Euler Hermes Economic Research

Economic Insight

Renewable energy: Seeing the full half of the COP

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Executive summary

- As delegates meet for the COP22 climate conference, renewable energy emerges as a big ticket item. Renewables now account for 35% of electricity generation in Europe but only 13% in the U.S. This divergence is in line with new investments: USD2.300bn since 2005 and 687 expected for 2016-2017.
- Investments in renewables have reached a new record of USD286bn in 2015 despite low oil prices. Wind and solar energy lead, while other clean energy sources, especially biofuels, have fallen behind in the last eight years. Profit margins are far from impressive. Solar struggles with an average -10% operating margin on a yearly average, while wind stands at -1%.
- Solar continues to attract investments (USD380bn expected for 2016-2017) and surpass its deleveraged competitor, the wind industry, with USD270bn.
- Over the next 3-5 years, solar companies should yield higher profitability rates, whereas the wind industry, will achieve a moderate 5% margin (2016 estimate).

Global investments in renewables peak ahead of Cop22 despite low oil prices; solar and wind are the main beneficiaries

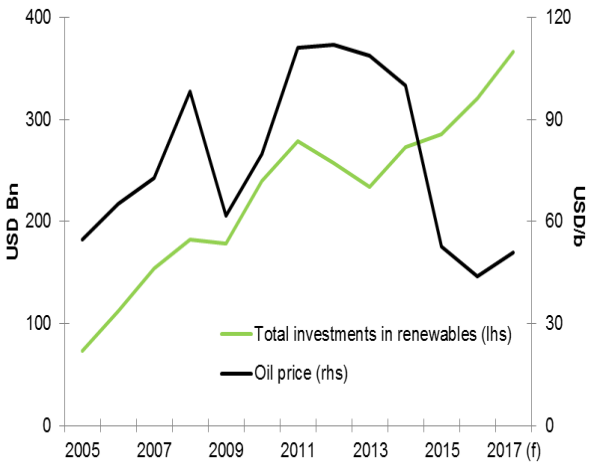
Morocco hosts the 22nd Conference of the Parties (COP22), where negotiators from 180 countries attempt to chart the way forward towards tackling climate change head on and implementing the Paris Agreement. One of the biggest items on the agenda is renewable energy. Can delegates find ways to implement policies and allocate funds necessary to support the industry and steer it onto a profitable course?

Talking about renewables generally refers to their use in power generation. Last year, renewables accounted for only 35% of electricity generation in Europe (in GWh) vs. 13% in the U.S. while combustible fuels accounted for 38% of electricity generation in Europe vs. 68% in the U.S.

However, these market shares are likely to rise as we expect global investments in renewables to continue increasing as well, despite the current low-for-longer oil price.

Indeed, the evolution of oil prices has negatively affected the pace of renewables growth, but the correlation between oil price and investment in renewables ended in 2013 (Chart 1).

Chart 1
Global investments in renewables and Brent price



Sources: FS-UNEP, BNEF, Euler Hermes

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In other words, renewables must not be seen as an oil substitute, because refined oil appears to be the inescapable fuel of all means of transport and can no longer be a real source of power generation. Renewables and oil complement each other.

Investments in renewables, as a whole, have actually increased by +10%, on a yearly average since the oil price collapsed by -60% in 2014, reaching an all-time new high of +USD286bn in 2015.

Nevertheless, this global trend masks uneven trends by different renewables (Chart 2).

Since then, only wind and solar renewables have been invested in and have amounted to USD110bn for the former, in 2015 (+80% compared to 2007) and USD161bn for the latter (+313%) in 2015.

Investments in other renewables such as biofuels, biomass and hydropower have been falling behind for the past eight years. Between 2008 and 2015, they dropped by -15% on a yearly average to less than USD20bn. This accounts for less than 6% of the total investments per annum in renewable energies as a whole.

The three main types of other renewables have been in a stagnant state since the beginning of the decade, mainly because biofuels have suffered from the 2008 bubble burst. This sent them back into the last decade when agricultural raw material prices were at an all-time high (Chart 3). With a very expensive feedstock price, investments in biofuel renewables nosedived by -11% on a yearly average between 2005 and2015.

Renewable biomass was unable to withstand any obstacles after the beginning of this decade, which is why from 2005-2015 investments in biomass renewables dwindled by -3% on a yearly average.

The problem with hydropower is simple. Globally, there are few new locations left where dams can be built.

And as far as dams are concerned, water supply is a big issue as well as political squabbles between countries, when they are not at war with each other. This explains why new investments in hydropower dropped by -6% on a yearly average in 2005-2015.

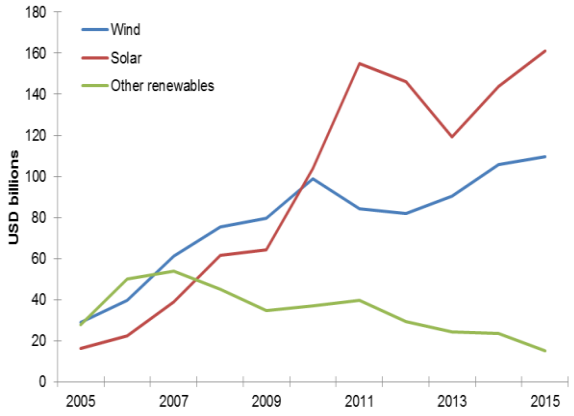
In spite of increasing levels in 2007-2015, investments in wind and solar renewable energies have faced major opposition.

In 2011, the wind industry has had to cope with a -15% fall in new investments worldwide, compared to 2010. A year later, the solar industry suffered a -6% drop in new capacity investments.

In 2012, warnings became a crisis, explaining why the wind and the solar renewable sectors experienced such significant financial losses during this period (2011-2013).

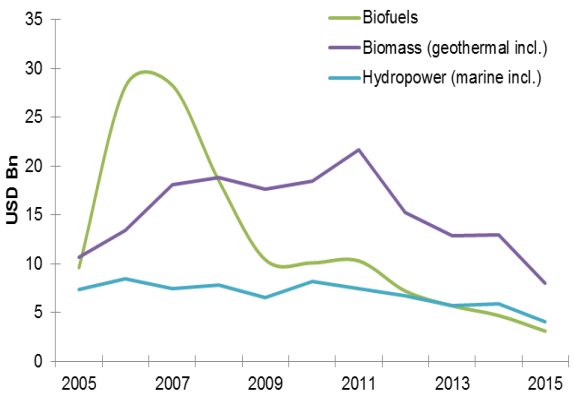
The meltdown in the solar renewables industry brought on a wave of bankruptcies, for the solar companies, in a short period of time (2012-2013).

Chart 2
New global investments by main type of renewables (Yearly amounts)



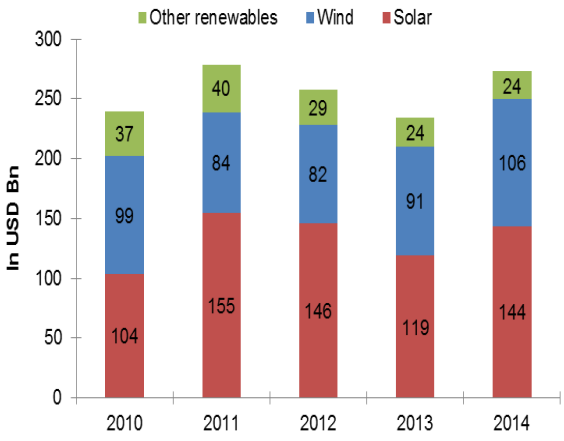
Sources: FS-UNEP, BNEF, Euler Hermes

Chart 3
Global investments by type of renewables



Sources: FS-UNEP, BNEF, Euler Hermes

Chart 4
Cumulated investments in renewables worldwide per year



Sources: BNEF, Euler Hermes

A breath of fresh air: The wind sector has overcome former hurdles

Financial results of our panel show (Chart 5) that the operating margin of the wind energy companies amounted to -1% on a yearly average between 2011-2013 (with 2012 being the worst fiscal year).

The past ten years indicate that the operating margin rate of the wind sector has been unable to exceed the moderate level of 5% on a yearly average for a long period of time. This means that the wind industry might be resilient to headwinds; however, it has a hard time delivering profitability when compared to the solar industry, in the long run.

Chart 6 presents a view of the financial cost of deleveraging in the wind industry. It shows that the difference between the operating and the net margin rates lie in variations of both financial and outstanding results.

The implemented restructuration plans for the wind renewable companies explains why the net margin rate of the wind sector took three years to return to a positive state.

Eventually, the recovery in net margin rates of the wind sector, expected at around 5% in 2016, has been the consequence of a brutal and fast-paced debt relief over the past two years (2014-2016). As a result, the gearing of our panel should be less than -20%, as soon as the end of this year.

The solar sector has yet to break free of a gloomy past

Unlike the renewable wind sector, the solar industry experienced three consecutive years of devastating financial losses since 2011 (Chart 7) and the solar renewable companies have only started increasing revenues in 2014.

However, returning to their previous operating margins, which exceeded the +20% level (i.e. triple that of the wind sector) since the last decade, with the exception of 2009, has proven difficult.

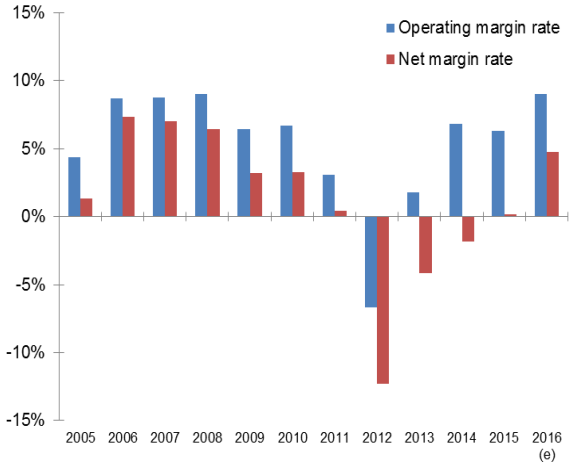
As soon as operating losses appeared in the solar renewable industry in 2011, the debt leverage position has become unbearable.

In 2013, average gearing, a way of measuring the level of indebtedness, of the solar sector, skyrocketed to an all-time high of 140% (Chart 8).

This explains why the net margin rate plummeted so deeply, in 2012. Additionally, the fact that the solar industry underwent several restructuration plans, especially across Western countries, only aggravated matters.

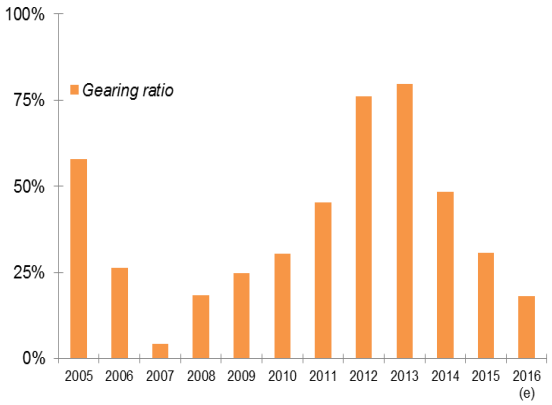
Because gearing is expected to stay at the high level of 85% in 2016, renewable solar companies are unable to regain their large former operating margins, which have decreased to a weak level of -2% on a yearly average, far below their past level during profitable periods.

Chart 5
Wind energy company margins* on a yearly average



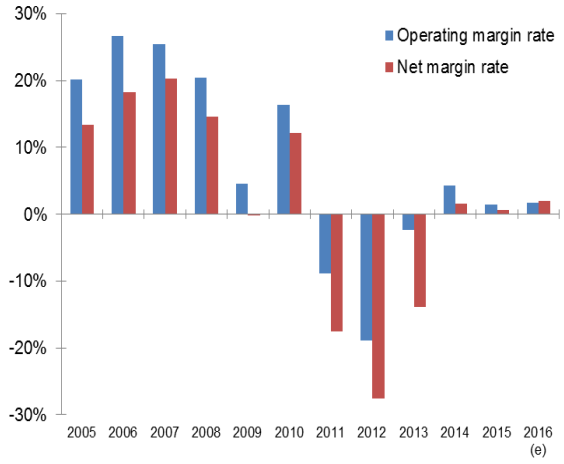
**Panel of the ten largest listed companies in the wind renewable sector*
Sources: FS-UNEP, BNEF, Euler Hermes

Chart 6
Gearing of wind renewable players (Euler Hermes panel)



Sources: IRIS, UN, Euler Hermes

Chart 7
Solar energy company margins* (yearly average)



**Panel of the twenty largest listed companies in the solar renewable sector Sources: Bloomberg, Euler Hermes estimation*

This is apparent for companies located in Europe (mostly in Germany), whose prior revenue reached EUR100mm, and more specifically five companies with a cumulated turnover of EUR1.9bn (see table below).

Company	Revenue (in EUR MM)
Q-Cells	701
Conergy	500
Gerhlicher Solar	323
SolarHybrid	205
Solar Millenium	190

The tipping point was when the U.S. renewable company SunEdison, whose revenue was more than USD2bn only two years ago, went bankrupt at the very beginning of 2016.

Clearly, the extremely high debt level for the renewable industry, during the first few years of this decade, forced renewable companies to reduce indebtedness from 2014 on.

Beyond Cop 22: What lies ahead for companies and industries?

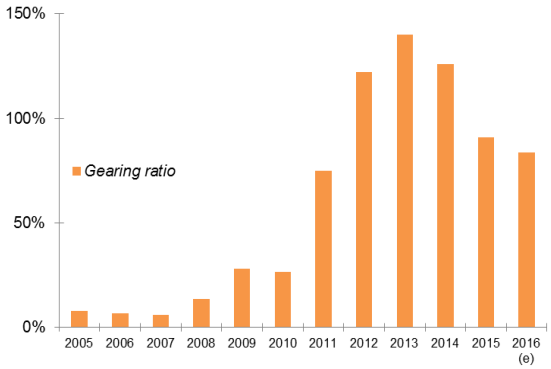
Fortunately, financial investors seem to have cautiously regained confidence in an industry that has just managed to survive a volatile period. The past two years, have shown that investments in renewables are once again increasing.

Worldwide investments in renewables, as a whole, are expected to exceed USD367bn next year and to grow by around +10% yearly until 2017 (Chart 9).

Whereas developed countries expected to see their renewables investments grow by +3% every year between 2014 and 2017, we expect the developing countries to pull themselves upwards at +18% per year, over the same period.

In 2014, Asia has caught up with the equal investment amounts in renewables of developed countries. Asia's advancement in renewables is likely to speed up in the middle run, as a result, of a global increase in renewable investments.

Chart 8
Gearing of solar renewable players (Euler Hermes panel)

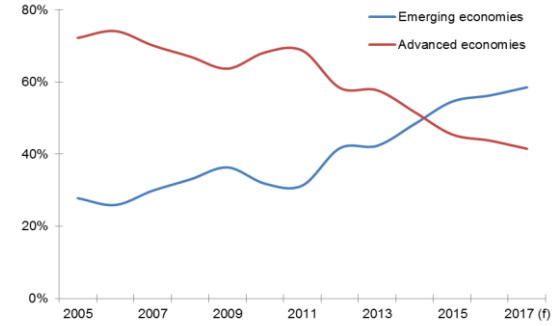


Sources: Bloomberg, Euler Hermes estimation

Chart 9
Global investments in renewables

Sources: IRIS, UN, Euler Hermes estimations

Chart 10
Global investments in renewables (in value) by area



Sources: IRIS, UN, Euler Hermes estimations