GWEC
GLOBAL WIND ENERGY COUNCIL

Beijing | Brussels | Washington

Global Wind Market Update

Steve Sawyer, Secretary General

JREF, Tokyo

4 March 2015

C0 Members

C1, C2 and C3 Members

Associations

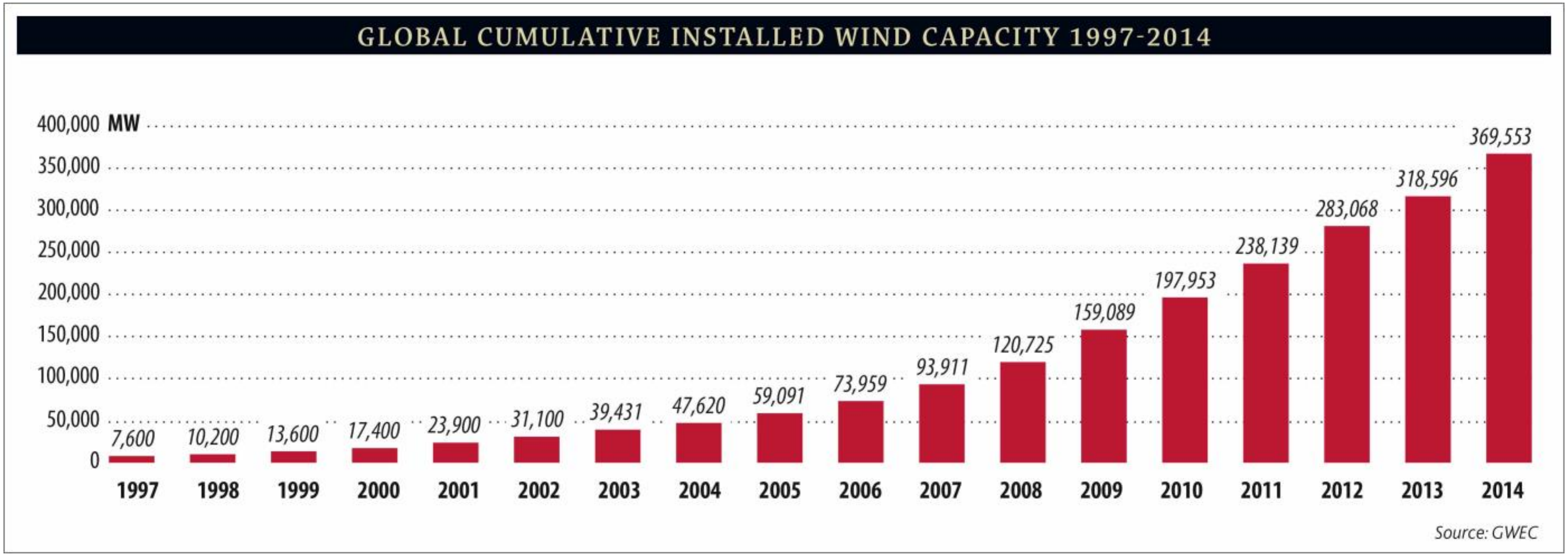
GWEC – Uniting the global wind industry and its representative associations

Outline:

1. 2014 Market results
2. New Markets
3. Costs
4. Looking ahead

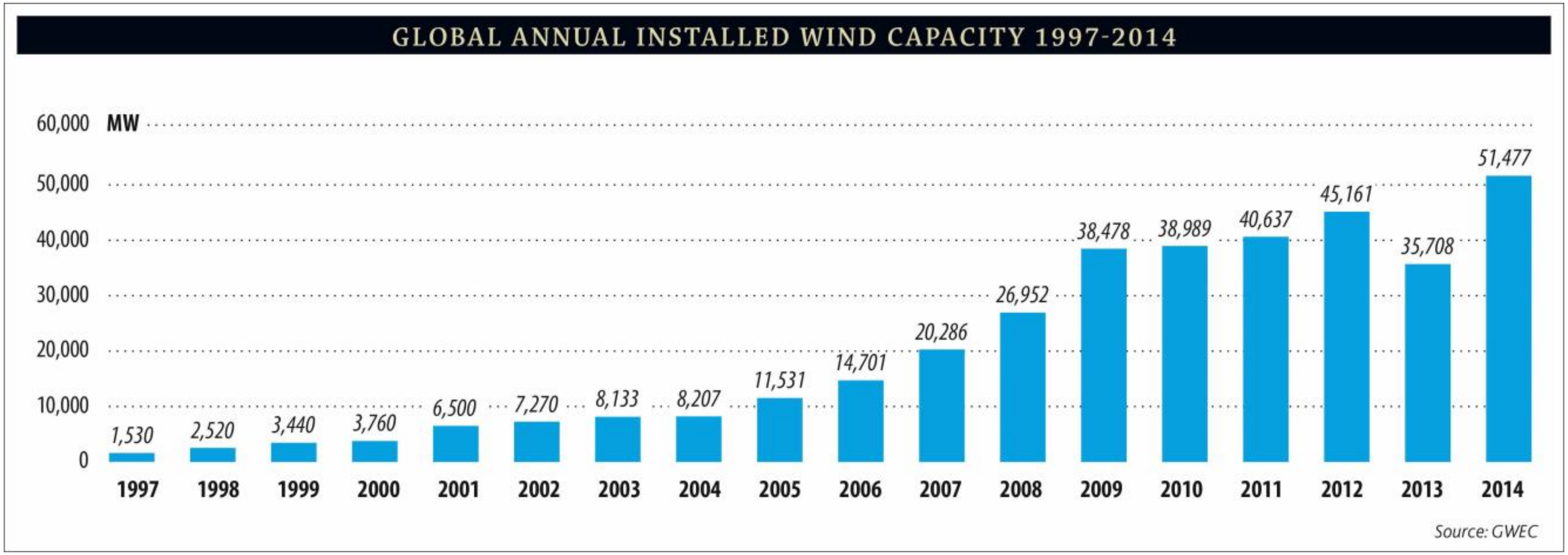
GWEC
GLOBAL WIND ENERGY COUNCIL

2014 growth: 16.2%

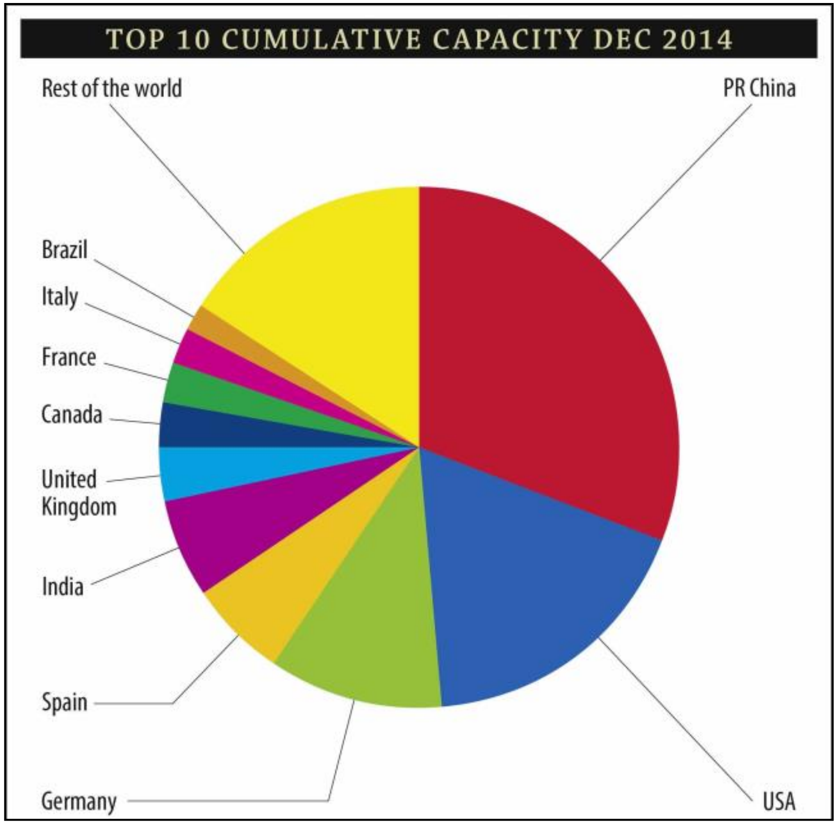


18 yr avg. growth: 25.8%

2014 growth: 44.2%

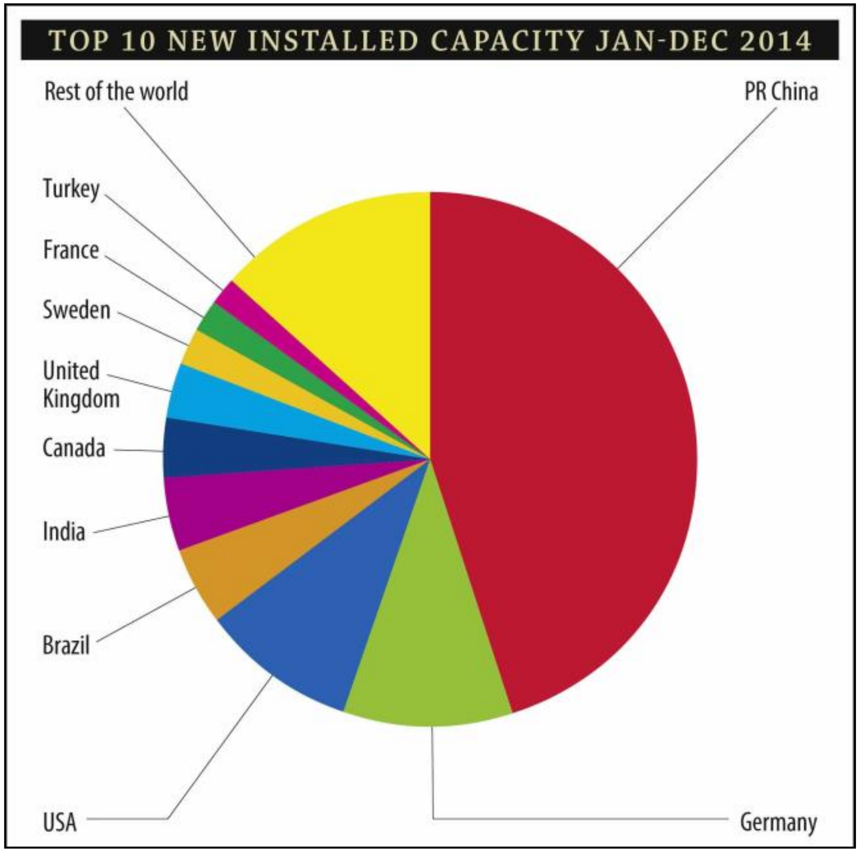


18 yr avg. growth: 24.9%



Country	MW	% SHARE
PR China*	114,763	31.0
USA	65,879	17.8
Germany	39,165	10.6
Spain	22,987	6.2
India	22,465	6.1
United Kingdom	12,440	3.4
Canada	9,694	2.6
France	9,285	2.5
Italy	8,663	2.3
Brazil**	5,939	1.6
Rest of the world	58,275	15.8
Total TOP 10	**311,279**	**84.2**
World Total	**369,553**	**100**

Source: GWEC

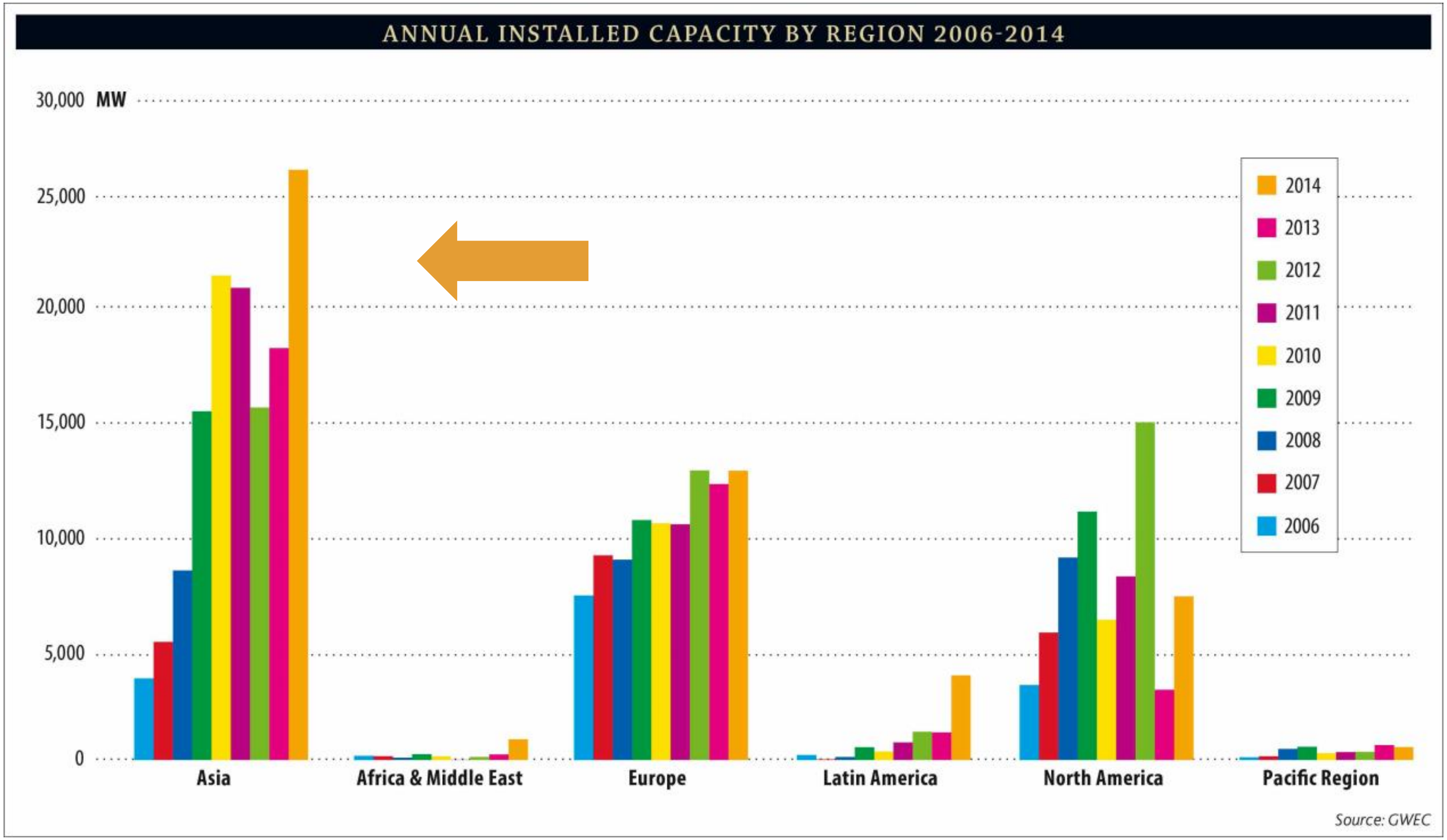


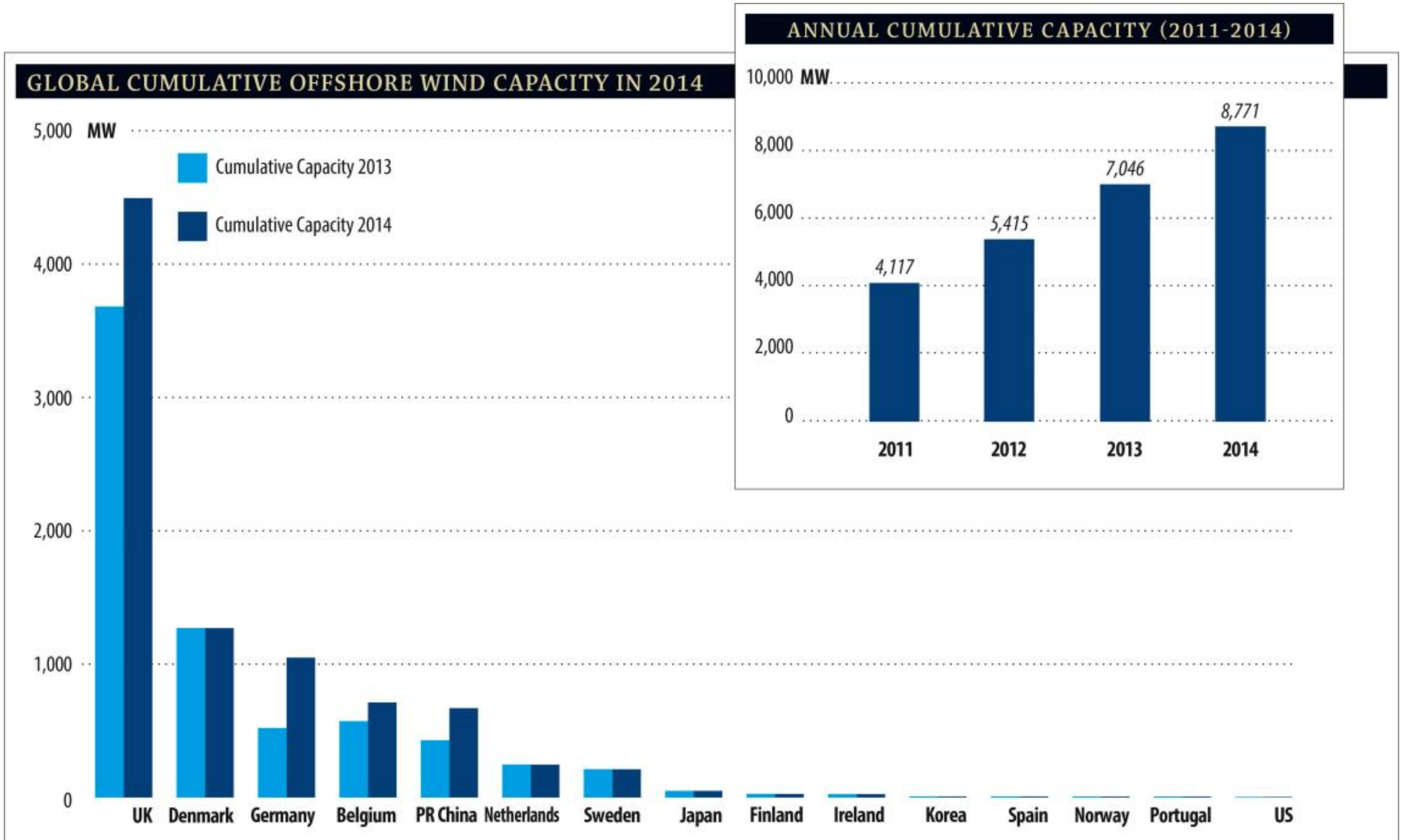
Country	MW	% SHARE
PR China*	23,351	45.2
Germany	5,279	10.2
USA	4,854	9.4
Brazil**	2,472	4.8
India	2,315	4.5
Canada	1,871	3.6
United Kingdom	1,736	3.4
Sweden	1,050	2.0
France	1,042	2.0
Turkey	804	1.6
Rest of the world	6,702	13.0
Total TOP 10	**44,775**	**87**
World Total	**51,477**	**100**

Source: GWEC

GWEC
GLOBAL WIND ENERGY COUNCIL

Beijing | Brussels | Washington





	UK	Denmark	Germany	Belgium	PR China	Netherlands	Sweden	Japan	Finland	Ireland	Korea	Spain	Norway	Portugal	US	
Total 2013	3,680.9	1,270.6	520.3	571.5	428.6	246.8	211.7	49.7	26.3	25.2	5	5	2.3	2	0.02	**7,046**
New 2014	813.4	0	529	141	241	0	0	0	0	0	0	0	0	0	0	**1,725**
Total 2014	4,494.3	1,270.6	1,049.2	712.5	669.9	246.8	211.7	49.7	26.3	25.2	5	5	2.3	2	0.02	**8,771**

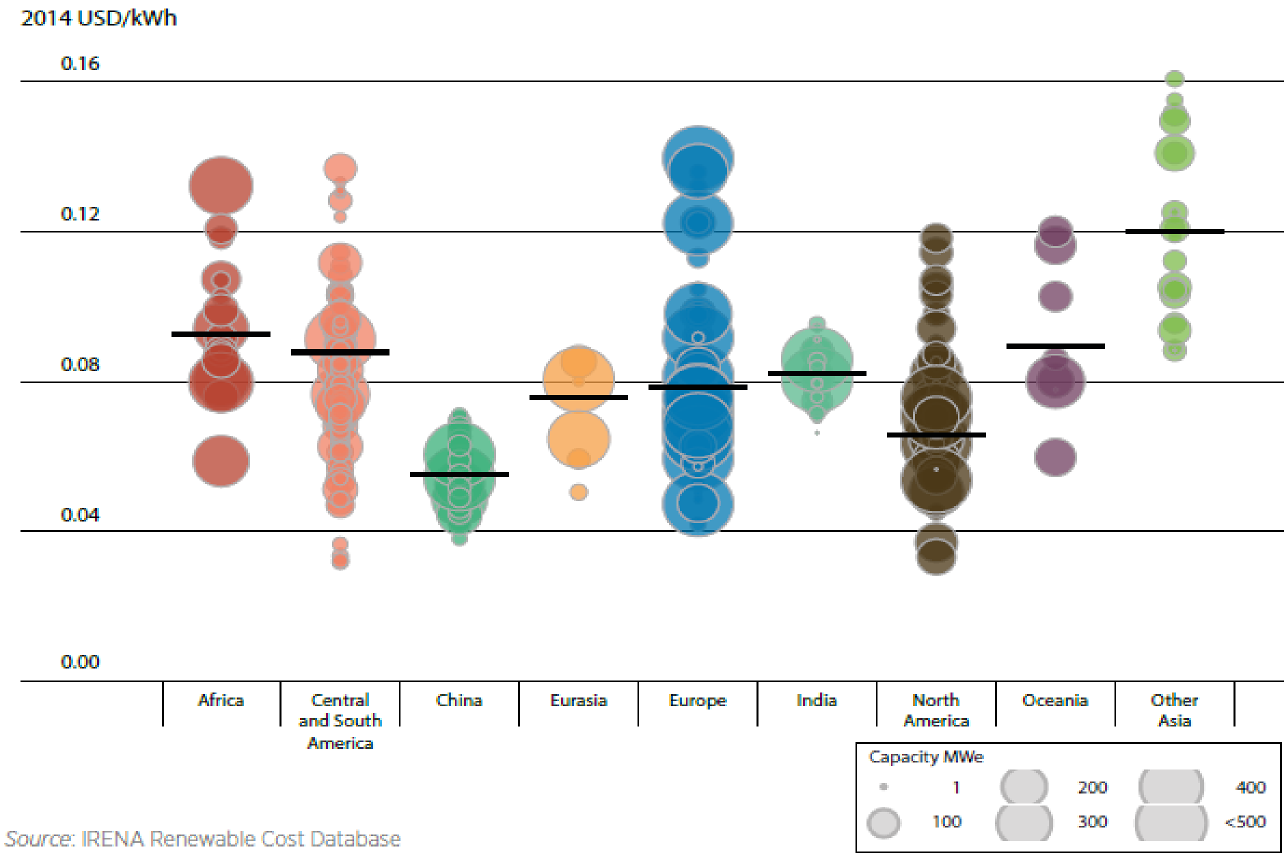
Source: GWEC

New Markets


KOREA
TUNISIA
MONGOLIA
MEXICO
MOROCCO
EGYPT
PAKISTAN
THAILAND
VIETNAM
ETHIOPIA
KENYA
SRI LANKA
TANZANIA
BRAZIL
URUGUAY
SOUTH AFRICA
CHILE

Costs

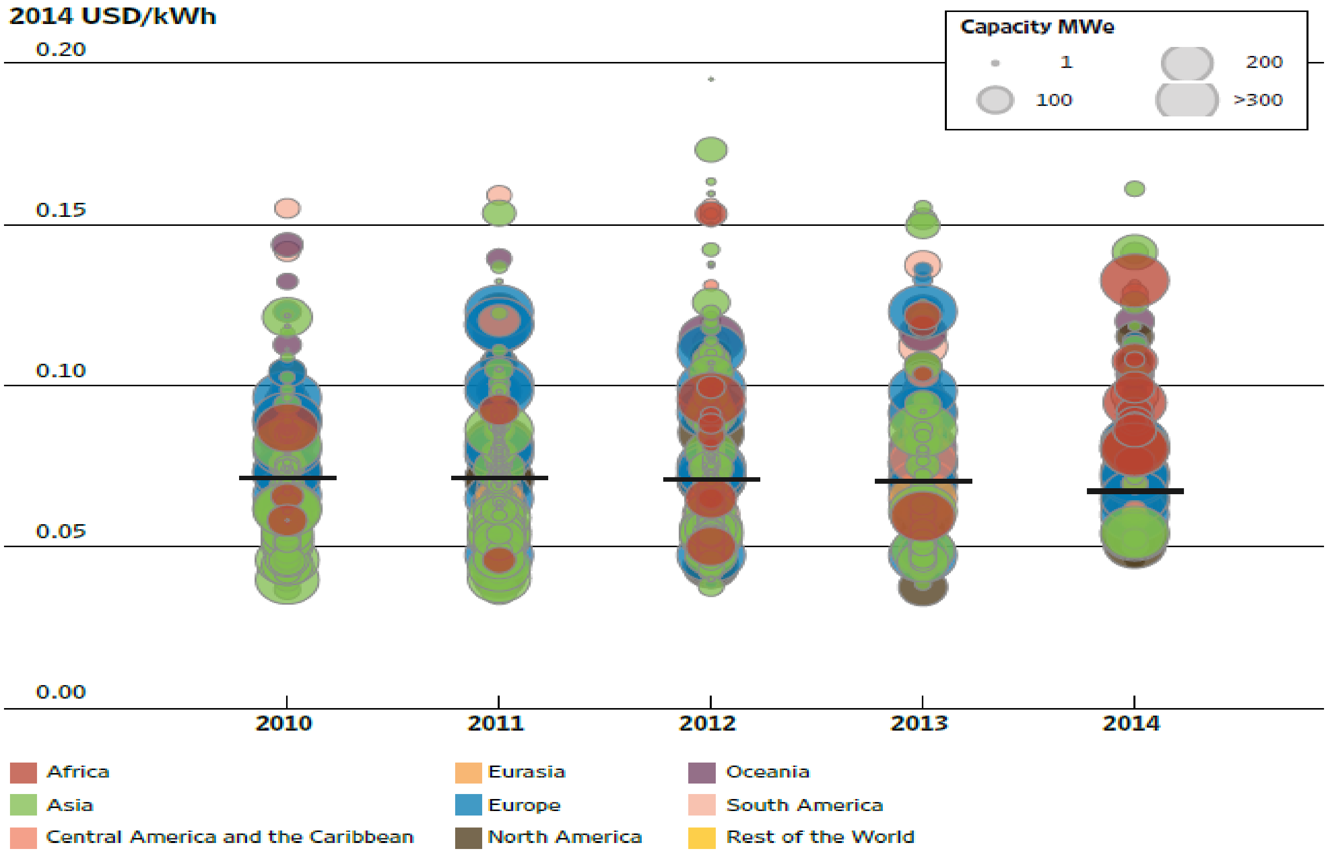
FIGURE 4.17: THE LCOE AND WEIGHTED AVERAGES OF COMMISSIONED AND PROPOSED WIND PROJECTS BY COUNTRY AND REGION, 2013 AND 2014



Source: IRENA Renewable Cost Database

Costs (2)

FIGURE 4.18: THE GLOBAL LCOE AND WEIGHTED AVERAGE OF COMMISSIONED AND PROPOSED LARGE WIND FARMS (>5 MW), 2013 AND 2014



Source: IRENA Renewable Cost Database

Costs (3)

1. 'Global Averages' don't tell you much – and change dramatically on the basis of exchange rates. What is interesting is the change in local currency over time.

2. Wind is now the cheapest way to add new generation capacity to the grid in most of the US, much of China, and all of Brazil, South Africa, Mexico, Turkey, Australia, New Zealand, and many others, and the list is growing year by year.

3. Why so expensive in Japan?

   - EPC costs
   - 'Special regulations', i.e., EIA and permitting
   - Lack of volume and market visibility
   - 'Renewables unfriendly' system – grid, structure of industry, etc.

Conclusions

2014 was a good year, 2015 is likely to be another

- China – maintain market size in 2015, may dip after that as FIT revisions come into effect. Offshore segment picking up.
- India could be the new China.
- US – 2014 better than 2013, and 2015 will be better than 2014. Same for Canada. After that?
- Europe – Germany very strong, #2 market for first time in more than a decade. Steady progress towards 2020 target. Post 2020 uncertainty remains, impacting offshore sector particularly.
- Brazil, Chile, Uruguay, Mexico driving Latin America, with other smaller markets contributing.
- Africa taking off, driven by Egypt, Morocco, South Africa, Ethiopia, Kenya and Tanzania. New markets in Senegal, Ghana and others.
- Wind power is back on track after 3-4 tough years.

Conclusions (2)

- Offshore wind at the beginning of industrialisation phase – next 5 years will be critical
- Costs need to come down – need stable framework and clear volumes
- Turbines are not the issue – it's everything else
- Value of offshore is more than just LCOE – volume, proximity to load center and high capacity factors
- No reason offshore wind can't follow onshore down the cost curve; however, for onshore it took 30 years.

- For wind as a whole: market drivers all still in place, and increasingly prominent: energy security; cost stability; macroeconomic security; local economic development and job creation; local environment and climate (decarbonisation)

GWEC
GLOBAL WIND ENERGY COUNCIL

Beijing | Brussels | Washington

Thank you!

For more information:

Steve Sawyer, GWEC

Steve.Sawyer@gwec.net