

RENEWABLES 2013

GLOBAL STATUS REPORT



Global Renewable Energy Status

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CESC Webinar Africa
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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

Industry Associations:

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EREC, GWEC, IGA, IHA,
WBA, WWEA



International Organisations:

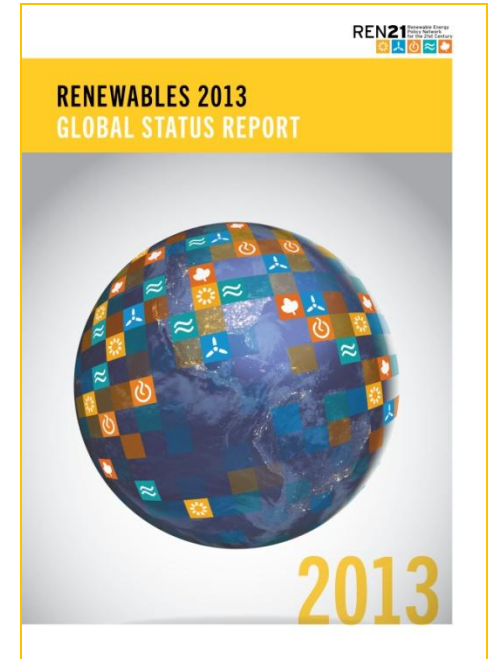
ADB, EC, GEF, IEA, IRENA,
UNDP, UNEP, UNIDO,
World Bank

National Governments:

Brazil, Denmark
Germany, India, Norway,
Spain, Uganda, UAE, UK

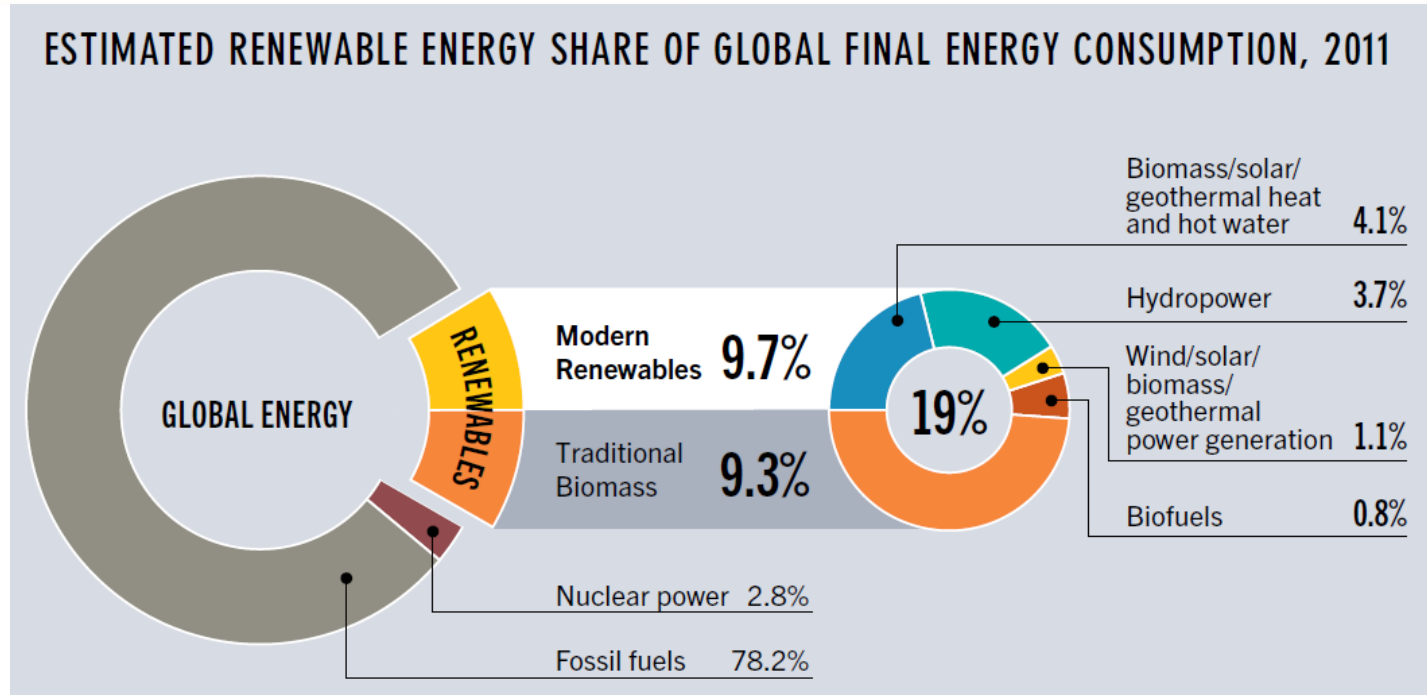
REN21 Renewables Global Status Report

- 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



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Renewable Energy in the World



Source: REN21 Renewables 2013 Global Status Report

- RE supplied an estimated **19%** of **global final energy consumption** in 2011.

Top 5 RE champions

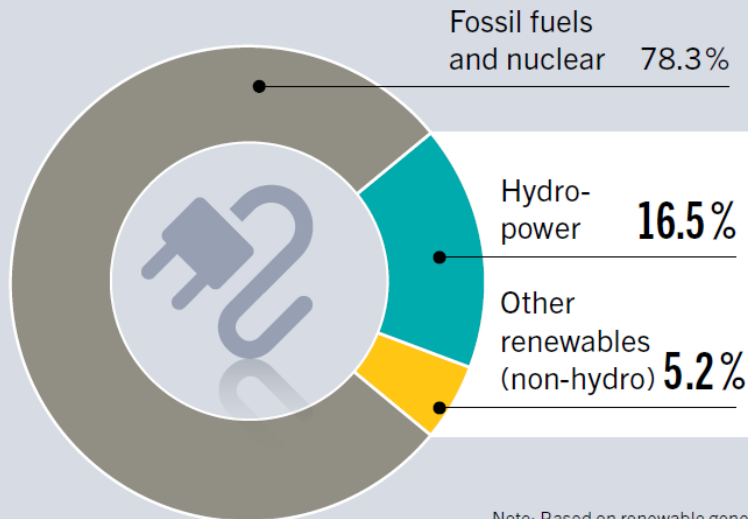
ANNUAL INVESTMENT/ADDITIONS/PRODUCTION IN 2012							
	New capacity investment	Hydropower capacity	Solar PV capacity	Wind power capacity	Solar water collector (heating) capacity ¹	Biodiesel production	Ethanol production
1	China	China	Germany	United States	China	United States	United States
2	United States	Turkey	Italy	China	Turkey	Argentina	Brazil
3	Germany	Brazil/Vietnam	China	Germany	Germany	Germany/Brazil	China
4	Japan	Russia	United States	India	India	France	Canada
5	Italy	Canada	Japan	United Kingdom	Brazil	Indonesia	France

TOTAL CAPACITY AS OF END-2012							
	Renewable power (incl. hydro)	Renewable power (not incl. hydro)	Renewable power per capita (not incl. hydro) ²	Bio-power	Geothermal power	Hydropower	Concentrating solar thermal power (CSP)
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

ESTIMATED RENEWABLE ENERGY SHARE OF GLOBAL ELECTRICITY PRODUCTION, 2012



Note: Based on renewable generating capacity in operation at year-end 2012.

Source: REN21 Renewables 2013 Global Status Report

- Renewable energy comprises 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 installed electric capacity in 2012.

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

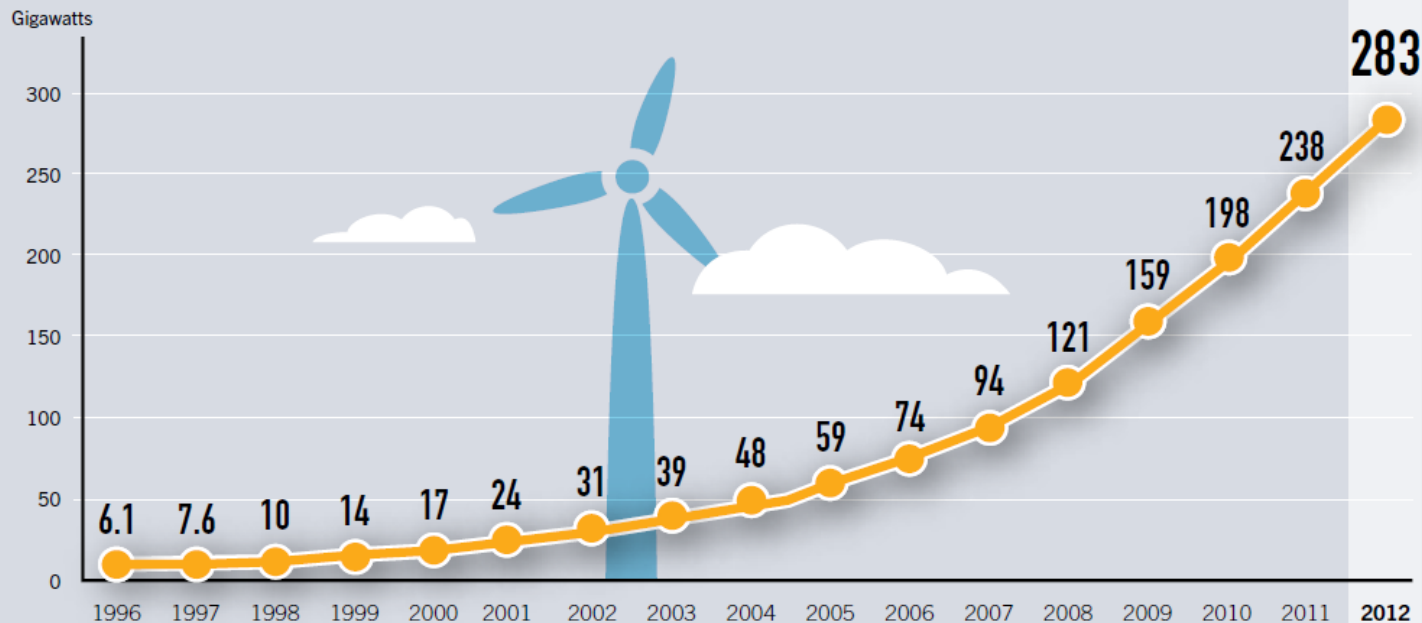
- RE used in the form of liquid and gaseous biofuels, electricity and renewably produced hydrogen for fuel cell vehicles.
- Liquid biofuels provided about 3,4 % of global road transport fuels in 2012.
- Electric transport is being tied directly with renewable energy through policy directives particularly at local level.

Regional Spotlight Africa

- Africa is recognised for the potential of its renewable energy resources to provide electricity, heat, and transport fuels.
- African renewable energy markets remain the least developed globally.
- A diverse portfolio of renewables on a large scale is emerging thanks to:
 - Growing awareness of the potential of renewables.
 - Greater economic resilience.
 - More stable governments.
- Around 20 African countries now have formal renewable energy policies in place.

Wind Power

WIND POWER GLOBAL CAPACITY, 1996–2012



Source: REN21 Renewables 2013 Global Status Report

- Almost **45GW** of wind power capacity came in operation in 2012, increasing global wind capacity 19% to **283GW**.

- Tunisia almost doubled its capacity, adding 50 MW, Ethiopia installed 52 MW and South African began construction on several projects totaling more than 500 MW.

Wind Power Capacity on the MENA region

Figure 3. Installed Wind Power Capacity in the MENA Region, 2005–2012



Sources: Global Wind Energy Council and World Wind Energy Association.

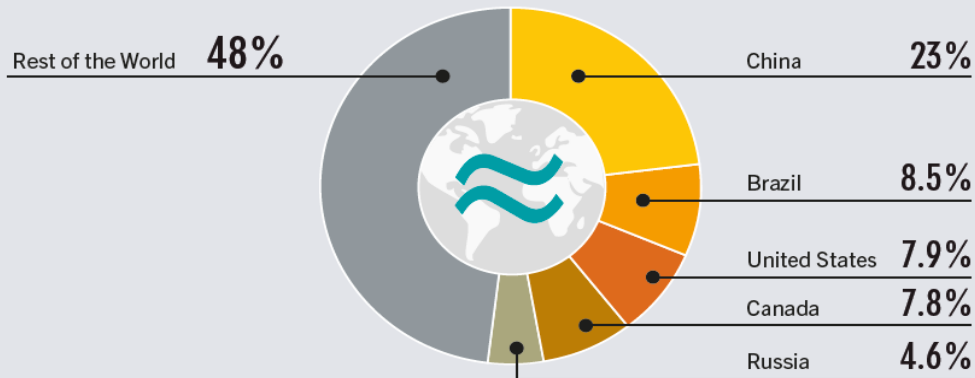
Note: Capacity data are rounded to the nearest 5 MW.

Source: MENA Renewables Status Report

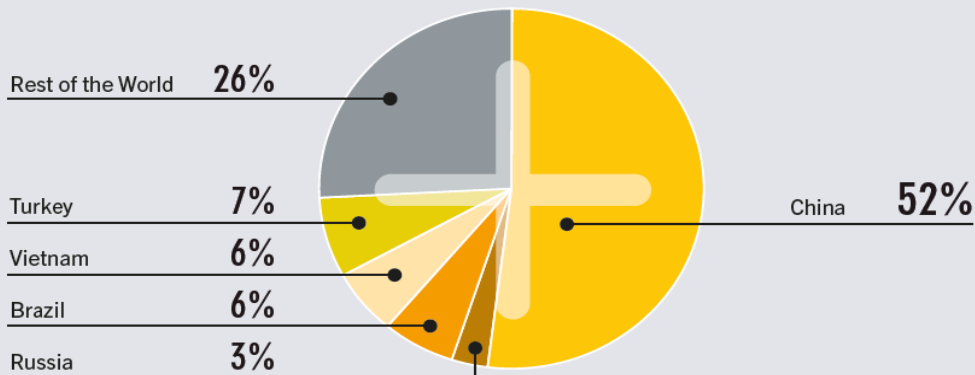
- Wind is the **second largest power source** in the region after hydro.
- Total of **1.1 GW of wind capacity by the end of 2012** across 9 countries.
- **Egypt** is the leader in the region with **550 MW** installed capacity, followed by **Morocco** at 291 MW and **Tunisia** at 154 MW

Hydropower

HYDROPOWER GLOBAL CAPACITY, SHARES OF TOP FIVE COUNTRIES, 2012



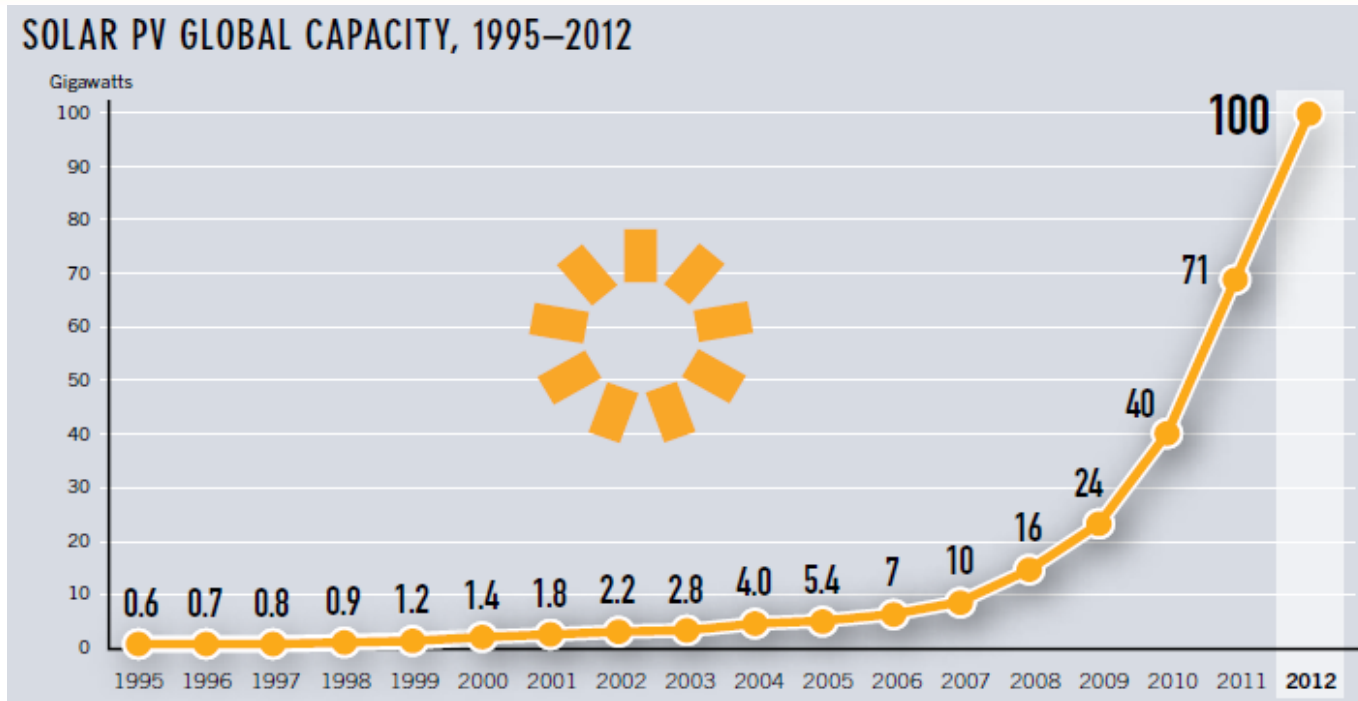
HYDROPOWER GLOBAL CAPACITY ADDITIONS, SHARES OF TOP FIVE COUNTRIES, 2012



Source: REN21 Renewables 2013 Global Status Report

- 30GW of new hydropower was added in 2012, increasing capacity by nearly 3%, bringing installed capacity to 990GW.
- Globally hydropower generated 3,700TWh of electricity in 2012.
- The **Grand Renaissance Dam** is well under way in **Ethiopia**, with commissioning of the first phase to start in late 2013. It is expected to deliver **6,000 MW** and to be the largest hydropower facility on the continent.

Solar Photovoltaics (PV)

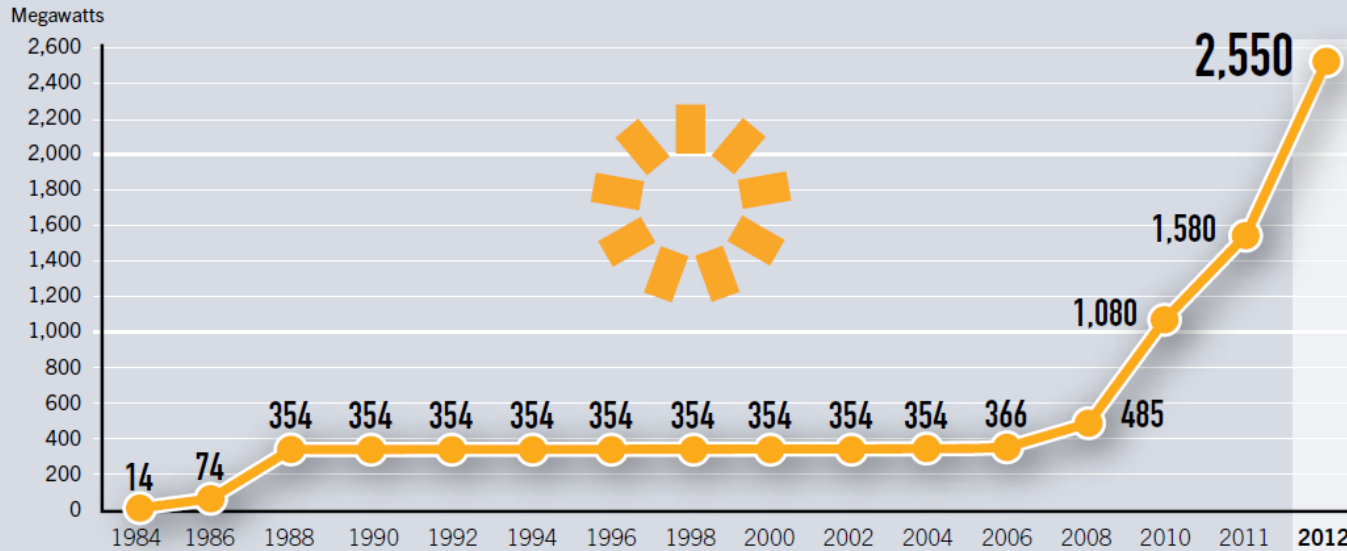


Source: REN21 Renewables 2013 Global Status Report

- Total global operating capacity of **solar PV reached the 100 GW milestone.**
- Prices of solar PV modules fell by more than 30 % in 2012.
- Namibia and South Africa brought large solar parks on line 2012.

Concentrating Solar Thermal Power (CSP)

CONCENTRATING SOLAR THERMAL POWER GLOBAL CAPACITY, 1984–2012

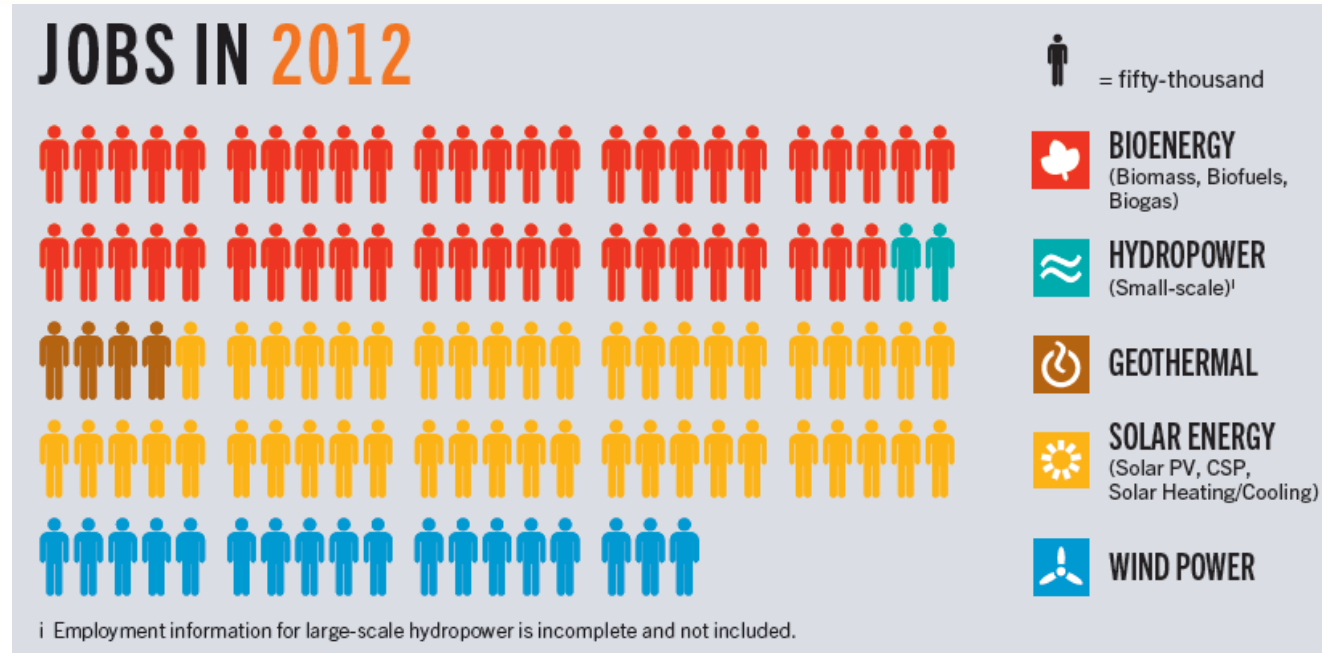


Source: REN21 Renewables 2013 Global Status Report

- Total global CSP capacity increased more than 60% to about 2,550 MW.

- Interest in CSP is on the rise, particularly in developing countries, with investment spreading across **Africa**, the Middle East, Asia, and Latin America.
- **South Africa** began the **construction** of a **50 MW** solar power tower and a **100 MW** trough plant.

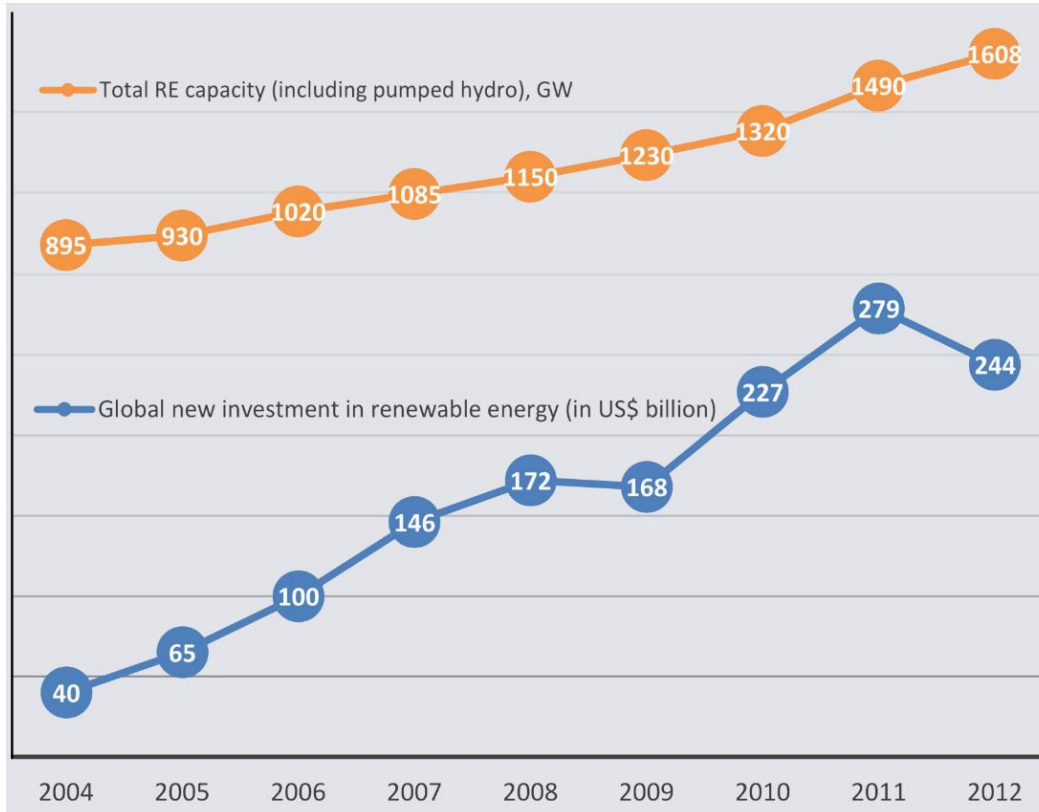
Renewable Energy and Jobs



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.

Global New Investment in Renewable Energy



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

- Global new investment in renewable power decreased 12% from the previous year's record (still the second highest ever).
- **Installed capacity continued to grow due to falling technology costs.**
- **South Africa increased its investment** in renewable energy from a few hundred million dollars to USD 5.7 billion.

■ **Morocco** saw a jump in outlays from USD 297 million to **USD 1.8 billion**, while **Kenya** saw **commitments** rise from almost zero in 2011 to **USD 1.1 billion** in 2012.

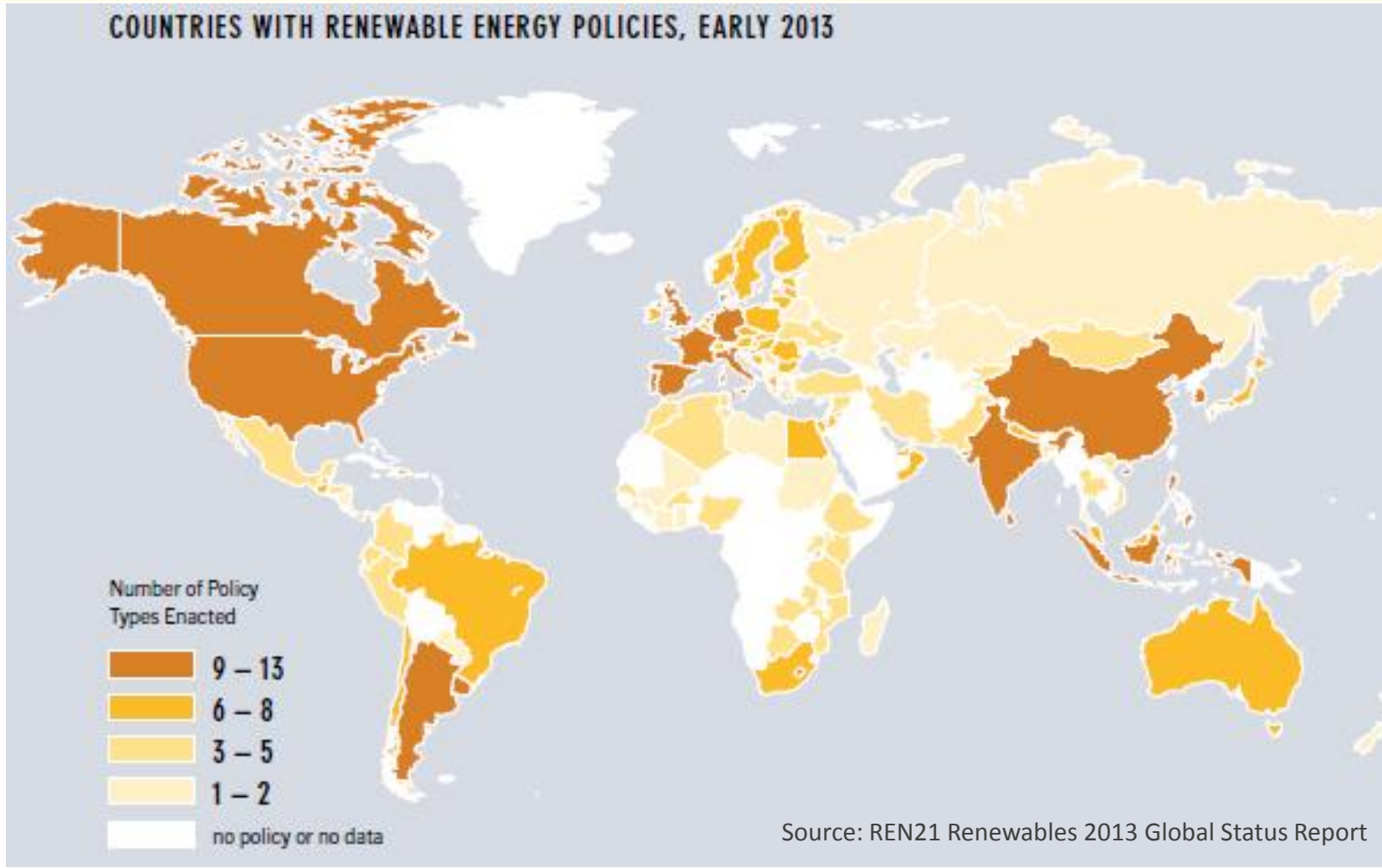
Policy Landscape



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



Three complementary goals by 2030:

- 
1 ENSURE
universal access
TO MODERN ENERGY SERVICES.
- 
2 DOUBLE THE GLOBAL RATE OF
IMPROVEMENT IN
energy efficiency
- 
3 DOUBLE THE SHARE OF
renewable energy
IN THE GLOBAL ENERGY MIX.



SUSTAINABLE
ENERGY FOR ALL

Starting point for SE4ALL goals can be established on this basis

Percent	Universal access to modern energy services		Doubling global rate of improvement of energy efficiency	Doubling share of renewable energy in global energy mix
	Proxy indicator	Percentage of population with primary reliance on non-solid fuels	Rate of improvement in energy intensity	Renewable energy share in TREC
1990	76	47	-1.3	16.6
2010	83	59		18.0
2030	100	100	-2.6	36.0

Source: Global Tracking Framework @ International Energy Agency and World Bank, 2013

In conclusion

- Recently the world has passed 400 ppm of atmospheric CO₂ - potentially enough to trigger a warming of 2 degrees Celsius compared with pre-industrial levels. This underlines the need to further accelerate the deployment of renewable energy as well as energy efficiency measures.
- Sustainable Energy4All: Doubling the share of renewables by 2030 will need to result in at least a tripling of the share of modern renewables incl. sustainable hydropower
- Big and small, we need them all!
- Renewable energy needs a level playing field (RE support is still 6 times less than fossil fuel subsidies).
- Integration of renewable energy will be key in the future.

REN21 Flagship Products & Activities

Renewables Global Status Report

www.ren21.net/gsr



Renewables Interactive Map

www.map.ren21.net



Renewables Global Futures Report

www.ren21.net/gfr



Regional Status Reports



Global Status Report on Local Renewable Energy Policies



Facilitation of IRECs



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