GLOBAL STATUS REPORT 2012
Key Findings

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2012 INTERNATIONAL YEAR OF SUSTAINABLE ENERGY FOR ALL

Webinar focussing on Latin America

About REN21

- **Multi-stakeholder Policy Network grouping:**
  - **National governments:** Brazil, Germany, Denmark, UK, Spain, Norway, India, UAE, US, Uganda, Morocco, etc.
  - **International organisations**: IEA, IRENA, UNEP, UNIDO, UNDP, ADB, GEF, etc.
  - **Industry associations:** GWEC, WWEA, WBA, IGA, ISES, IHA, ARE, EREC, etc.
  - **Science & Academia:** SANEDI, IIASA, TERI, etc.
  - **NGOs:** WWF, Greenpeace, ICLEI, CURES, WRI, etc.

- **Objective**: enable a **rapid global transition to renewable energy**

- **REN21 Secretariat** based at UNEP in Paris/France

REN21 – Renewable Energy Policy Network for the 21st Century

REN21 Renewables Global Status Report

- Launched on **June 11, 2012** along with UNEP's Global trends in RE investment
- Team of over 400 Contributors, researchers & reviewers worldwide
  - Lead author (Janet Sawin) & Chapter authors
  - Regional Contributors , Technology contributors & Rural energy contributors
  - REN21 Secretariat research support team

The report features:

- Global Market Overview, Investment Flows, Industry Trends, Policy Landscape, Rural Renewable Energy
- All renewable energy technologies
- Sectors: power, heating/cooling, transport
- New elements in 2012:
  - Rural renewable energy
  - Renewable energy & energy efficiency

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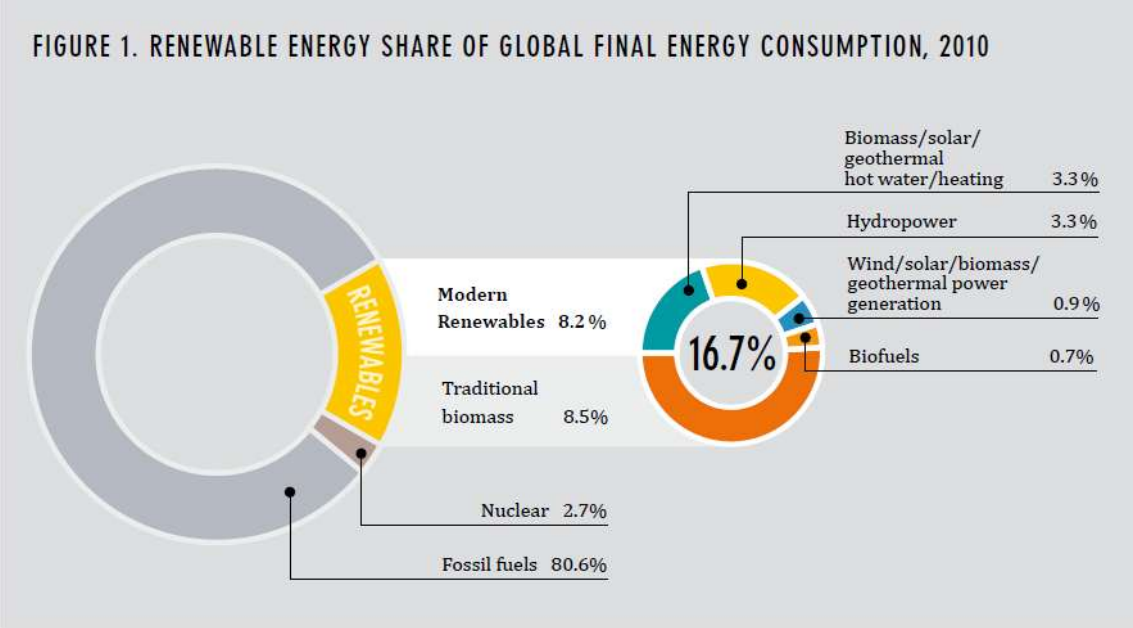
Renewable Energy in the World



- RE supplied an estimated **17%** of **global final energy consumption**
- **UN Secretary General's goal : doubling the share of renewable energy in the global energy mix by 2030**
- Renewable energy continued to grow strongly despite policy uncertainty in some countries, the geography of renewables is expanding as prices fall and policies spread

Global Market Overview – Power Markets

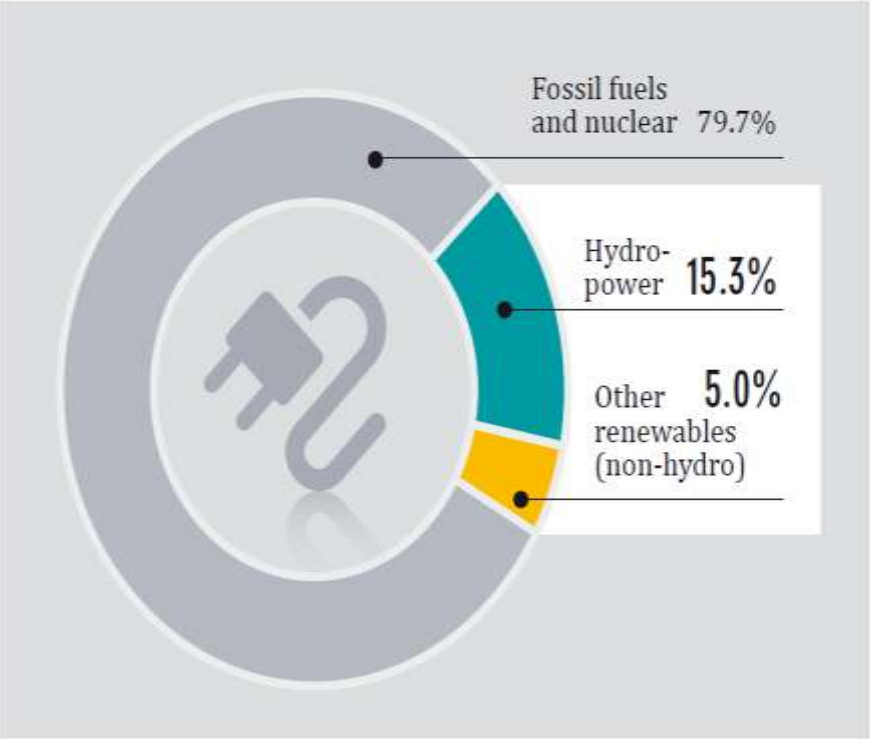
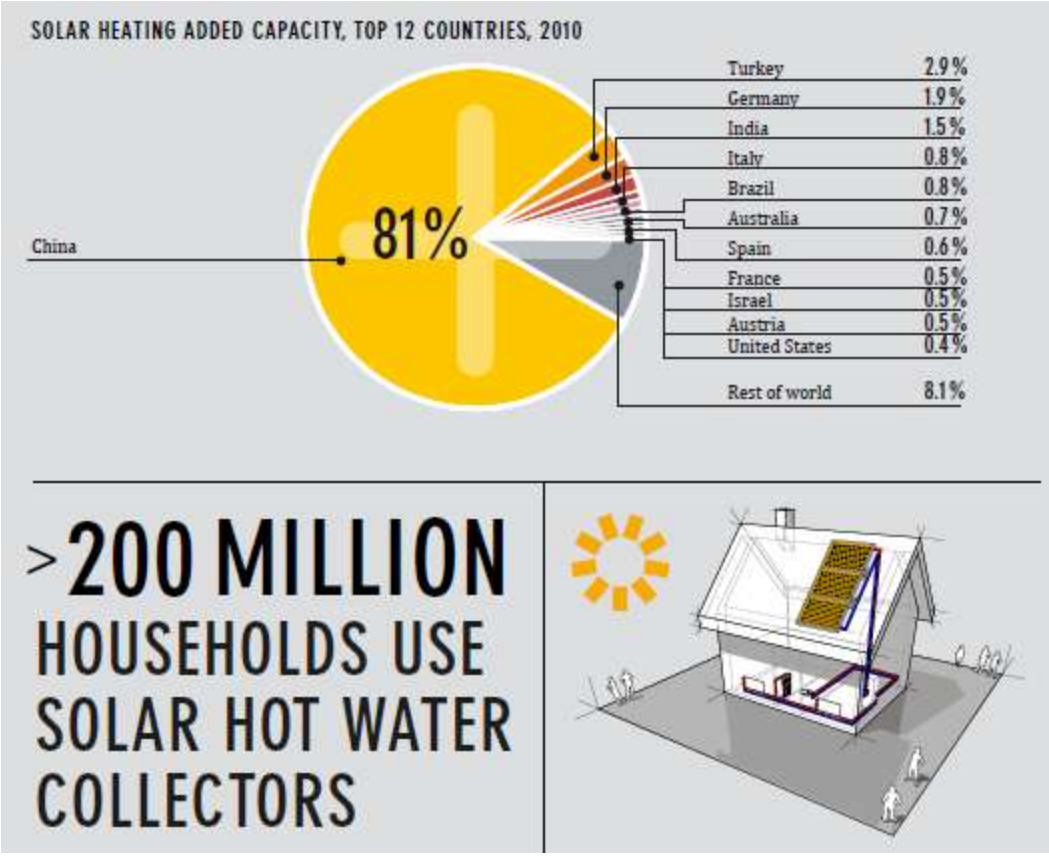


Figure 3. Renewable Energy Share

- Renewables accounted for nearly half of the estimated 208GW of new electric capacity installed in 2011
- Renewable electric power capacity worldwide reached **1,360 GW** (+8%) in 2011
- Renewable energy comprised more than **25%** of **global power generation capacity**
- **20.3% of global electricity** was produced from renewable energy

Global Market Overview – Heating & Cooling

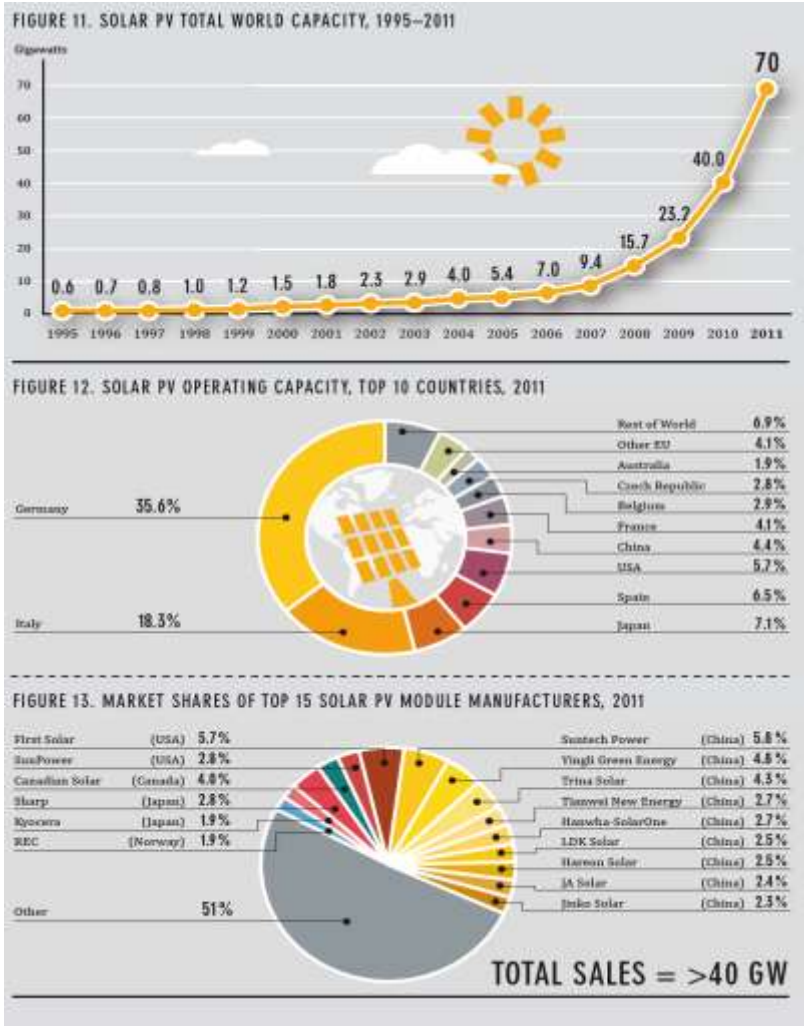
- Transition towards the use of larger systems, increasing use of CHP and district schemes.
- Growing trend to use solar resources to generate process heat for industry.
- Solar hot water used in over 200 million households and commercial buildings.



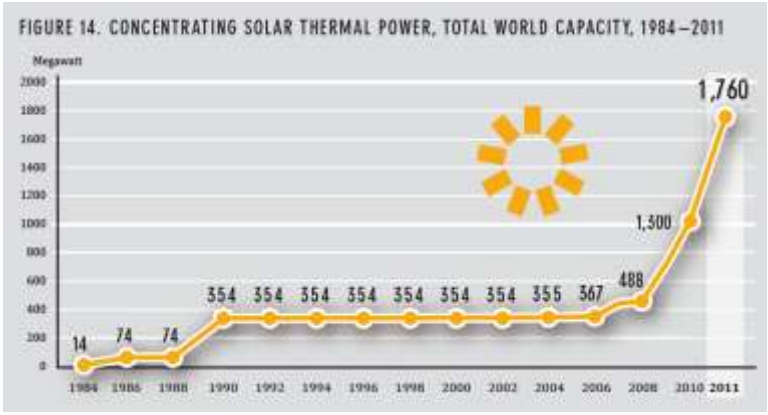
Global Market Overview – Transport

- RE used in form of electricity, hydrogen, biogas, liquid biofuels. Liquid biofuels provided 3% of global road transport fuel in 2011.
- Electric transport is being tied directly with renewable energy through policy directives in many countries.
- Airlines around the world have shown growing interest and involvement in aviation biofuels as part of their effort to reduce fuel costs and GHG emissions.
- Several countries have announced targets that together would result in more than 20 million Electric Vehicles operating by 2020.

Solar Power



- 30GW of new solar PV capacity came into being in 2011
- Solar PV capacity in operation in 2011 is about ten times the global total in 2006
- 47% of all new EU electrical capacity came from PV
- Size of global PV industry exceeds USD 100 billion per year.



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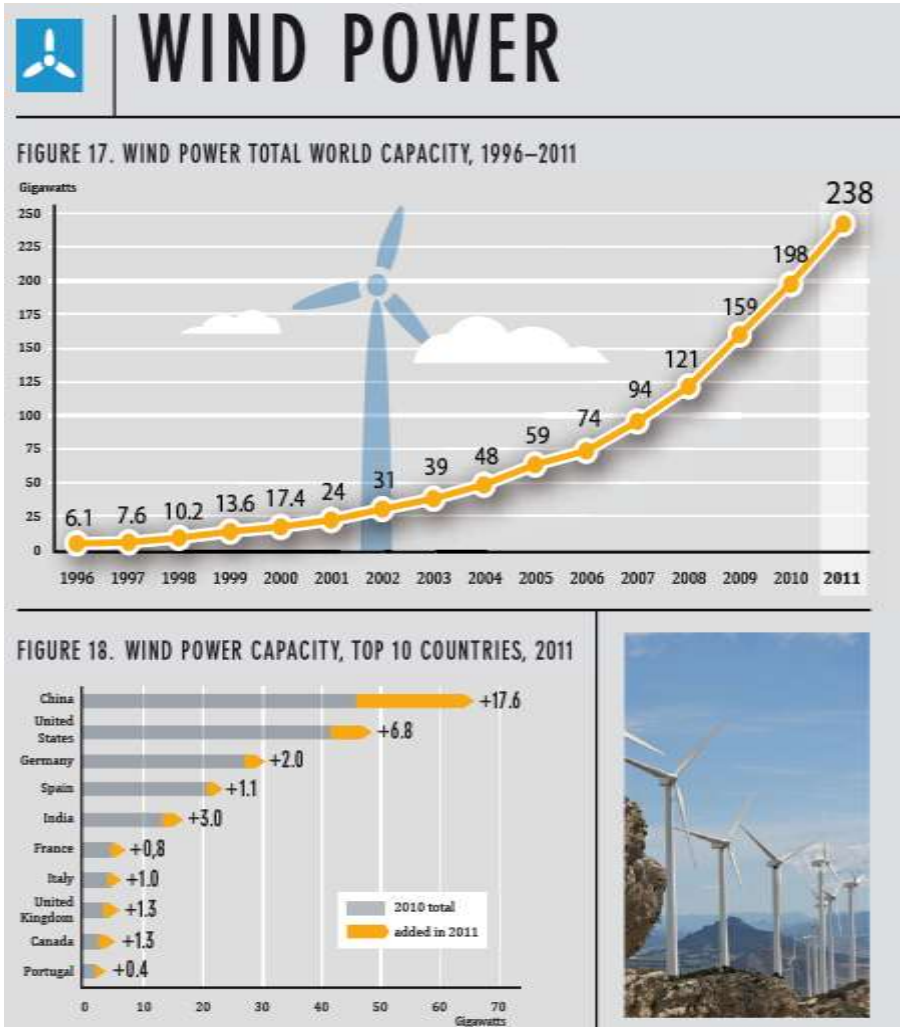
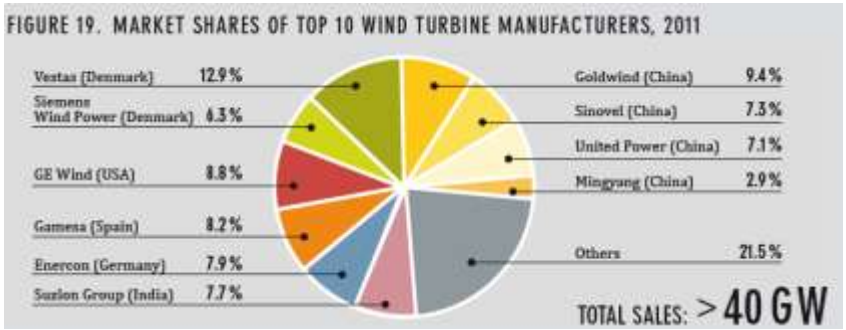
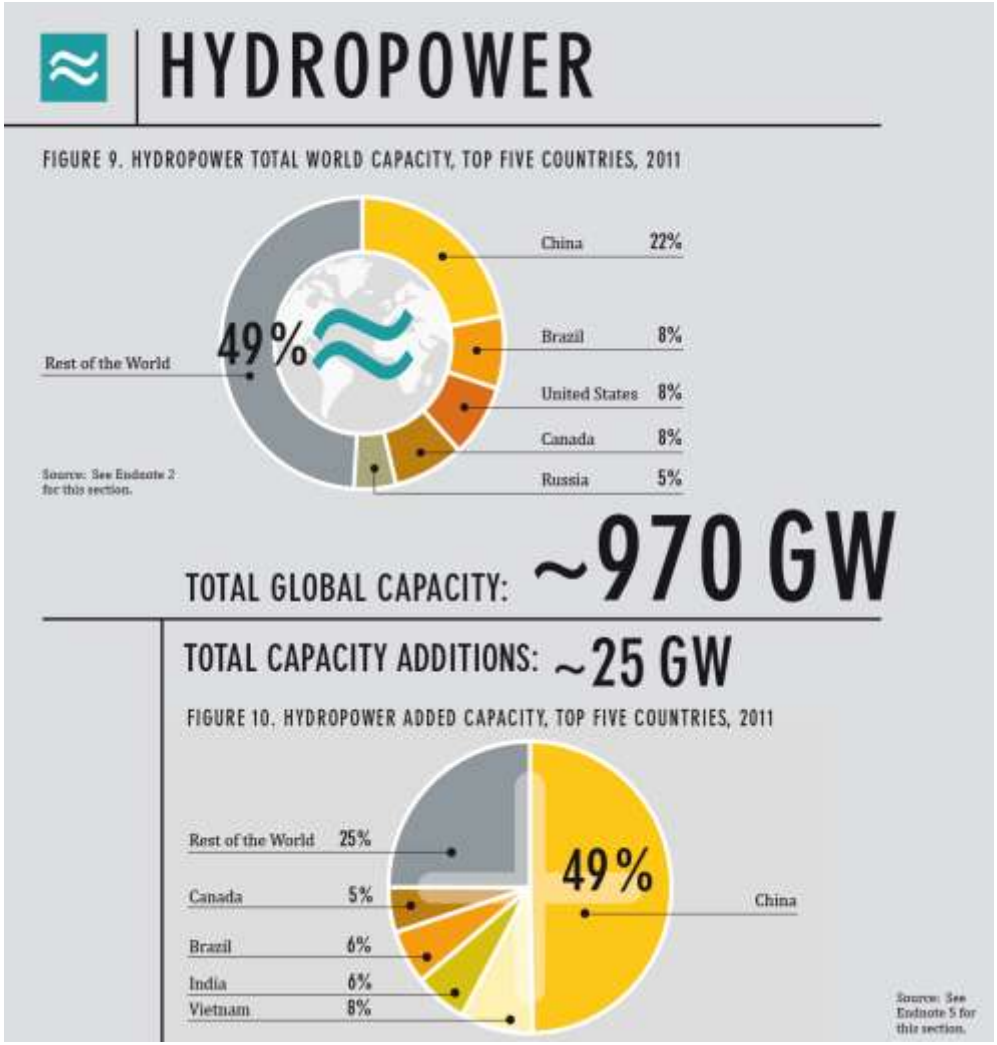
Wind Power



- In 2011, 40 GW of wind power capacity was installed, increasing the global total to 238 GW.
- Annual growth rate of cumulative wind power capacity between 2006-2010 averaged at 26%
- Latin America saw the most significant growth in wind power. Brazil, Argentina, Chile, Dominican Republic, Honduras and Mexico all added capacity during 2011

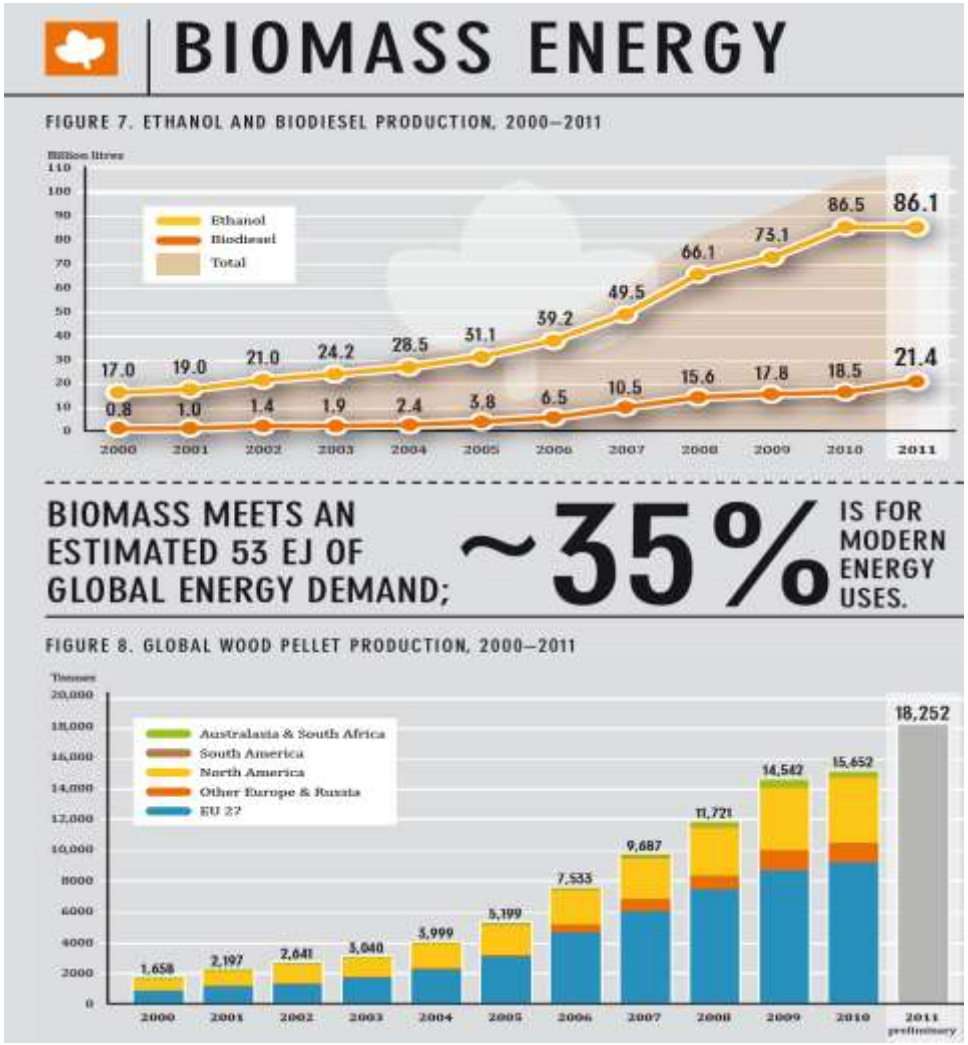


Hydropower



- 25 GW of new hydropower was added in 2011, increasing capacity by nearly 3%, bringing installed capacity to 970 GW
- 3400 TWh of hydropower was generated in 2011 out of which 450 TWh in Brazil.
- Small, but growing, market is emerging for low capacity hydropower in Asia, Sub Saharan Africa and Latin America

Biomass Energy



- Biomass energy accounted for over 10% of global primary energy supply in 2011.
- The present global demand for biomass is 53EJ, mainly used for heating, cooking and industrial applications
- Liquid biofuels production grew rapidly at 17% for ethanol and 27% for biodiesel.
- Brazil and Argentina have power plants fuelled entirely by ethanol and biodiesel, respectively.

Geothermal Energy

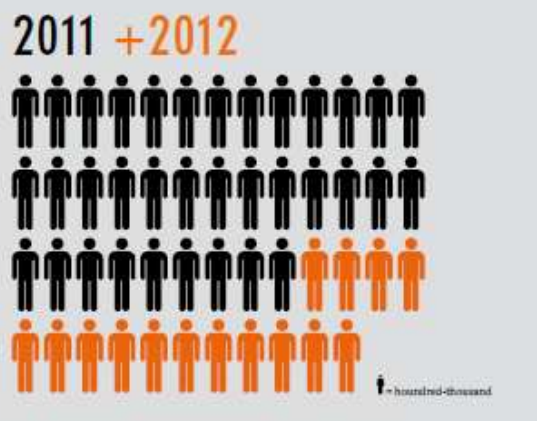
- 205 TWh (738PJ) of district heat and electricity was provided by geothermal resources in 2011
- Heat output from geothermal sources grew at 100%p.a. from 2005-2010; reaching 489PJ in 2011
- Latin American countries like Chile and Peru are developing plans for new capacity from geothermal energy
- Geothermal power became more attractive due to flexibility offered by new technologies such as flash plants combined with binary bottoming cycles for increased efficiency

Industry Trends

- RE industry saw **continued growth** in manufacturing, sales and installation
- **Cost reductions** (especially in PV and onshore wind) contributed to growth
- Changing policy landscape in many countries → industry uncertainties, declining policy support, international financial crisis and barriers to trade
- **Worldwide jobs** in renewable energy industries exceeded **5 million** in 2011; clustered primarily in bioenergy and solar industries

TABLE 1. ESTIMATED JOBS IN RENEWABLE ENERGY WORLDWIDE, BY INDUSTRY

TECHNOLOGIES	Global	China	India	Brazil	USA	EU[7]	Germany	Spain	Others
	Thousand jobs								
Biomass[1]	750	266	58		152	273	51	14	2[8]
Biofuels	1,500			889[6]	47–160	151	23	2	194[9]
Biogas	230	90	85			53	51	14	
Geothermal[3]	90				10	53	14	0.6	
Hydropower (Small[2])	40		12		8	16	7	1.6	1[8]
Solar PV	820[4]	300[7]	112		82	268	111	28	60[10]
CSP	40				9		2	24	
Solar Heating/ Cooling	900	800	41		9	50	12	10	1[8]
Wind Power	670[4]	150	42	14	75	253	101	55	33[11]
Total[5]	**5,000**	**1,606**	**350**	**889**	**392–505**	**1,117**	**372**	**137**	**291**



Investment Flows

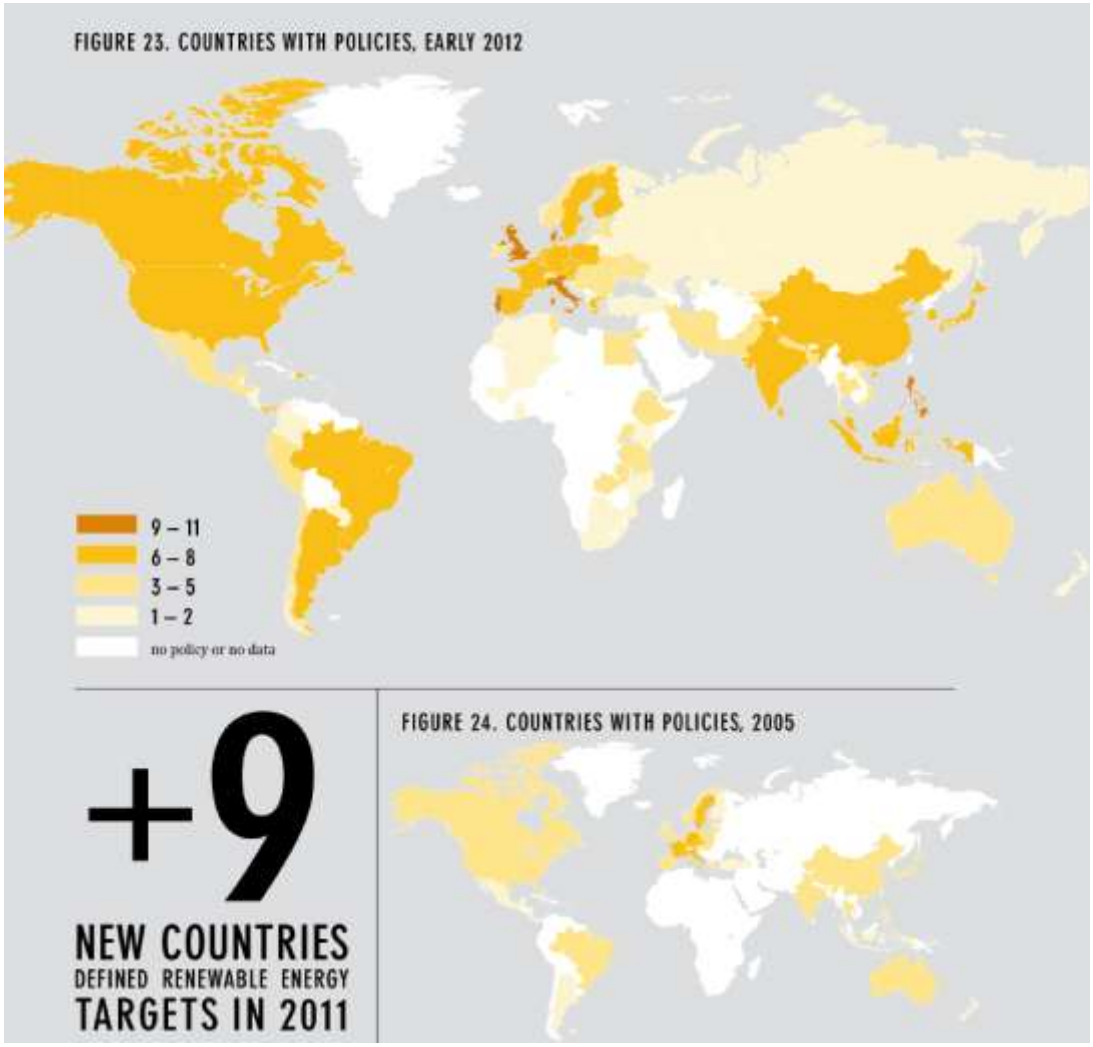
Source: UNEP/Bloomberg: Global Trends in Renewable Energy Investment 2011

- Total global investment in RE jumped in 2011to a record of $257 billion , up 17% from 2010
- This is 6 times the level of investment in 2004 and 94% more than the total investment in RE in 2007
- Total investment exceeds
  - $267 billion including estimated $10 billion (unreported) invested in solar hot water
  - ~$282 billion including the $25 billion invested in large hydropower (>50 MW)
- Despite the rise in investment, the rate of growth of investment was below the 37% rise in investment from 2009 to 2010.

Renewable Energy Investment in Latin America

- During 2011, developing economies accounted for $ 89 billion in new investment .
- Brazil saw an 8% increase in investment from the 2010 level.
- Total new investment in Brazil was $ 7 billion.
- Total investment in the Americas, excluding the United States and Brazil, was $ 7.1 billion.

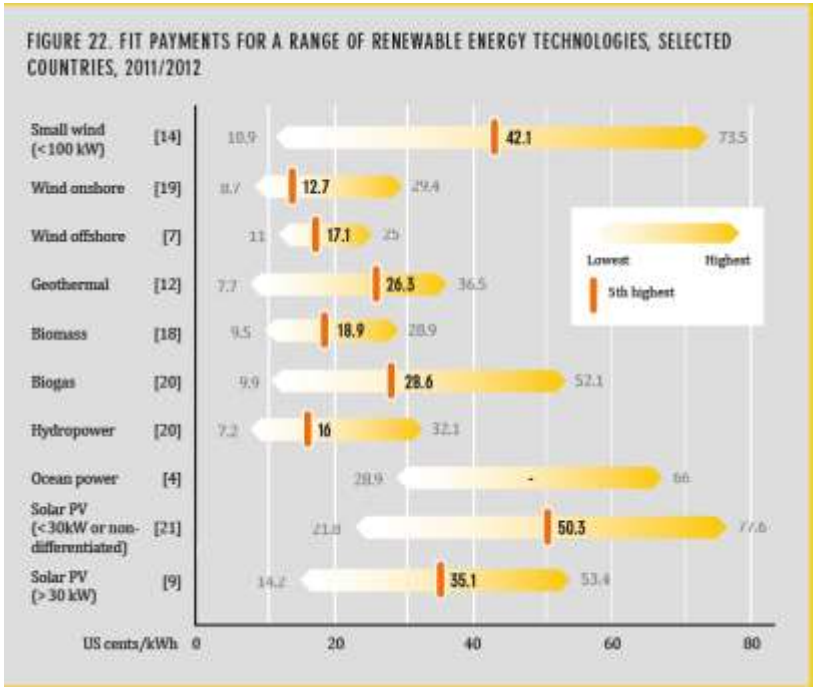
Policy Landscape



- Targets in at least **118 countries** up from the 96 reported in previous year; **more than half are developing countries**.
- Some setbacks resulting from a lack of long-term policy certainty and stability in many countries
- GSR2012 portrays efforts in systematic linking of energy efficiency and renewable energy in the policy arena.

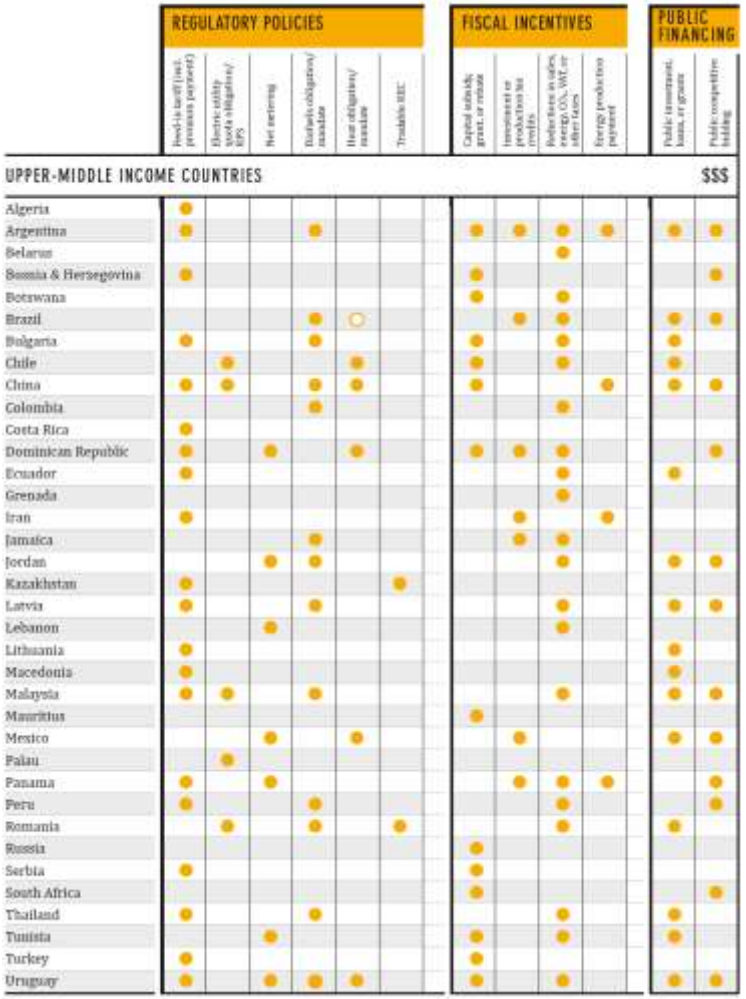
Policy Landscape

- Renewable power generation policies remain the most common type of support policy; Feed-in-tariffs (FIT) and renewable portfolio standards (RPS) are the most commonly instruments. FIT policies were in place in at least 65 countries and 27 states worldwide by early 2012.
- Policies to promote renewable heating and cooling expanded.
- Almost two-thirds of the world's largest cities had adopted climate change action plans by the end of 2011, with more than half of them planning to increase their uptake of renewable energy.



Policy Targets for RE in Latin America

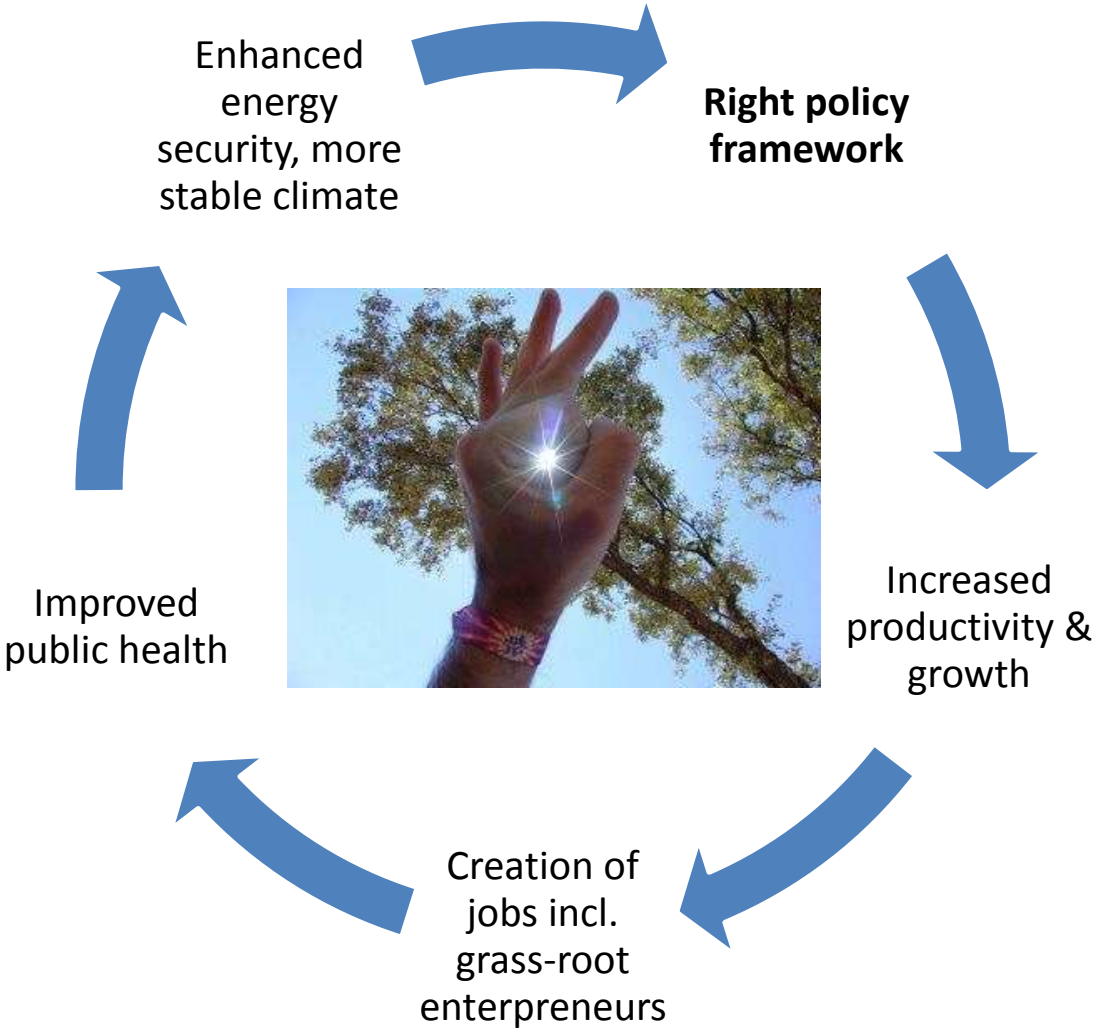
- Examples of successful policy measures taken in 2011 include:
  - Targets: New policy targets were introduced by Brazil in 2011
  - Power Generation capacity: Peru held auctions for 412MW of hydro, agricultural residues, wind and solar power in 2010 and an additional 210 MW in 2011
  - Heating and Cooling: Uruguay implemented its 2009 act requiring large consumers to meet more than 50% of their hot water demand through solar heaters



Energy Access

- UN Secretary General's goal: Global action to achieve universal access to modern energy services by 2030
- In order to achieve universal access for all, the current global investments on energy access of annual 9 billion USD need to be increased to 48 billion USD annually
- 2.6 billion people still employed traditional cook stoves and open fires for heating and cooking in 2011
- 7% of the Latin American population lacks access to electricity and 19% depend on traditional biomass for heating and cooking
- Lower prices of renewable energy technology is allowing manufacturers to diversify into emerging markets
- Financial models in rural energy include:
  - Small retail markets
  - Public-Private micro financing initiatives
  - National/multi stakeholder programmes

Sustainable Energy for All



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