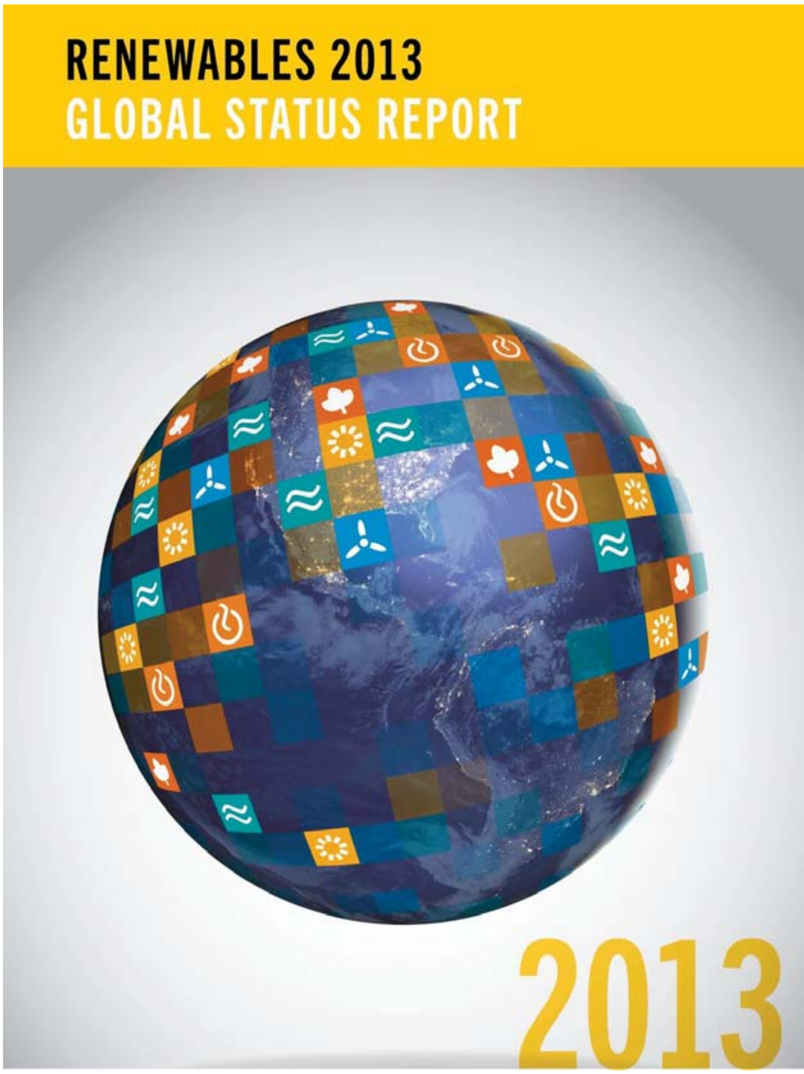


EEF.NGO/30/13
12 September 2013

ENGLISH only

Renewable Energy Status

Laura E. Williamson
Communication & Outreach Manager

OSCE: Concluding Meeting of 21st Economic and Environment Forum
SESSION II
Prague, 11-13th September 2013

www.ren21.net

About REN21

A Multi-stakeholder Policy Network grouping

Science & Academia:
IIASA, ISES, SANEDI, TERI

NGOs:
CURES, GFSE, Greenpeace, ICLEI, ISEP, JREF, WCRE, WRI, WWF

International Organisations:
ADB, EC, GEF, IEA, IRENA, UNDP, UNEP, UNIDO, World Bank

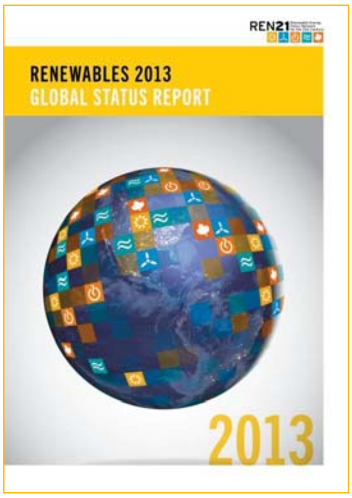
Industry Associations:
ACORE, ARE, CEC, CREIA, EREC, GWEC, IGA, IHA, WBA, WWEA

National Governments:
Brazil, Denmark Germany, India, Norway, Spain, Uganda, UAE, UK

www.ren21.net

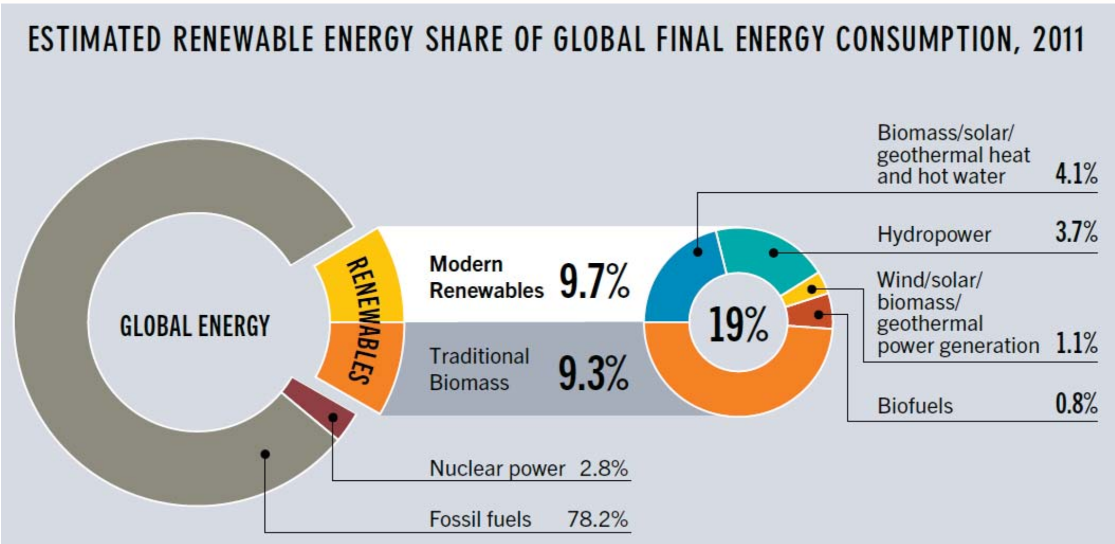
REN21 Renewables Global Status Report

- Launched along with UNEP's Global trends in RE investment.
- Team of over 500 Contributors, researchers & reviewers worldwide.
- The report features:
  - Global Market Overview.
  - Industry Trends.
  - Policy Landscape.
  - Rural Renewable Energy.
- All renewable energy technologies.
- Sectors: power, heating/cooling, transport.
- New elements in 2013:
  - Feature on system transformation.



www.ren21.net/gsr

Renewable Energy in the World



Source: REN21 Renewables 2013 Global Status Report

- RE supplied an estimated **19%** of **global final energy consumption** in 2011.
- **UN Secretary General's goal : doubling the share of renewable energy in the global energy mix by 2030** (from 18% in base year2010).

Top 5 RE champions

ANNUAL INVESTMENT/ADDITIONS/PRODUCTION IN 2012

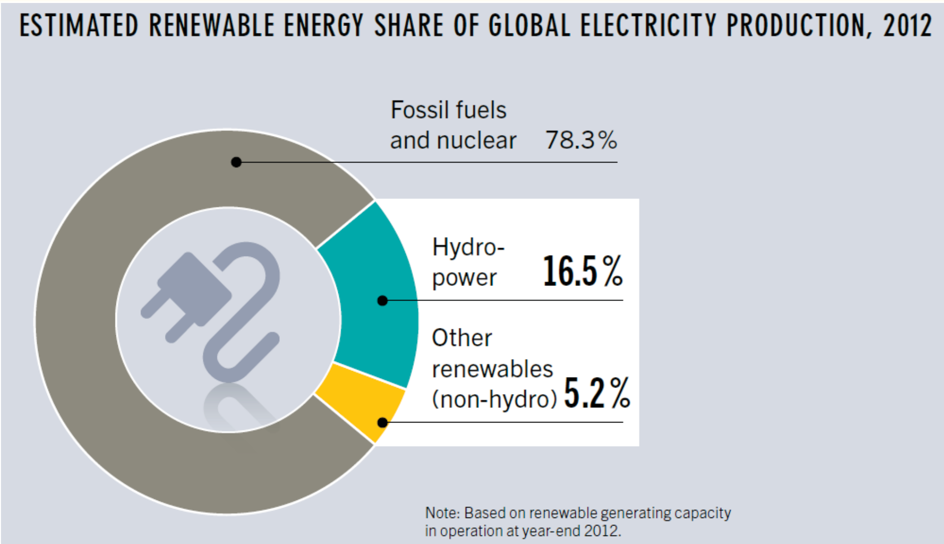
	New capacity investment	Hydropower capacity	Solar PV capacity	Wind power capacity	Solar water collector (heating) capacity[1]	Biodiesel production	Ethanol production
1	China	China	Germany	United States	China	United States	United States
2	United States	Turkey	Italy	China	Turkey	Germany	Brazil
3	Germany	Brazil/Vietnam	China	Germany	Germany	Argentina	China
4	Japan	Russia	United States	India	India	Brazil	Canada
5	Italy	Canada	Japan	United Kingdom	Brazil	France	France

TOTAL CAPACITY AS OF END-2012

	Renewable power capacity (incl. hydro)	Renewable power capacity (not incl. hydro)	Renewable power capacity per capita (not Incl. hydro)[2]	Biopower capacity	Geothermal power capacity	Hydropower capacity	Concentrating solar thermal power (CSP) capacity
1	China	China	Germany	United States	United States	China	Spain
2	United States	United States	Sweden	Brazil	Philippines	Brazil	United States
3	Brazil	Germany	Spain	China	Indonesia	United States	Algeria
4	Canada	Spain	Italy	Germany	Mexico	Canada	Egypt/Morocco
5	Germany	Italy	Canada	Sweden	Italy	Russia	Australia

Source: REN21 Renewables 2013 Global Status Report

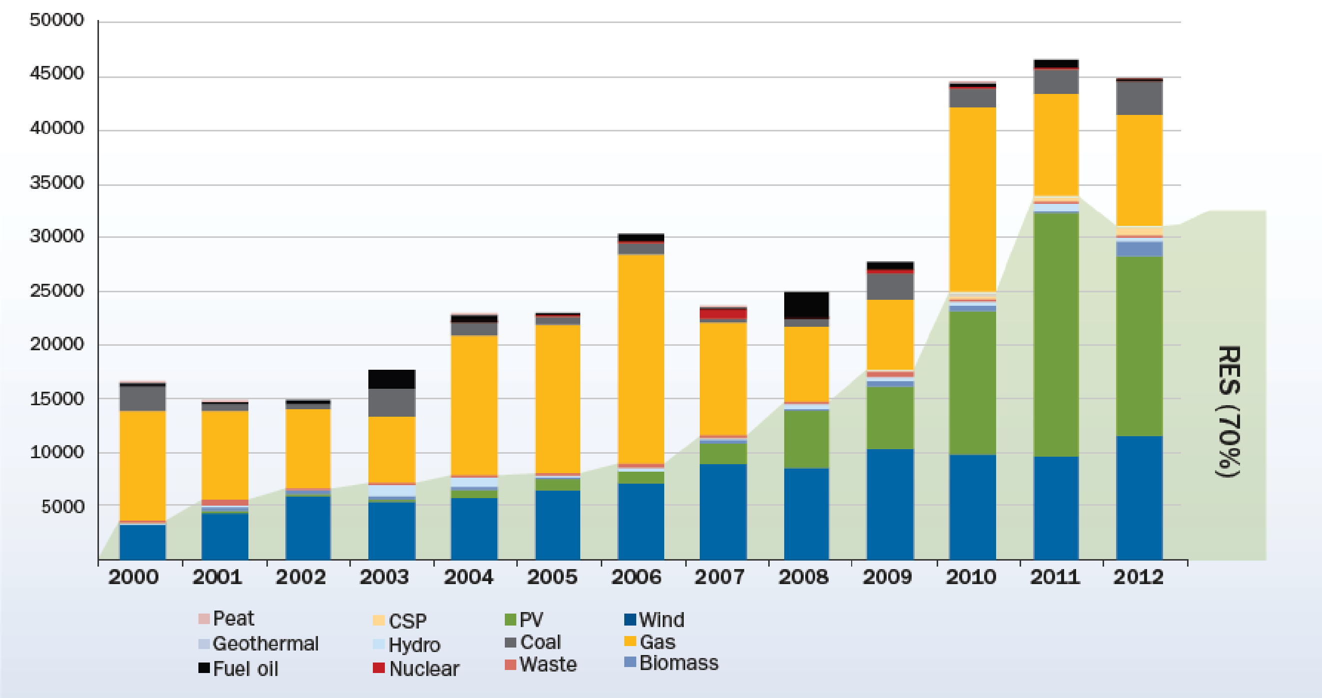
Global Market Overview – Power Markets



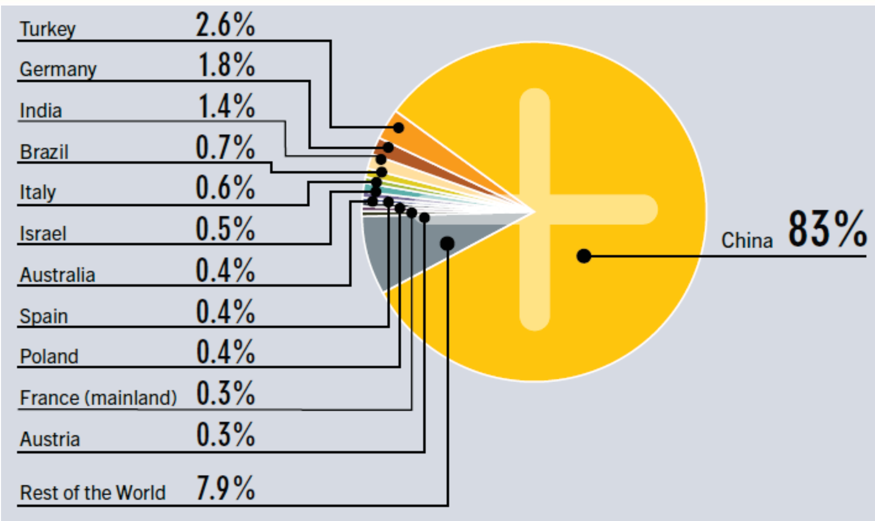
Source: REN21 Renewables 2013 Global Status Report

- Renewable energy comprise more than **26%** of **global power generation capacity.**
- **21.7% of global electricity** is produced from renewable energy.
- Renewables accounted for just over half of the estimated 280GW of new electric capacity installed in 2012.

New annual power capacity added in EU in 2012: 70 % renewable based



Global Market Overview – Heating & Cooling



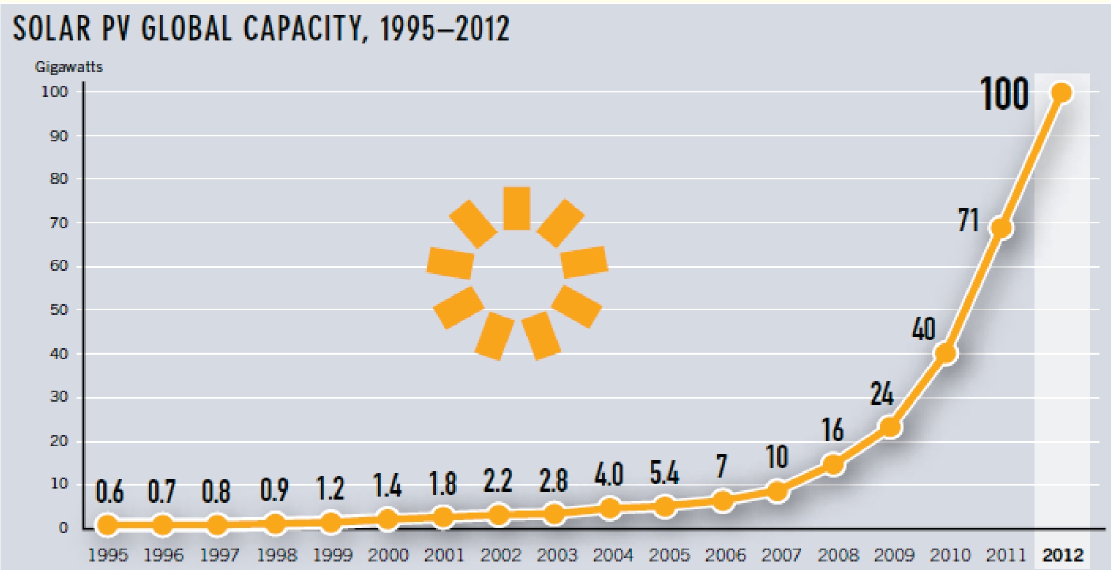
Source: REN21 Renewables 2013 Global Status Report

- By the end of 2012 solar thermal capacity reached an estimated 282 GWth.
- **Europe** and China account for about 90% of world market.
- Growing trend to use solar resources to generate process heat for industry.

Global Market Overview

- **Heating and Cooling**
  - Transition towards the use of larger systems, increasing use of CHP, for district schemes and industrial purposes.
  - Solar collectors are used in more than 56 countries for water (and increasingly for space) heating.
- **Transport**
  - RE used in the form of liquid and gaseous biofuels, electricity and renewably produced hydrogen for fuel cell vehicles.
  - Liquid biofuels provided about 3,4 % of global road transport fuels in 2012.
  - Electric transport is being tied directly with renewable energy through policy directives particularly at local level.

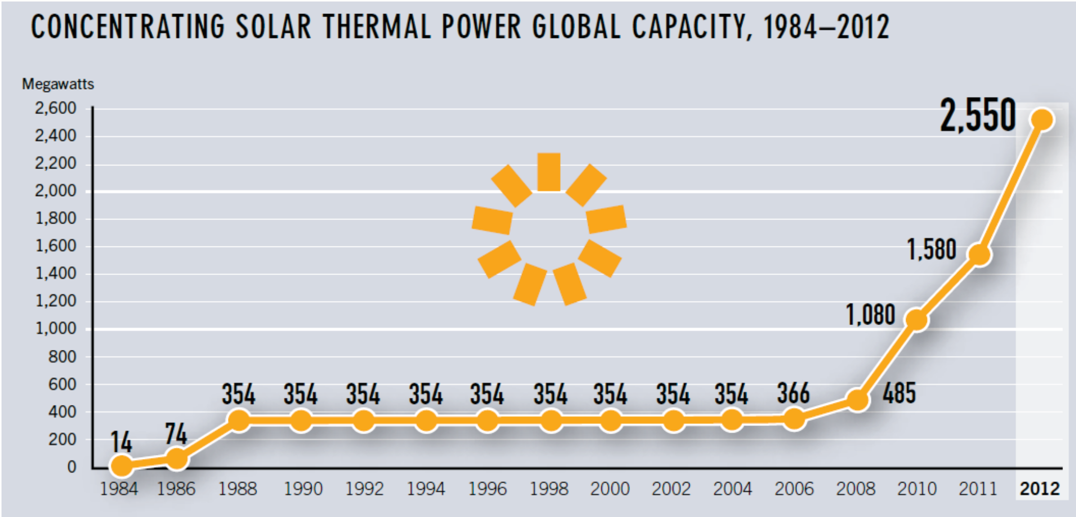
Solar Photovoltaics (PV)



- Total global operating capacity of **solar PV reached the 100 GW milestone**.
- Prices of solar PV modules fell by more than 30 % in 2012.

- Europe again dominated the market, **adding 16.9 GW** and accounting for about **57% of newly installed capacity**, to end 2012 with **70 GW in operation.**

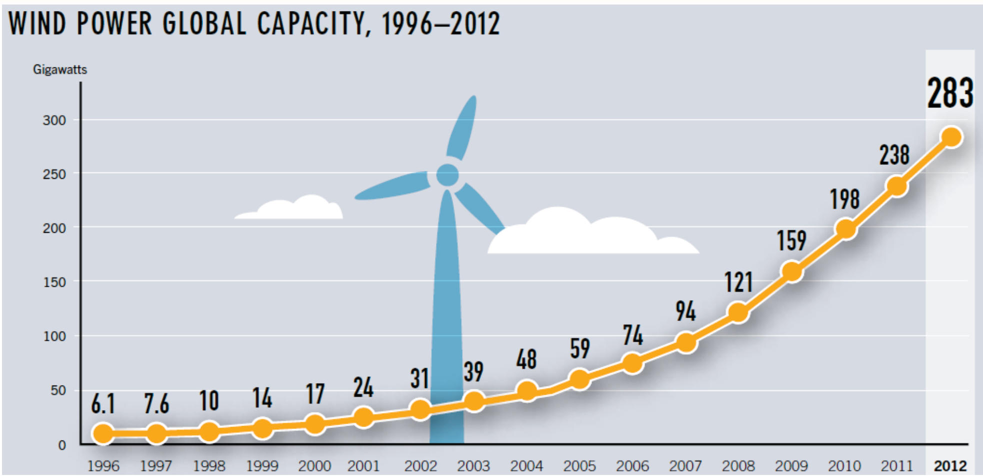
Concentrating Solar Thermal Power (CSP)



Source: REN21 Renewables 2013 Global Status Report

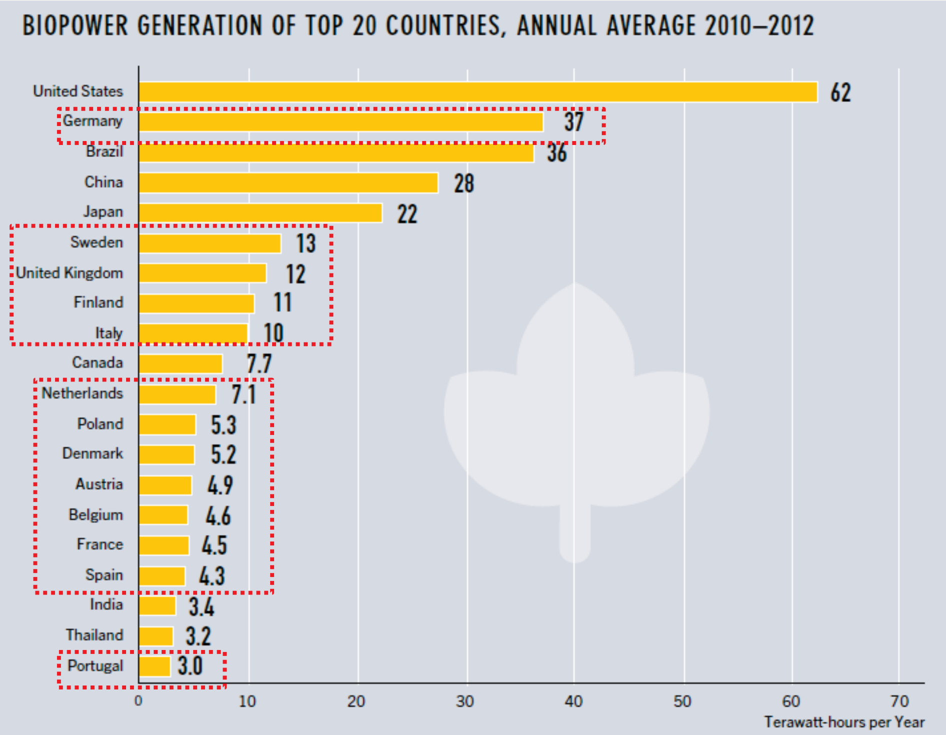
- **Interest in CSP is on the rise**, particularly in developing countries, with investment spreading across Africa, the Middle East, Asia, and Latin America.
- **Spain** continued to lead the world for both deployment and total capacity of CSP, adding 950 MW to increase operating capacity by 95% to a total of 1,950 MW.

Wind Power



- Almost 45GW of wind power capacity began operation, increasing global wind capacity 19% to 283 GW.
- The European Union **passed the 100 GW milestone** in 2012, adding a record 11.9 GW of wind capacity for a total exceeding 106 GW.
- **Wind accounts for 11.4% of total EU electric capacity.**

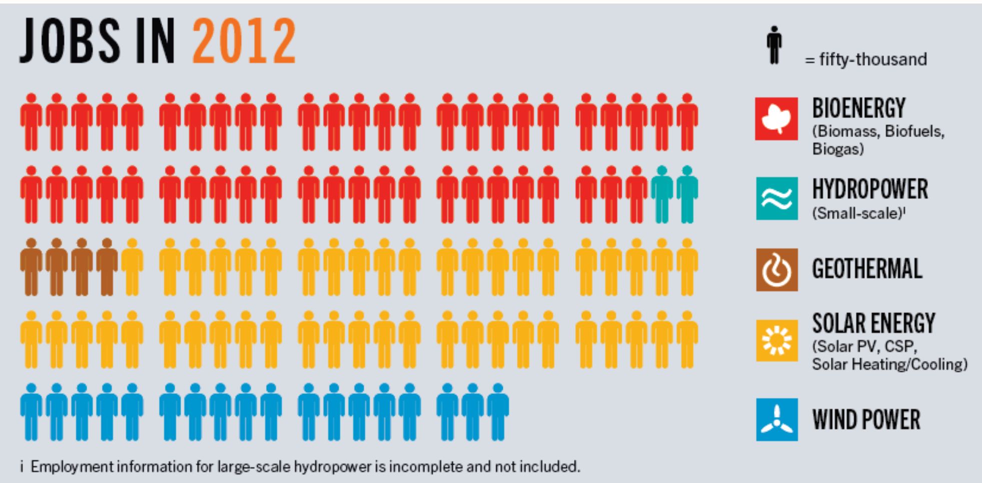
Bioenergy



Source: REN21 Renewables 2013 Global Status Report

- **Use of biomass** in the heat, power and transport sectors **increased 2–3% to approximately 55 EJ**.
- **Bio-power capacity** was up 12% to nearly 83 GW.
- In **Europe**, bio-power capacity increased by almost 2% to **31.4 GW**, generating around **136 TWh**. Mainly by biogas in CHP plants, and with renewable municipal solid waste.

Renewable Energy and Jobs

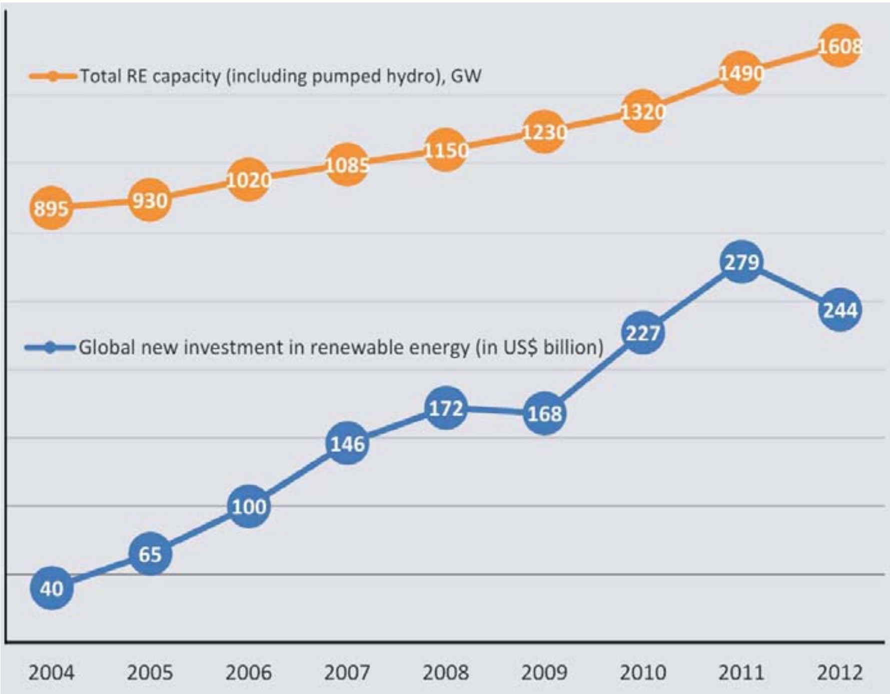


Data source: IRENA, Renewable Energy and Jobs 2013

- Worldwide renewable energy employment continues to increase.
- An estimated **5.7 million people** work in the renewable energy sector.
- The bulk of employment remains concentrated in the **EU,** Brazil, China, India, and the United States.

Global New Investment in Renewable Energy

REN21 Renewable Energy Policy Network for the 21st Century

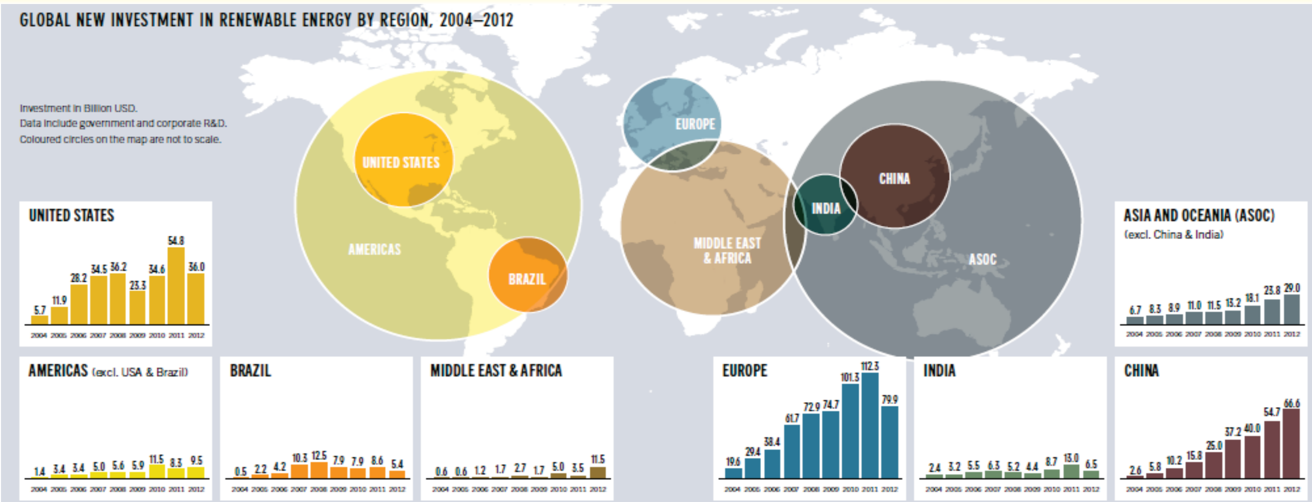


Data sources: Renewables 2013 Global Status Report, UNEP FS/ BNEF Global Trends in Renewable Energy Investment 2013

- Global new investment in renewable power went down 12% from the previous year's record (still the second highest ever).
- **Installed capacity, which continued to grow due to falling technology costs.**
- **Europe** experienced a **reduction in subsidies** for wind and solar project development but it remained the largest centre for R&D.

Investment Flows

REN21 Renewable Energy Policy Network for the 21st Century



Data Source: UNEP FS/ BNEF Global Trends in Renewable Energy Investment 2013

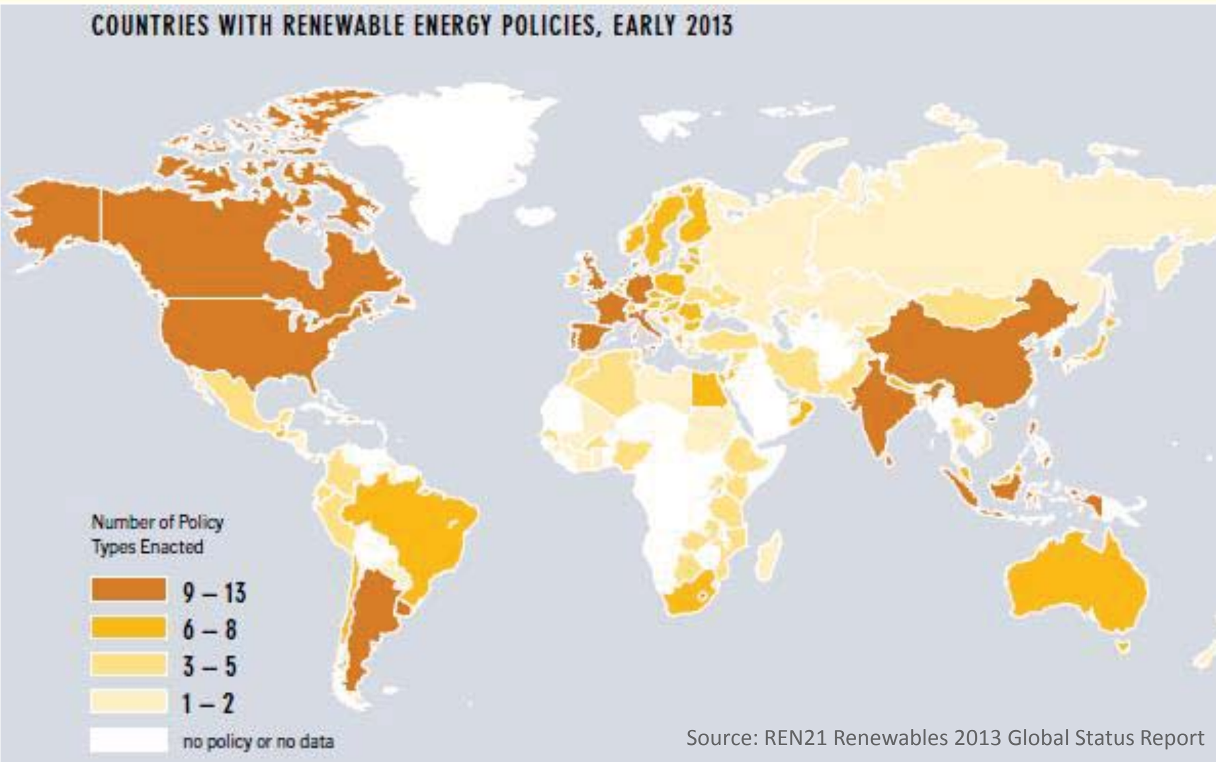
- Dramatic shift in the balance of new investment activity between developed and developing economies.
- **Developing countries** reached USD 112 billion, representing 46% of the world total; this was up from 34% in 2011, and continued an unbroken eight-year growth trend.
- **Developed economies** fell 29% to USD 132 billion, the lowest level since 2009.

Policy Landscape

THE NUMBER OF COUNTRIES WITH RENEWABLE TARGETS MORE THAN DOUBLED BETWEEN 2005 AND 2012. A LARGE NUMBER OF CITY AND LOCAL GOVERNMENTS ARE ALSO PROMOTING RENEWABLE ENERGY.

- At least **138 countries had renewable energy targets by the end of 2012**.
- Most policies to support renewable energy target the power sector, with Feed-in tariffs (FITs) and renewable portfolio standards (RPS) used most frequently.
- Policymakers are increasingly aware of the potential national development impacts of renewable energy.
- GSR provides a comprehensive policy table giving an overview of applied instruments worldwide on a country-by-country basis.

Policy Map



Added-value of Renewables

- Decreased dependency on fossil fuel imports
- Decreased energy price volatility
- Increased resilience to climate change impacts: system diversification; decentralisation
- No nuclear risk
- Environmental benefits: CO_2 reduction; SO_x, NO_x reduction
- Local value added: job creation, industry development

REN21 Flagship Products & Activities

Keep informed: Subscribe to the REN21 Newsletter

www.ren21.net