

Renewable Energy Investments of the Year 2019

Winners

ASIA-PACIFIC IS THE LEADING DESTINATION FOR GREENFIELD FDI IN RENEWABLE ENERGY, WHILE THE US IS THE TOP COUNTRY, DUBAI THE TOP CITY, GERMANY THE TOP SOURCE OF INVESTMENT, AND ENEL GREEN POWER AND CANADIAN SOLAR THE MOST ACTIVE INVESTORS. **SEBASTIAN SHEHADI** EXAMINES THE RESULTS OF **fdi**'S FIRST RENEWABLE ENERGY FDI RANKINGS

Renewable energy (excluding hydro energy) is the world's third biggest industry for greenfield FDI attraction, garnering \$307bn and 1417 projects between December 2013 and November 2018, according to greenfield investment monitor **fdi** Markets. Only the real estate and coal, oil and gas sectors are bigger. Renewable energy investments tend to be large in size, with an average capital investment of \$217m.

Regionally, the top source of investment is, by far, western Europe with 790 projects, followed by Asia-Pacific's 311. The dominance of Western European FDI into renewables is underlined by the fact that Germany and Italy are the world's top two sources of investment, and that three other Western European countries feature in the top 10. The US and China are the other notable players, taking third and fifth place, respectively.

In terms of destination for investments, the Asia-Pacific region has attracted the majority of FDI projects in renewables with 454, followed by Western Europe with 276. At a country level, the US and the UK have led the charge, accompanied by no fewer than six emerging markets in the top 10: Mexico, India, Chile, Brazil, Vietnam and the Philippines. Indeed, developing

economies have received the lion's share of greenfield FDI in renewables, attracting nearly 70% of all FDI projects.

Among cities, Dubai has attracted the most projects, followed by Hamburg and London. The most active investing companies are Italy's Enel Green Power (EGP) and Canadian Solar, with 27 FDI projects each, followed by Canada's Sky Power and Spain's Acciona Energia.

Winds of change

At first sight, it may seem concerning that greenfield FDI into renewables has remained steady since 2007, with no major increases. However, this is no surprise.

"We are doing more with less. The unit cost of the technology of wind and solar has been declining steadily, annually. So if you look at the graph of installed capacity, not investments, you will see growth," says EGP chief executive Antonio Cammisecra.

Indeed, global clean energy investment dropped by 8% in 2018, hitting \$332.1bn, according to recent figures from Bloomberg NEF. However, the report found that globally the number of new solar and winds projects still increased due to significant cuts in the cost of solar and wind energy.

Policy matters

Last year's largest decrease in renewable energy investment occurred in China, as a result of a government policy that withdrew subsidies for solar projects from June, according to BloombergNEF.

Similarly, greenfield FDI into European renewables has significantly dropped since 2013 due to the reductions of feed-in tariff policies, and because many EU countries have achieved the first tranche of EU objectives for 2020, according to Mr Cammisecra.

Feed-in tariffs are designed to increase investment in renewables by offering long-term contracts and price-based support to renewable energy producers, such as financial guarantees for every unit of electricity that is produced, usually over a period of 15 to 20 years.

"The tariffs have been very effective, especially in Germany," says Anders Wijkman, vice-president of internationalist organisation the Club of Rome. "Some people criticised them for being too high, and too beneficial for the investor, while imposing too high a cost on society. That could be true. The government has now reduced tariffs a bit. They have been very positive in terms of bringing costs down for both wind and solar." ■



Reaching up: Dubai was the number one destination city for renewable energy investments

Cities

TOP 20 DESTINATION CITIES DECEMBER 2013-NOVEMBER 2018

CITY	PROJECTS
Dubai	9
Hamburg	8
London	7
Singapore	7
Benban (Egypt)	6
Edinburgh	6
Santiago	6
Bangkok	5
Hanoi	5
Ho Chi Minh	5
Aberdeen	4
Adelaide	4
Al Mafraq	4
Collinsville	4
Maria Elena	4
Port Augusta	4
Sydney	4
Accra	3
Bais	3
Ciudad Acuna	3

Regions

SOURCE REGION DECEMBER 2013-NOVEMBER 2018

REGION	PROJECTS
Western Europe	790
Asia-Pacific	311
North America	217
Middle East	52
Emerging Europe	32
Latin America and Caribbean	14
Africa	1

DESTINATION REGION DECEMBER 2013-NOVEMBER 2018

REGION	PROJECTS
Asia-Pacific	454
Western Europe	276
Latin America and Caribbean	246
Africa	141
North America	134
Emerging Europe	122
Middle East	44

Countries

TOP 20 SOURCE COUNTRIES DECEMBER 2013-NOVEMBER 2018

COUNTRY	PROJECTS
Germany	143
Italy	136
US	136
Spain	117
China	110
France	106
Canada	81
UK	64
Denmark	34
Japan	34
South Korea	34
Thailand	32
Netherlands	30
Norway	27
Singapore	27
Finland	22
Ireland	22
Belgium	21
UAE	19
Portugal	17

TOP 20 DESTINATION COUNTRIES DECEMBER 2013-NOVEMBER 2018

COUNTRY	PROJECTS
US	117
UK	112
Mexico	80
Japan	74
India	73
Australia	66
Chile	56
Brazil	49
Vietnam	49
Philippines	39
Egypt	34
France	34
China	28
Germany	28
Turkey	28
South Africa	24
Spain	24
Netherlands	20
Indonesia	18
Canada	17

Sectors

TOP INDUSTRY SECTORS DECEMBER 2013-NOVEMBER 2018

SECTOR	CAPEX (\$BN)
Real estate	504
Coal, oil and gas	491
Renewable energy	311
Communications	221
Chemicals	199
Automotive OEM	185
Metals	165



Panel show: Enel's photovoltaic power plant in the Mexican desert is the largest solar plant in the Americas

Companies

TOP INVESTING COMPANIES DECEMBER 2013-NOVEMBER 2018

COMPANY	PROJECTS
Enel Green Power	27
Canadian Solar	27
SkyPower	16
Acciona Energia	14
SunEdison	14
Iberdrola	13
Orsted (Dong Energy)	13
Building Energy	12
OPDE	12
Enel Green Power North America	11
Neoen	11
ACWA Power International	10
Enel Green Power Mexico	10
Fotowatio Renewable Ventures	10
Access Infra Africa	9
Gestamp Wind	9
Scatec Solar	9
Volitalia	9
EDF Renewable Energy	8

Q&A: ANDERS WIJKMAN

A renewable appeal

THE CO-PRESIDENT OF THE GLOBAL THINK TANK CLUB OF ROME AND FORMER MEMBER OF THE EUROPEAN PARLIAMENT TALKS TO **SEBASTIAN SHEHADI** ABOUT THE URGENT NEED FOR RENEWABLE ENERGY INVESTMENT IN EMERGING MARKETS



CURRICULUM VITAE

ANDERS WIJKMAN

2012

Club of Rome
Co-president

Previously

Association of Recycling
Industries in Sweden, chairman;
World Future Council, member

Q Where would you like to see more investment in green energy?

A For modernisation and poverty reduction to take place in any low-income country you need access to modern energy carriers. Billions of people are [living in energy poverty]. If access to renewable energy is not there, these countries will follow the path of the rest of the world and probably use coal, oil and gas. Investing in coal, oil and gas locks you in for decades because of the nature of the investments. The world cannot afford more fossil fuel investments.

If you look at 2017, investment in renewables in developing countries was in the range of \$170bn. Out of that, \$130bn was in China, another \$10bn was in Brazil and another \$6bn or \$7bn for India. That leaves little more than \$20bn for the rest of the developing world. For many low-income countries, renewable energy investments are looked upon as being risky, so investors need guarantees. The World Bank, regional development banks and aid agencies need to increase their investment guarantee programmes. Regional development banks need to give a higher priority in general to energy. There has been this notion that the private sector will take care of everything related to energy. That is wrong, not least among the poorer parts of the population.

Q Is the growth in green energy investment happening quickly enough?

A If you look at the world at large, fossil fuels make up 80% of energy emissions today. That has been the case for the past 40 to 50 years. I started energy policymaking in the 1970s, and the ratio was 84%, and now it is about 80%, so regrettably it is a slow process. The traditional fossil fuel industries have a

tremendous dominance, and in many contexts they are still looked upon as more secure. Also until very recently the price differential with renewables was quite large. Then of course you have storage problems; the sun doesn't always shine and the wind doesn't always blow. If carbon taxes had been higher we would have seen more investment in renewables. I also think the shale revolution provided a lot of relatively cheap gas, which is then being exported around the world.

Q Is solar energy the silver bullet?

A The cost of solar panels has been reduced by 29% yearly for the past 10 years. All the expectations early on about the role of solar energy were totally wrong. We had a much more rapid expansion. One of the reasons is, of course, that costs have gone down so much faster [than we thought]. Even if the total level of investment, in terms of billions of dollars, has not gone up in the past four to five years in annual figures, we will still have much more capacity coming forth because of lower prices. If we were to continue to expand solar investments just as we have in the past 10 years, solar energy will take over the world in 2040.

Q However, there are still big problems with renewable energy storage.

A Yes, but there is progress, not least with regard to demand-side management. But what the future battery will look like, and what materials will be used, is an open question. Can we continue to depend on cobalt and lithium, which are quite rare and rely on deposits limited to a few countries? This is why effective recycling technologies have to be developed with urgency. ■



THE WORLD BANK, REGIONAL DEVELOPMENT BANKS AND AID AGENCIES NEED TO INCREASE THEIR INVESTMENT GUARANTEE PROGRAMMES

