Global Renewable Energy Scenario

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Contents

Introduction

- Global installed capacity and production from all renewable technologies and their supporting policies have increased substantially.
- The most significant growth of renewables is recorded in the **power sector** with an increase of 8% in 2013, bringing the total installed capacity to **1560 GW**.
- The source which added the most amount of capacity in 2013 was solar power. It added 39 GW making the total installed capacity 139 GW.
- Present share of renewable energy in India is 12.75%.

Renewable Energy Indicators

		Start 2004	End 2012	End 2013	% Growth
Renewable Power Capacity (not including hydro)	GW	85	480	560	16.67%
Renewable Power capacity (including hydro)	GW	800	1,440	1,560	8.33%
Hydro power capacity	GW	715	960	1000	4.16%
Bio-power capacity	GW	<36	83	88	6.02%
Bio-power generation	TWH	227	350	405	15.70%
Geothermal capacity	GW	8.9	11.5	12	4.34%
Solar PV capacity	GW	2.6	100	139	39.00%
CSP capacity	GW	0.4	2.5	3.4	36.00%
Wind Power capacity	GW	48	283	318	12.36%

Hydropower

- Global hydropower generation during the year 2013 was an estimated **3,750 TWh.**
- With 40 GW commissioned in 2013, the total installed capacity reached to 1000 GW.
- The maximum share of all new capacity in 2013 was installed by China, followed by Turkey, Brazil, Vietnam, India, and Russia.

Hydro Power in India

- India installed 0.8 GW capacity of hydropower capacity in 2013 of which nearly 0.6 GW was in installations larger than 25 MW.
- According to Ministry of New and Renewable Energy, an estimated potential of 15 GW of SHP exists in India.
- The Government aims to reach 7 GW of SHP by the end of 12th plan.
- Various challenges such as impact on environment, rehabilitation and resettlement of project affected people, issues related to safety of dams, and gestation period creates hindrance for hydro project development.

Solar Power

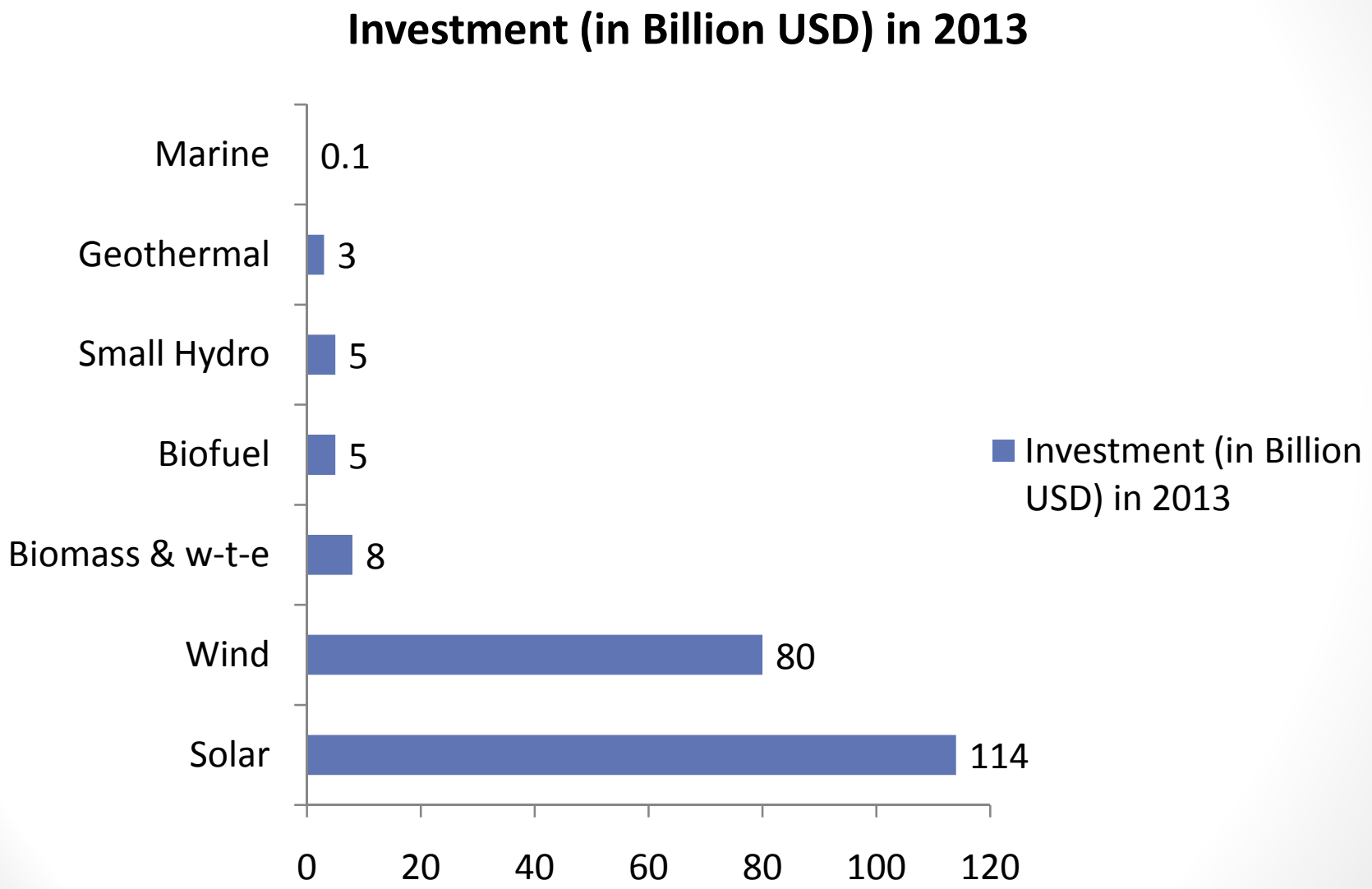
- A capacity addition of more than **39 GW** brought the total capacity to approximately **139 GW**.
- China accounted for nearly one-third of global capacity addition (12.9 GW), followed by Japan (6.9 GW) and the United States(4.8 GW).
- India's installed solar power capacity as on January 31st, 2014 is 2.50 GW.
- The major challenges faced by Solar Power are Project funding, land related issues and lack of closer industry-government cooperation.

Wind Power

- More than **35 GW** of wind power capacity was added in 2013, bringing the total global capacity to **318 GW**.
- Asia remained the largest market for the sixth consecutive year, accounting for almost 52% of added capacity, followed by the EU (about 32%) and North America (less than 8%).
- India's Wind Power installed capacity stood at 21.21 GW until April, 2014 with 7.1 GW in Tamil Nadu, 3.1 GW in Gujarat and 2.97 GW in Maharashtra.
- Major challenges faced by wind power are requirement of high initial investment, power evacuation constraints and policy uncertainties .

Investment Flow

- Global new investment in renewable power and fuels (not including hydropower projects) was USD 214.4 billion in 2013 which was 14% lower than previous the year.
- The major reason for this decrease was uncertainty over incentive policies in Europe and the United States and also sharp reduction in technology cost.
- In Japan, investment in renewable energy increased by 80%.
- Other countries which increased their investment in 2013 were Canada, China, Israel, New Zealand, UK and Uruguay.


Investment (in Billion USD) in 2013
Marine
0.1
Geothermal
3
Small Hydro
5
Biofuel
5
Biomass & w-t-e
8
Wind
80
Solar
114
0
20
40
60
80
100
120
Investment (in Billion USD) in 2013

Investment in India

- Investment in 2013 fell to half of the peak total recorded in 2011.
- Small-scale project investment increased to a record USD 0.4 billion.
- According to Ministry of Power, the estimated investment requirement for Twelfth Plan period for hydro power is USD 14.53 billion for 10,987 MW.

Policy Framework

- 2013 saw an increasing focus of the countries on revisions to existing policies and adoption of new ambitious targets.
- Feed-in-tariff policies in many countries such as Japan, Australia and, the United Kingdom further helped in improving the renewable energy sector.
- In India, the measures taken to improve the renewable sector includes provision of incentives under MNRE and additional capital subsidy under the state policies.

Challenges

- Declining policy support and uncertainty as well as high global subsidy for fossil fuels in many European countries and United States.
- Opposition in some countries from electric utilities concerned about rising competition and fear of unemployment for present employees.
- Electric Grid related constraints.
- The use of modern renewable technology for heating and cooling is still limited relative to their vast potential.

Future Course

- Improving the regulatory and legal framework for using natural resources in the construction and operation of renewable energy projects.
- Promote the development of energy service SMEs in the renewable energy power sector.
- Boosting innovative financing mechanisms such as crowd funding and risk-guarantee schemes.
- Regular revision of feed-in premiums for electricity generated from renewable energy sources.
- Improving R&D in renewable energy sector, and developing domestic industry capacity, inclusive of green corridors.

Conclusion

- Renewable energy increases countries' energy security through reliance on indigenous and inexhaustible resources.
- Governments are increasingly aware of renewable energy's potential role in advancing national development and are taking measures to accentuate the sector. It brings inclusive growth.
- Other co-benefits of renewable sector includes: reducing the health and environmental impacts associated with the use of fossil and nuclear fuels, improving educational opportunities, creating jobs, and reducing poverty.


Thank You