure **specific support** in function of **technology maturity** to exploit potential of large RET range
 5. With increasing mass-scale RET penetration **impact on overall energy system** must be taken into account
- Continuity
Certainty

An integrated policy approach



GREMPP Phase Two: 2009-2010

- Update of *Deploying Renewables 2008* on OECD + BRICS
- Extension of geographical scope and analysis
- To be published by the end of 2010



Conclusions

- **Positive outlook** for renewable energy
 - Policies expanding in many countries
 - Impact of economic stimulus programmes
- **Regional and country differences**
 - Different risks, including policy risk
- Large-scale deployment of RE will require
 - Implementation of **effective and cost-efficient support policies** in an increasing number of countries
 - Invest in **infrastructure** and smart grids to address issue of integration
 - Ensure sustained support to **RD&D**

Links

- www.iea.org
- RE Publications
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- RE Policy Database
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