

Do we need to worry about renewable energies development?

Part 1: are renewable energies “linked” to the price of oil?



Summary:

- The period that saw oil prices dropping did not lead to a strong backlash in the renewables sector
- The link between oil and renewables is very complex and limited: they mostly do not compete in the same markets (except some notable exceptions, such as the car industry or electricity production in certain low-income countries)

Key words: renewable energies, oil prices, energy transition, fossil fuels, environment, green investments

Whatever the underlying causes behind it, the drop in oil prices that we have been observing since mid-2014¹ may have an intuitive side-effect: a backlash in the development of renewable sources of energy. This “intuition” comes from the idea that low oil prices would encourage the direct consumption of fossil fuels and sources of energy, throwing a spanner in the works of climate enthusiasts for whom the success of the COP 21 held in November 2015 in Paris would lead to a greener future. Indeed, as the Financial Times mentions it², tumbling oil prices are no less than “kryptonite” to clean tech firms and the renewables sector in general.

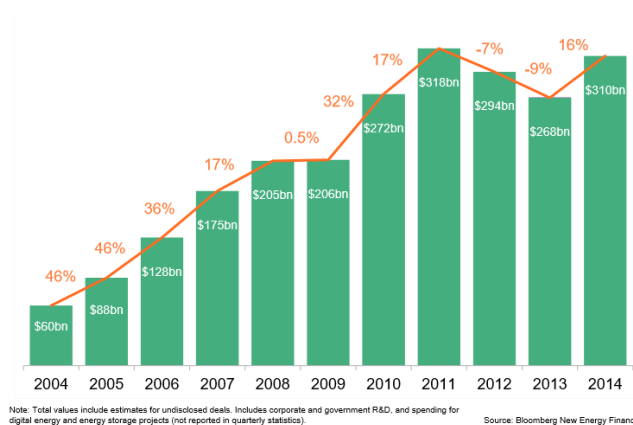
But is there a real link between clean energies development and oil prices? And if yes, is it going the direction we really think?

An epiphenomenon?

Data analysis show that the period that saw oil prices dropping did not see a wave of bankruptcies in the clean tech firms, nor major losses in the green funds: global new investments in clean energy rose by 16% to \$310bn in 2014, after two years of decline³,

and equity investments rose 54% in 2014, as renewable companies’ access to markets is an implicit goal in a sector which is still helped by public subsidies which allow them to earn more and more market shares and to make profits in a goal to become more competitive versus fossil fuels (even though, as we will show later in the paper, the role of the subsidies in the competitiveness of the fossil fuels tends to decrease progressively).

Graph 1: global investments in the renewables’ sector (source BNEF)



¹ <http://www.nasdaq.com/markets/crude-oil.aspx?timeframe=5y> (the chart shows that Crude Oil WTI fell from \$100 a barrel in July 2014 to \$50 in January 2015, more or less stabilized then)

² <http://www.ft.com/cms/s/0/d328ee8a-8605-11e4-a105-00144feabdc0.html#axzz4IXJvHnmz>

³ <http://about.bnef.com/presentations/clean-energy-investment-q4-2014-fact-pack/content/uploads/sites/4/2015/01/Q4-investment-fact-pack.pdf>

It is true though that the second half of 2014 saw weak performances in the returns of some of the major cleantech firms, but longer-term data clearly show that this has been a temporary phenomenon, mainly due to the overreaction of markets when it comes to exotic assets (see below): the Danish leader in the wind industry Vestas⁴ is a good example of this idea, with share prices decreasing sharply from July to December 2014 before recovering entirely in 2015 and climbing regularly since then; same for the hybrid vehicles US-based Tesla Motors – and the hybrid cars sector as a whole⁵. For the bulk of the other firms in the sector, the 2014-15 period even saw accelerating activity and investments, such as the US private equity group KKR which bought the Spanish solar developer Gestamp; the German firm Siemens won a \$1.2bn for wind turbines from Denmark's Dong Energy, and the US-based SunEdison agreed to buy Vivint solar installation group. Cleantech funds and renewables producers hence look like showing a strong resilience, or even an absence of reaction, to oil prices plunge, let's now explain why.

A complex link in theory and in practice ...

Theoretically, seeking a one-way intuitive answer to the link between oil prices and renewables development might be much more complicated than expected. On the one hand, high oil prices are a positive driver to clean energies development, as consumers tend to seek other sources of energies (solar panels, windmills, biomass) that might be cheaper than fossil fuels, leading to an increased demand for the green industry; however, on the other hand, high oil prices encourage investments in the fossil fuels sector, as production margins are expected to be higher. This paradox is inverted when oil prices are low, and we cannot assess which effect might be the strongest.

The first and most important thing we need to keep in mind on why oil and renewables prices are not so much linked, is the fact that they **operate in separate markets**: oil is essentially used for transport (cars, trucks, planes) and very little for power generation (5% globally); on the other side, renewables are mostly used to generate electricity. On an economic point of view, oil and renewables are then not substitutes; when the price of one decreases, demand for the other does not mandatorily decrease; then, renewables development might be linked to the price of electricity and not to the price of oil, and the former is not entirely a function of the latter. The only possible link between oil prices and renewables energies might then be seen through the price of gas, which is a major player in power production (27% in the USA and 19% in Europe) and then becomes the floor price for power generation, but which is also linked to the price of oil in some markets, especially in Europe, through "spot" contracts.

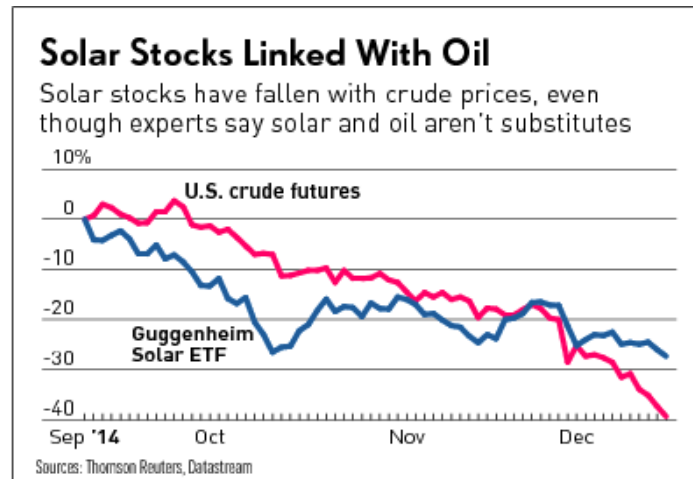
However, even a decrease in the spot prices of gas does not mean an immediate danger for renewables, first because gas displaces coal (good for the environment), second because a permanent source of energy (gas or coal) is essential as a backup for the production of renewables which is inherently intermittent, and third because most of the cost of electricity serves to cover the

⁴ <http://www.bloomberg.com/quote/VWS:DC>

⁵ <http://www.hybridcars.com/july-2016-dashboard/>

transmission and distribution infrastructure, and not the fuel source⁶. On top of that, renewables are “largely isolated”⁷ from fossil fuels prices as the power they produce is sold under long-term contracts at fixed costs; highly-rising capital, operating and financing costs share also a big part of these fixed costs.

Graph 2: solar stocks (e.g. of Guggenheim Solar ETF) vs oil prices



The conclusion of this theory of the “separation” is that fossil fuels and clean energies are completely de-linked. However, this clear separation of roles between oil and renewables may not be so clear as we observe the good correlation between renewables stocks and the price of oil, especially on the downward path starting in Q3 2014 – the example of Guggenheim Solar ETF stocks vs US Crude futures is characteristic of this phenomenon (see graph). In fact, this irrational and purely psychological correlation can be explained by the public consciousness that the price of oil represents the price of energy in general, which may lead to a disincentive for investors, policymakers and customers to support renewables as they think that all energy is cheap since oil is cheap⁸. Apart from this consideration, oil and renewables are then completely separate in their use, and there is no reason that the latter moves in line with the former through electricity prices; the only direct link might be found through the car industry, where electric and hybrid vehicles might suffer from a resurgence of their cheap-gasoline-driven counterparts; also, the existence of mutual funds and exchange traded funds (ETFs) holding both renewables and oil shares may explain their intertwined evolution.

⁶ <http://www.investors.com/news/technology/why-solar-stocks-have-fallen-with-oil-price-s/>

⁷ <http://www.ft.com/cms/s/0/1ac357e4-3a06-11e5-bbd1-b37bc06f590c.html?siteedition=intl#axzz4IXJvHnmz>

⁸ <http://www.forbes.com/sites/edfenergyexchange/2015/01/05/why-falling-oil-prices-dont-hurt-demand-for-renewable-energy/2/#724609a1198b>

Conclusion

As a conclusion, we can assess that there is no fundamental link between fossil fuels and clean energies, at least in their use. However, several elements explain the dramatic development of renewables specifically in this low oil price period – this will be analyzed in the second part of this article you will find through this link.

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