

INDEPENDENT RESEARCH

6th April 2016

Utilities

Bloomberg	EDPR LI
Reuters	EDPR.LS
12-month High / Low (EUR)	7.3 / 5.7
Market capitalisation (EURm)	5,614
Enterprise Value (BG estimates EURm)	10,856
Avg. 6m daily volume ('000 shares)	444.7
Free Float	22.5%
3y EPS CAGR	8.2%
Gearing (12/15)	72%
Dividend yields (12/16e)	0.91%

YE December	12/15	12/16e	12/17e	12/18e
Revenue (EURm)	1,549	1,750	1,927	2,128
EBIT(EURm)	577.80	606.25	667.52	722.17
Basic EPS (EUR)	0.19	0.17	0.20	0.24
Diluted EPS (EUR)	0.19	0.17	0.20	0.24
EV/Sales	7.13x	6.21x	5.55x	4.96x
EV/EBITDA	9.7x	9.1x	8.2x	7.4x
EV/EBIT	19.1x	17.9x	16.0x	14.6x
P/E	33.7x	38.7x	32.2x	26.6x
ROCE	4.4	4.5	4.9	5.2



EDP Renovaveis

Renewables, what else?

Fair Value EUR7.5 (price EUR6.44)

NEUTRAL
Coverage initiated

In this report, we initiate coverage on EDPR, the renewables subsidiary of EDP, the largest listed Portuguese integrated utility. Armed with its strong expertise in the wind sector in Europe and North America, the group is engaging in a new growth area more geared to emerging markets and it is also looking at other technologies (*offshore wind and solar*). We appreciate the group's positioning in these high growth potential markets, but initiate coverage with a Neutral rating and a FV of EUR7.5 as political risk in U.S combined with demanding multiples make the case not so attractive, for now.

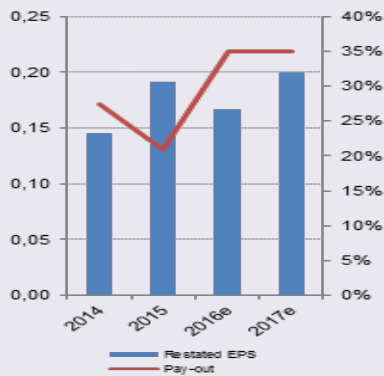
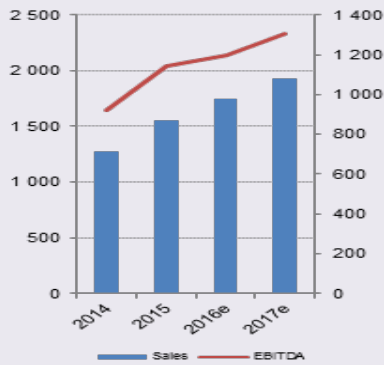
- A European leader within the renewables sector...**: With its **9.3GW** of installed capacities, o/w **99%** in wind and **53%** in Europe, EDPR is today one of the European leaders within the renewables sector. As a reminder, this subsector, within what we call the global utilities sector, is set to represent roughly **60-70%** of the **2012-2030e** additional worldwide installed capacities growth. EDPR as a pure player is therefore well positioned.
- ...offering strong and visible earnings growth**: The beauty of the subsector, when not impacted by political changes, is to offer strong and visible earnings growth to long-term investors. EDPR, within this universe, is one of the perfect vehicles to play the market (*large market cap, solid majority shareholder, margin resilience...*) even if dividend yield is not so attractive. We currently estimate the group will be able to generate an EBITDA CAGR of **8%** over the 2015-2020 period, clearly above SX6P Index and the European renewable players average. Besides this, most of the growth will come from outside Europe.
- Neutral, with FV at EUR7.5/share**: Despite the good track record of the group and the solid earnings growth we expect over the coming years, the negative short-term risk linked to the **US presidential elections** (*none of the credible candidates are strongly in favour of expanding renewables*), combined with the poor visibility on the EDPR's strategy on solar technology and the limited upside our model gives us (**16%**), leads us to initiate coverage with a **Neutral rating**. Inside our renewable subsector we continue to favour **Albioma & Voltalia** (*respectively 20% and 45% upside*).



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Edp Renovaveis



Company description

EDPR is a global leader in the renewable energy sector and the world's third largest energy company. At end 2015 the group operates 9.3GW of power capacities o/w 54% in Europe (Spain & Portugal mainly), 45% in North America (US mainly) and 5% in Brazil; with a strong exposure to wind technology. Through an important growth capex program the group ambitions to further raise its installed capacities by 500MW/y by 2017 (gross) to >9.5GW.

Simplified Profit & Loss Account (EURm)	2013	2014	2015	2016e	2017e	2018e
Revenues	1,316	1,278	1,549	1,750	1,927	2,128
<i>Change (%)</i>	2.4%	-2.9%	21.2%	13.0%	10.1%	10.4%
Adjusted EBITDA	903	920	1,142	1,198	1,306	1,432
EBIT	473	423	578	606	668	722
<i>Change (%)</i>	5.3%	-10.5%	36.5%	4.9%	10.1%	8.2%
Financial results	(262)	(250)	(285)	(293)	(302)	(296)
Pre-Tax profits	226	195	291	313	365	426
Exceptionals	0.0	0.0	0.0	0.0	0.0	0.0
Tax	(56.9)	(16.4)	(45.3)	(65.7)	(84.0)	(102)
Profits from associates	0.0	0.0	0.0	0.0	0.0	0.0
Minority interests	(34.0)	(51.9)	(78.9)	(102)	(107)	(112)
Net profit	135	127	167	145	174	211
Restated net profit	135	127	167	145	174	211
<i>Change (%)</i>	7.9%	-5.9%	31.2%	-12.9%	19.9%	21.3%
Cash Flow Statement (EURm)						
Operating cash flows	495	589	730	597	774	918
Change in working capital	(30.0)	(16.0)	(127)	(156)	(54.4)	(19.3)
Capex, net	(627)	(732)	(903)	(982)	(555)	(715)
Financial investments, net	230	562	(130)	600	0.0	0.0
Dividends	(58.0)	(79.0)	(115)	(34.9)	(50.8)	(60.9)
Other	(21.0)	(291)	186	(51.0)	(53.6)	(56.2)
Net debt	3,282	3,269	3,707	3,577	3,462	3,376
Free Cash flow	(126)	(143)	(172)	(384)	219	203
Balance Sheet (EURm)						
Tangible fixed assets	10,095	11,013	12,612	12,381	12,278	12,263
Intangibles assets	1,301	1,405	1,534	1,534	1,534	1,534
Cash & equivalents	255	369	437	567	682	768
current assets	1,207	1,476	1,093	1,295	1,477	1,639
Other assets	200	53.0	60.0	(63.6)	(173)	(253)
Total assets	13,058	14,316	15,736	15,714	15,798	15,950
L & ST Debt	4,502	4,969	5,385	5,385	5,385	5,385
Others liabilities	2,466	3,016	3,516	3,435	3,449	3,507
Shareholders' funds	4,914	4,914	4,914	4,914	4,914	4,914
Total Liabilities	13,058	14,316	15,736	15,714	15,798	15,950
Capital employed	10,639	11,237	12,064	11,989	11,941	11,944
Ratios						
Operating margin	35.93	33.14	37.31	34.65	34.64	33.94
Tax rate	25.19	9.45	15.50	21.00	23.00	24.00
Net margin	10.26	9.94	10.76	8.30	9.03	9.93
ROE (after tax)	2.22	2.01	2.44	2.11	2.50	2.99
ROCE (after tax)	3.91	2.47	4.41	4.51	4.89	5.19
Gearing	69.74	72.66	72.39	69.89	67.54	65.42
Pay out ratio	25.85	27.47	20.94	35.00	35.00	35.00
Number of shares, diluted	872	872	872	872	872	872
Data per Share (EUR)						
EPS	0.15	0.15	0.19	0.17	0.20	0.24
Restated EPS	0.15	0.15	0.19	0.17	0.20	0.24
<i>% change</i>	7.9%	-5.9%	31.2%	-12.9%	19.9%	21.3%
EPS bef. GDW	0.15	0.15	0.19	0.17	0.20	0.24
BVPS	6.50	6.63	6.85	6.97	7.11	7.29
Operating cash flows	0.57	0.68	0.84	0.68	0.89	1.05
FCF	(0.14)	(0.16)	(0.20)	(0.44)	0.25	0.23
Net dividend	0.04	0.04	0.04	0.06	0.07	0.08

Source: Company Data; Bryan, Garnier & Co ests.

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1. Investment Case

Why the interest now?



The reason for writing now

We are initiating coverage of **EDPR**, the green affiliate of **Energia de Portugal** (77.5%), the largest listed Portuguese integrated utility. The global need for new renewable capacities in both mature and emerging markets is clearly providing strong opportunities for the group, which is specialised in wind technologies. The entire capacity expansion will come from self-funding, but to the detriment of the return to shareholders.

Cheap or Expensive?



Valuation

We are initiating coverage of EDPR with a **Neutral rating** and a FV of **EUR7.5/share**, reflecting only **16%** upside to the current share price. Our FV is based on a combination of two methods: **SOTP** (50%) and a **DCF** (50%).

When will I start making money?



Catalysts

Next catalyst is the Q1-16 earnings presentation (*4th May 2016*). We see any update on the group's 2014-17 strategic programme as a potential catalyst as well as an update on targets beyond 2017. The group is about to unveil its new targets during an investor day on **May 5th**.

What's the value added?



Difference from consensus

We currently stand **2%** and **0.6%** below consensus on 2016 and 2017 EBITDA levels, and respectively **16%** and **15%** below on net reported income for both years.

Could I lose money?

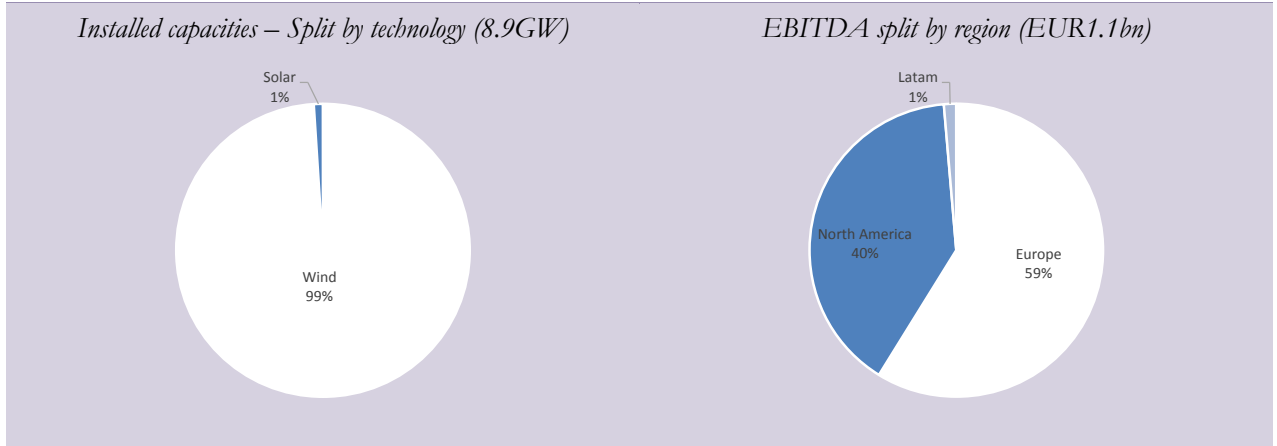


Risks to our investment case

We identified negative risks to our investments case: A lower USD (rate at **1.13** in our model) could negatively alter our estimates and our FV (see section on the US); as well as a change in regulations for renewables pricing mechanisms in Spain, Portugal and US. Political instability in Spain and Portugal could also create risks for EDPR's investors. **On the contrary**, higher USD and lower political uncertainties for the sector, in U.S and in Spain & Portugal could have a positive impact on our estimates and FV.

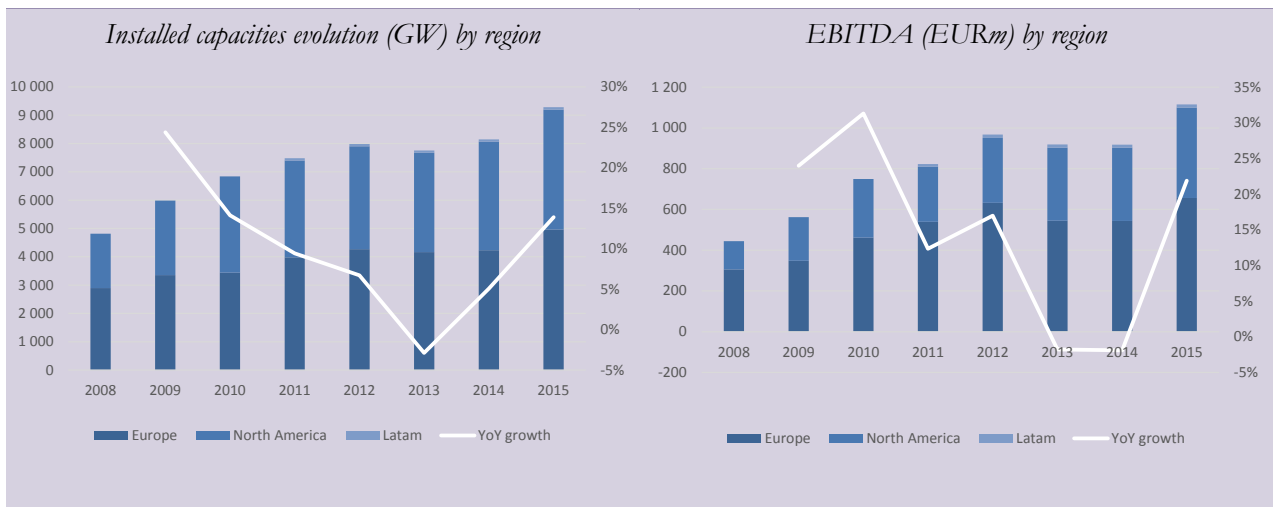
2. EDPR in six graphs

Fig. 1: EDPR – Installed capacities split & EBITDA split by region (2015)



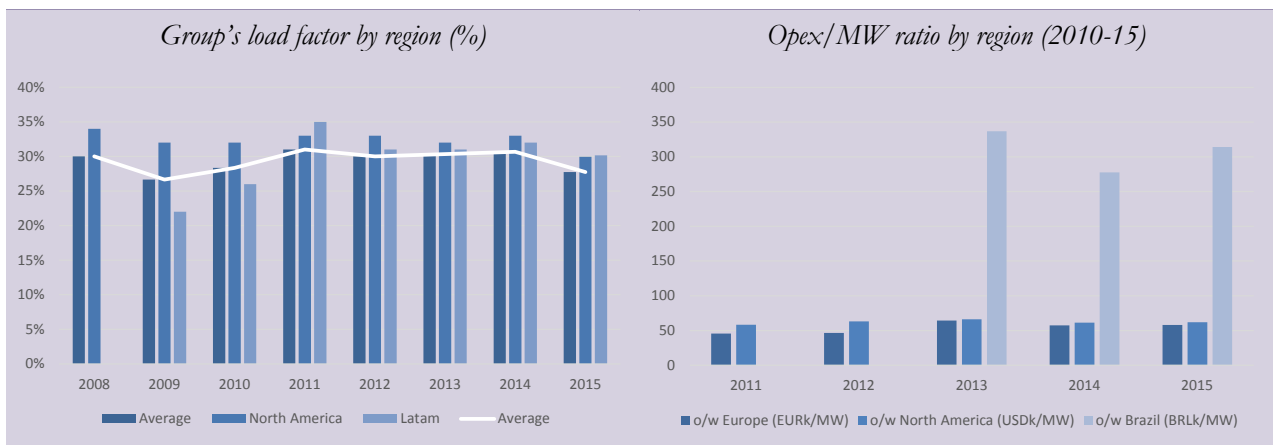
Source: Company Data; Bryan, Garnier & Co ests.

Fig. 2: EDPR – Installed capacities evolution & EBITDA evolution (2008-15)



Source: Company Data; Bryan, Garnier & Co ests.

Fig. 3: EDPR – Load factor evolution & opex/MW (2008-15)



Source: Company Data; Bryan, Garnier & Co ests.

3. Renewables, what else?

The energy world has dramatically changed since the **2008 financial crisis**, not only due to the “direct impacts” on mature markets’ economies but also due to the massive shift in power mix imposed by the European Union in Europe and by more environmentally-friendly governments in North America or Asia. In mature economies, it is important to remember that power demand is driven (*upward or downward, depending on the country*) predominantly by **climate effects** and no longer by **higher consumption per capita**. The energy transition imposed by governments is therefore totally modifying the structure of the power market itself, as new renewables capacities are not being built up to face higher power demand, but to replace the traditional power generation assets, while not supporting the pricing pressure and pricing volatility they created. Back in 2008, in Europe (EU27), out of **808GW** of power installed capacities, new renewables (*excluding hydro, which is an old technology and which is not intermittent*) represented only **12.4%** of the total capacities. At end 2014, these same technologies were at the origin of **140%** of the capacities created over the period (*net of capacity closures on traditional fossil fuel and nuclear assets*), representing **26%** of the total 2014 installed power mix. We assume this growth is **unlikely to calm down** as regulations are pushing for additional renewables in the mix, and as renewables technologies’ **LCOE (Levelised Cost of Energy) is becoming more and more competitive** compared with the traditional power generation assets, despite the recent decline in commodity prices.

EDPR, which remains **77.5%** owned by its parent company, **Energia de Portugal**, following its IPO in 2008, is the renewables arm of the Portuguese integrated utility. Its business model is therefore **100% geared** to this high growth potential market, **for better or for worse**. Given we assume renewables will continue to offer, in the middle term, strong earnings growth potential combined with visibility on future cash flows, **we believe the group’s current positioning is for the best**.

EDPR now has strong ambitions to expand outside Europe

Historically, logically present in **Spain and in Portugal** (*still 38% of the group’s sales*), in the wind power generation market more precisely, EDPR now has strong ambitions to expand outside Europe, by reinforcing its good position in **North America** (*31% of the group’s sales*), and by developing a new franchise in **Latin America** (*a region which according to IEA is set to represent roughly 8-10% of the net additional renewable power capacity between 2014 and 2020, while China is set to represent 38%*). This expansion process could also come from increasing the group’s market share **in the solar market**, which is currently very small.

EDPR is offering mid- to long-term investors: **1/ solid earnings growth potential** (*8% EBITDA CAGR over 2015-20e*), **2/ good visibility on future cash flow**, and most importantly **3/ a safe exposure to emerging markets due to regulated contracts in these markets** (*only a translation risk*). The recent delisting of **Enel Green Power** in March (*March 31st 2016*) following the takeover by its parent company (*Enel*) could be favourable to EDPR as some investors will continue to prefer investing in a pure renewable energy (RnE) player similar in size and business model than being exposed partially through a new stake in Enel.

Despite these positive elements, the negative short-term risk linked to the **US presidential elections** (*none of the credible candidates are strongly in favour of expanding renewables*), combined with the poor visibility on the EDPR’s strategy on solar technology and the limited upside our model gives us (*only 16%*), we decided to initiate coverage with a **Neutral rating** and a FV of **EUR7.5/share**.

4. EDPR in a nutshell

4.1.1. What is EDPR?

A pure RnE player

EDPR is a leading, global renewable energy company, specialising principally in wind technologies and in both Europe and North America. At end 2015, it generated around **21.6TWh** through **9.3GW** of installed renewables capacities. The group only generates electricity through green power generation assets and is therefore a pure renewables player, which is quite atypical in the quoted environment. At end 2015, EDPR generated **EUR1.5bn** of sales, **EUR1.1bn** of EBITDA (71% margin), **EUR560m** of EBIT (35.6% margin) and posted a net income of **EUR108m** (7% net margin). Inside the intimate world of the largest pure renewables quoted European players (*Enel Green Power, Falko Renewables, Acciona, Voltalia, Futuren*), EDPR is (when excluding Enel Green Power, which was just delisted following Enel's repurchase) the largest player in the European sector.

EDPR has been developing wind farms **since 1996** and was first publicly listed in **June 2008**. EDPR's global presence is managed by two regional platforms which oversee the development, construction and operation of assets in their geographic areas. EDPR Europe, with headquarters in Madrid, manages assets located in the European Union, and Other Regions' renewable energy assets of the EDP Group and EDPR North America, with headquarters in Houston, manages assets in the United States and Canada. Contrary to Enel Green Power, which was recently reconstituted by its parent company, Enel, through a takeover bid on minorities, EDPR remains fully independent strategically. Its parent company, EDP, a vertically-integrated utility, and still owns a **77.5%** stake in the group (*unchanged since the IPO in June 2008*).

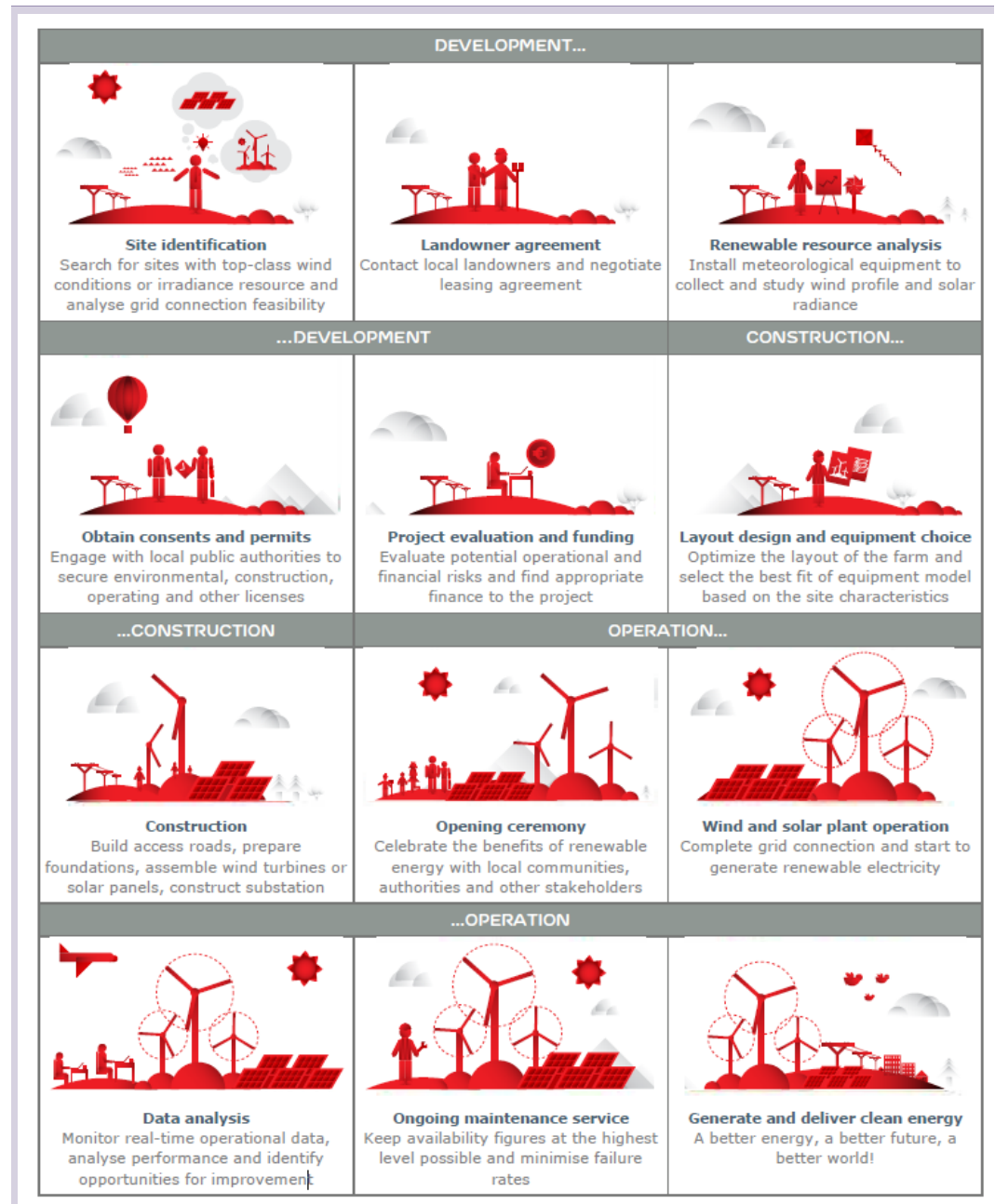
As most RnE operators, EDPR's business consists of: 1) **developing**, 2) **building** and 3) **operating** wind farms and solar plants throughout the world.

1. **Development phase:** Most of EDPR's future earnings growth in coming years will come from its development efforts. EDPR's teams need to find localities with quality renewable resources (sunnier and windier than average places) with nearby electricity transmission lines. After partnering with landowners or municipalities, the critical process of **measuring the wind begins**, where data collection can last for several years. For solar plants, the measurement of the irradiance resource is a shorter process, as sun light over a period is strongly affected by the geographical characteristics of the site.
2. **Construction phase:** The main objective of this phase is to build up the most competitive, safe and efficient wind farms and solar plants. The group needs to negotiate its procurements well, while being armed with the best engineering and construction teams. Construction of a wind farm typically takes **6 to 12 months**, whilst solar plants can be built in a considerably shorter period of time. In most cases, wind turbines and access roads occupy less than **1%** of the land in the entire project area, and the remaining land is still available for agricultural activities. For solar plants, the occupied area is higher, however these sites are considerably smaller and in many cases can be installed on waste land that is not fit for agriculture or other purposes.
3. **Operations phase:** As an owner and operator, EDPR is committed to maintaining long-term operations of its projects. Wind farms have a projected life span of **25 years vs. 20 years** for solar parks. To maximise its return on equity ratios and to accelerate at a higher pace, the group is ready to sell minority stakes in some projects to recover cash and finance

additional new projects. As previously mentioned, the group operated at end 2015 **9.3GW** of net capacities and generated **21.6TWh** of electricity annually.

Below is a summary of the different operating phases needed to operate renewables assets.

Fig. 4: EDPR – Business description



Source: Company Data; Bryan, Garnier & Co ests.

As we explain below, **EDPR has strong expertise in wind technology** (*onshore only for the moment*) and a **little less in solar technology**. No real indications have been given on the group's potential developments within the solar market while, in the offshore wind market, the group has several times mentioned its short- to middle-term strategy will clearly focus on building up this new franchise.

What is important to retain on EDPR?

- The group is part of **EDP** (*the parent company still owns a 77.5% stake in EDPR, as was the case at the time of the IPO in 2008*), the Portuguese integrated utility, but has been separately quoted on Euronext Lisbon since June 4th 2008. The main objective of this IPO (*capital increase of EUR1.56bn, valuing back then EDPR at EUR7.1bn for 100%*) was to increase the group's visibility with investors, by being a pure player in renewables with a unique investment case while raising cash to finance future growth. Since the IPO, the EDPR's market cap. is now down **19.5%**, while the SX6P Index is down **44%**, and EnR peers such as **Acciona, Falk Renewables, Albioma, Futuren and Voltaia** are respectively down **64%, 84%, 76%, 98% and 86%**. As for Enel Green Power, the IPO of which (*Italian government becoming the parent company with a 69% stake back then*) was in November 2010, its market cap. is up **18%** since this date (*the stock was delisted on March 31st 2016 since its purchase by its parent company*).
- The group's strong development in **North America** was made externally, thanks: **1/** to the acquisition in 2007, from Goldman Sachs, of **Zilkha Renewable Energy** (*renamed Horizon Energy Wind Energy by the bank following its acquisition in 2005*) for a total amount of **USD2.15bn**, and **2/** thanks to the acquisition in February 2008 of six development projects in the US totalling **1.05GW** of wind capacities from Hydra Energy. These two acquisitions put the group in a strong position in this market with total installed wind farm capacities of **4.3GW** at end 2015.
- The group is operating **very young assets**, with long residual lives. At end 2015, the average life of the group's assets was between **5 and 6 years**, implying **15 to 20 years** of remaining life time. These assets are therefore set to generate solid FCF generation over the remaining period, allowing for additional investments in new projects.
- The group aims at further developing its presence in North America, and more especially in the US. Out of its **2GW** organic growth target (*2014-17*), EDPR aims at developing **60%** of this in the US (*1.1-1.2GW*) through PPA; while only **20%** in Europe and **20%** in emerging markets. North America is therefore set to become the number one market (*future cash cow?*) for the group, raising too its USD exposure. Despite being relatively little exposed to the Brazilian power market, where the need for additional green capacities is quite important, the group is not pushing for massive investment like in the US. It is also important to notice that **1.1GW** of additional capacities targeted by the group in the US are already secured (*PPA*) with a price close to **USD48/MWh**, a load factor slightly above **40%** (*43%*) and an IRR on projects above **10%**.

■ A strong part of the EBITDA growth generated by the group since its IPO (*EBITDA 2015 up 155% vs. 2008 EBITDA*) was generated by additional projects, o/w the group entered minority shareholders to raise its growth leverage. Yet, on the net income level, the increasing part of minorities absorbed most of the EBITDA growth, to the detriment of EPS and so the DPS. EPS was **then up 49%** over the same period, while DPS did not increase at all, and was even cut to zero in 2014.

4.1.2. EDPR's SWOT

Fig. 5: EDPR's SWOT

EDPR SWOT	
Strength	<p>One of the leading power producers from renewables in Europe (reflected by its market cap).</p> <p>An EDP subsidiary protected from takeovers but free to orientate its strategy independently (easy access to cheap credit thanks to EDP).</p> <p>Present in high growth markets (Brazil & Eastern Europe).</p> <p>One of the highest EBITDA margins in the sector combined with strong margin resilience.</p> <p>Amongst the biggest European stocks in renewables, offering more liquidity to institutional investors</p> <p>PPAs and feed-in-tariffs offer visibility over future cash flows</p> <p>Operated assets remain young (5 to 6 years average life) vs their long residual life (15 to 20 years)</p>
Weakness	<p>Too strong exposure to the wind power market?</p> <p>Very limited exposure to the solar market.</p> <p>Strong exposure to Spain and Portugal.</p> <p>Poor dividend policy, pay-out ratio historically around 20-30%.</p>
Opportunities	<p>Brazil's willingness to reduce its dependence on hydro through new renewable sources (strong potential for wind and solar technologies).</p> <p>Renewables' demand is growing in vast countries such as India and China.</p> <p>Solar power as a growth driver.</p> <p>Potential M&A opportunities (high number of small quoted and private solar companies in the market).</p>
Threats	<p>Political uncertainties in Spain and Portugal potentially leading to regulation changes.</p> <p>Many US states are negotiating to restrict or even stop incentives for renewables.</p> <p>US branch (38% of revenues) exposed to a USD downturn.</p>

Source: Bryan, Garnier & Co ests.

5. Our view on EDPR

In this section, we summarise the different elements we like and dislike about EDPR to appreciate fully the positive and negative risks investors will be exposed to when investing in EDPR.

5.1. What we like about EDPR

5.1.1. Its leadership position in a high growth potential market

With around **9.3GW** of installed capacities, o/w **53%** in Europe and **46%** in North America, EDPR is clearly **well positioned in both the quoted and private renewable energy world (RnE)**. In numerous sectors, being the leader or in the **top 3 ranking** is seen as the determinant for investing (*scale economies on headquarters and on development, visibility, ability potentially to generate power at lower prices due to lower financing costs and to lower capex/MW costs...*) yet, in the energy/utilities/renewables sector, size is not “so determinant”, except where the financing/balance sheet is concerned. Yet, being a leader in this sector is not negative either, especially when the entity is quoted, as it allows the group to attract interest from a larger number of institutional investors, which is not the case for smaller groups such as **Voltaia, Albioma** or **Futuren**, for instance.

By looking at the different players in the sector (*quoted and unquoted*), we identify that EDPR is clearly well positioned in terms of installed capacities and in terms of geographical footprint. Compared with its closer European competitors, **Enel Green Power** (*delisted since March 31st 2016 following the takeover by its parent company*) and **Acciona**, it has the stronger exposure to the non-European market. However, like other players, EDPR is strongly exposed to wind assets and not to solar technology, and it is the latter where growth is set to come from in the short to middle term. We see in the table below that EDPR is **among the top listed players** in the sector in Europe (*as a pure RnE player*).

Fig. 6: Main renewables players, classified by capacities

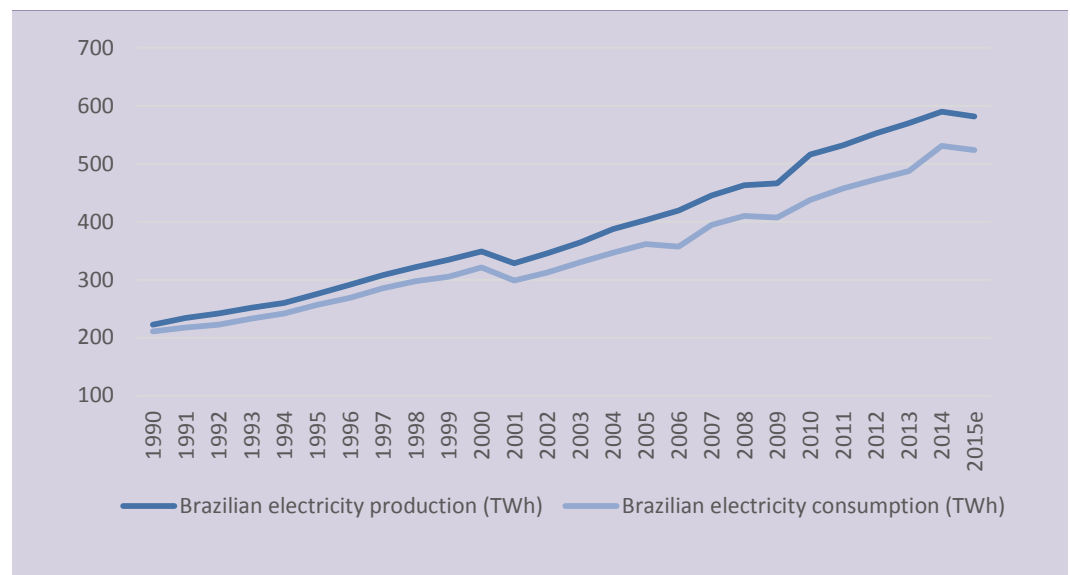
Group	Country	Capacities (MW)	o/w Hydro	o/w Solar	o/w Wind	o/w Thermal	o/w Europe	o/w LatAm	o/w North America	o/w Asia, Oceania	o/w India	Quoted/Private
Nextera Energy	US	44 900		740	11 400				44 900			Quoted
China Yangtze Power	China	28 078	28 078							28 078		Quoted
Iberdrola	Spain	23 838	11 076									Quoted
Engie EN (<i>with La Compagnie du Vent</i>)	France	19 662	16 003	159	3 500							Private
Suzlon Energy	India	14 552			14 552		607	869	2 716	1 743	8 617	Quoted
Brookfield Renewable	US	10 366	8 097	1	1 579	300	587	4 174	5 605			Quoted
First Solar	US	10 000		10 000								Quoted
Enel Green Power	Italy	9 626	2 624	433	5 697		5 845	1 698	2 083			Private
EDP Renewables	Portugal	9 608		82	9 555		5 142	84	4 382			Quoted
Acciona	Spain	8 619	888	457	7 087							Quoted
E.ON Renewables	Germany	8 523	4 143	130	4 250		8 523					Quoted
EDF EN	France	7 903	74	547	4 422		4 519	230	2 618			Private
Dong Energy	Denmark	6 879			2 904	3 975	6 879					Quoted
Reliance Power	India	5 945		40	45	5 860					5 945	Quoted
PacifiCorp	US	5 193	1 017	1 076		3 100		5 193				Private
Abengoa	Spain	4 200		4 200			2 929	110		1 800		Quoted
RWE Innogy	Germany	3 677	772		2 574	74	3 677					Quoted

Source: Company Data; Bryan, Garnier & Co ests.

5.1.2. Its strong ambitions in Brazil (*the perfect timing?*)

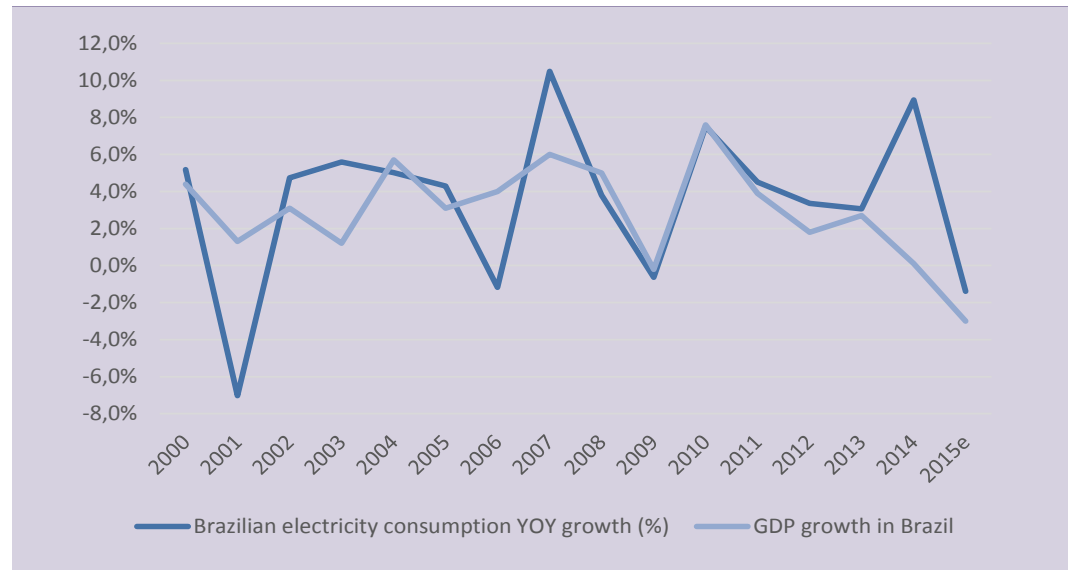
Brazil, like other emerging economies requires extensive infrastructure investment (across all sectors) to improve the country’s overall competitiveness but also to support the strong growth in consumption – and of electricity in particular – by the middle classes. It is vital, then, that the country develops its sources of supply so as to avoid any shortages (*such as the one in 2001*) which would to hinder economic development and impact GDP growth. Electricity production and demand have risen dramatically in the last 40 years (*with consumption increasing eleven-fold between 1971 and 2011*) apace with Brazil’s economic growth and that of the other BRIC countries. Brazilian GDP growth estimates for 2014 to 2020 clearly indicate that the country will continue to demonstrate a stronger performance than most other world regions, providing sustained growth for European countries investing in the region. Despite the absence of detailed projections of future energy consumption in the country, we expect it to grow at a faster rate than GDP, as has been the case in the last ten years. We are forecasting a >4% increase in electricity consumption in Brazil in 2016 after a 2% decrease in 2014. In the long term, growth should be around 3% to 4%, driven mainly by the rise in consumption on the part of the middle classes.

Fig. 7: Electricity production and consumption in Brazil (TWh)



Source: Bryan, Garnier & Co ests.. Bloomberg; The World Bank

Fig. 8: Correlation between GDP growth and electricity consumption in Brazil



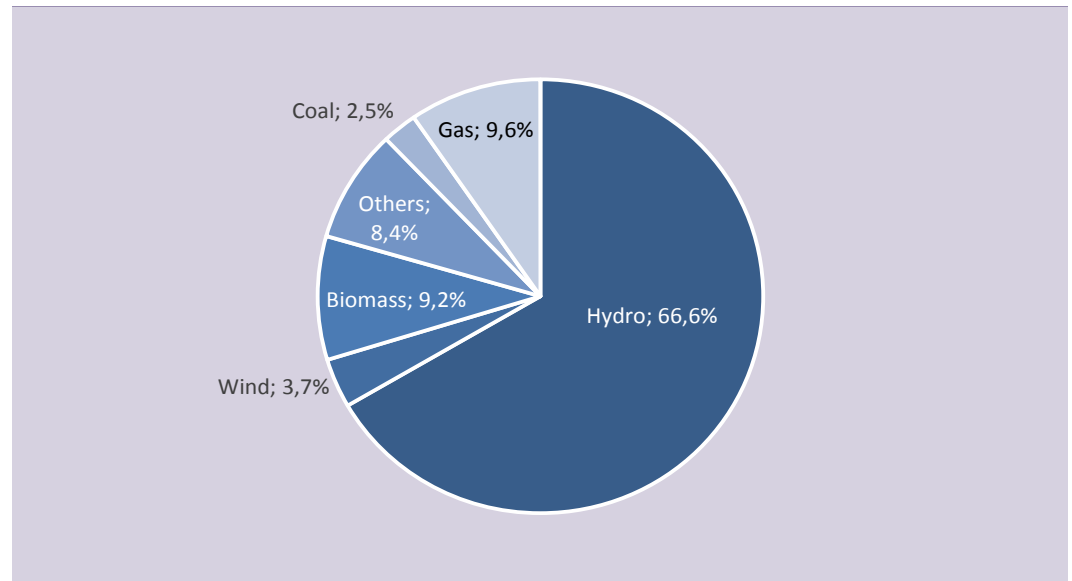
Source: Bryan, Garnier & Co ests.. Bloomberg

In our opinion, electricity network operators and renewable energy operators should take **two key factors** into account before investing in Brazil: **1/** the future supply and demand balance, which will determine the reserve margin (*or shortages*), and **2/** the technological transformation fostered by the Brazilian government concerning future capacities, as this will raise or lower future electricity prices. These two factors are decisive and, to our mind, favourable in the long term to companies such as **EDPR, Enel Green Power, Albioma, and Voltalia, which are all** looking to contribute to the growth of the electricity market.

A market dominated by hydroelectric plants

Production capacity in Brazil is dominated by hydroelectric plants, which account for **71%** of total installed capacity through 24 plants generating over **1,000MW** and **78% to 80%** of the electricity entering the national grid. A full **25%** of the total is supplied by the Itaipu hydroelectric plant with its **14GW** output located on the Paraná River on the border with Paraguay. The strong exposure to hydroelectric energy, a result of the country’s abundant water resources, reduces total production costs and dependence on other countries or external resources (*similar to France with its nuclear power*) but makes the country vulnerable to shortages in years of low rainfall (*as in 2001 and 2002*). The increase in electricity consumption in the residential and commercial sectors alike calls for the introduction of stable and continuous energy sources and has led the Brazilian government to draw up a strategic plan to foster the development of the cheapest energies – including coal and gas, and wind power and biomass in terms of renewables – to counter the risk of shortages stemming from unfavourable weather conditions.

Fig. 9: Energy mix in Brazil, in installed power (2014) - EPE

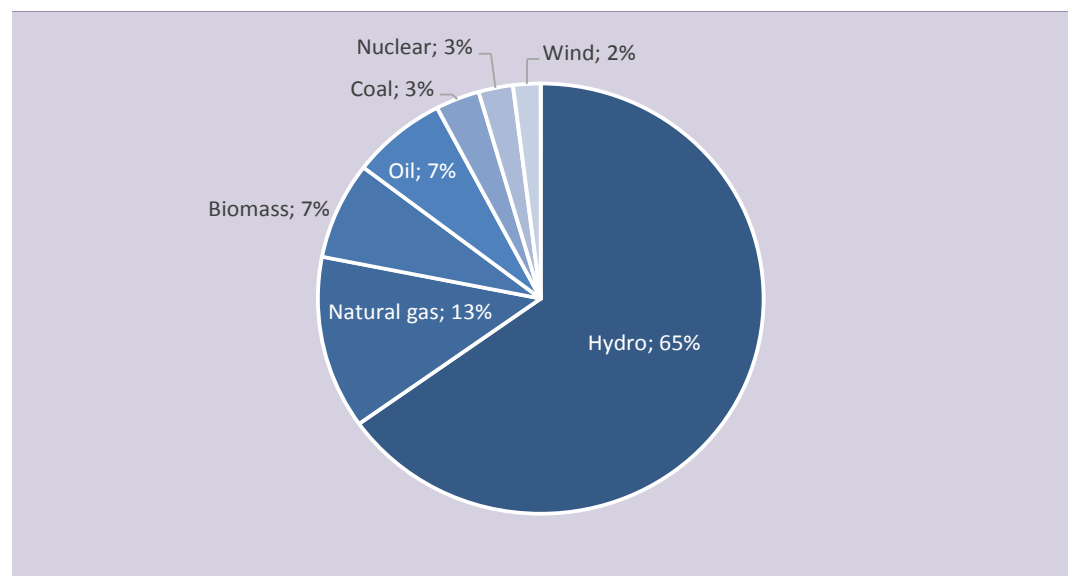


Source: EPE (Empresa de Pesquisa Energética), Bryan, Garnier & Co ests. , EPE

As the above pie chart shows, Brazil’s second largest energy-producing technology is natural gas, accounting for **10%** of installed power and **13%** of the country’s annual electricity production. Biomass accounts for **9%** of installed power, compared with **3%** for nuclear (*the country has just two nuclear reactors connected to the grid, with a third under construction and four reactors with superior capacity potentially coming on line in the 2020s*). Petroleum and wind power represent **2%** and **4%** respectively of installed power in Brazil.

The general picture in terms of production is fairly similar, with practically all capacity factors at between **90% and 100%**, apart from wind power with a capacity factor of **40-50% in Brazil** (*for the best sites*), which is much higher than the average in other countries. This situation implies that the breakdown of installed capacity by technology is fairly similar to that of production.

Fig. 10: Electricity production in Brazil (2014)



Source: EPE (Empresa de Pesquisa Energética), Bryan, Garnier & Co ests. ; EPE

Please see the section headed “Important information” on the back page of this report.

As shown above, overexposure to hydroelectric power makes Brazil vulnerable to climate change, as seen in the **dramatic drought of 2001** that led to severe shortages of electricity. In 2001, hydroelectric production was **36GWh**, or **12%**, lower than in 2000. At that time, Brazil had experienced several years of lower-than-average rainfall, as well as delays in the delivery of new power plants, along with energy transmission problems in circuit number three at the Itaipu hydroelectric plant, which accounted for one third of the energy shortage. The water reservoirs at the hydroelectric plants were so low that the electricity supply had to be cut for over four months. Electricity prices rose and the government was obliged to introduce fines for overconsumption and rewards for residential, industrial and commercial customers which had reduced their overall consumption. Consumption fell **6%**, in step with the **5.8%** decline in production, but the unfortunate experience prompted the government to adapt and reform the national electricity market.

The government is encouraging an increase in production capacity

To cope with the strong rise in demand for electricity and the growing difficulties facing investments in hydroelectric power, the Brazilian government has no other choice but to continue encouraging the widespread development of alternative renewable energies other than hydroelectric power. As we explained above, Brazil is quite clearly in a phase of growth driven by the expansion of the middle class and continued industrialisation. In the years to come, Brazilian GDP is expected to overtake that of most of the other BRIC countries and mature markets, a trend that will be reflected in increased electricity consumption (*a brief glance at the trend in the flexibility of demand shows that electricity production is rising faster than GDP*).

Brazil requires major investments in infrastructure to become more competitive overall and stimulate future GDP growth. Increasing the production of electricity has become an outright priority for the government, especially since the events of 2001. As part of that priority, a federal energy planning agency (*Empresa de Pesquisa Energética, or EPE*) was set up in 2004 to help the government in its plan for the country's energy transition. Under the EPE's ten-year development plan for 2013 to 2023, unveiled in 2014, the largest part of the increase in production capacity will (*as mentioned earlier*) come from renewable energies, and wind power and biomass in particular.

Fig. 11: Installed capacity in Brazil by technology – EPE estimates (GW)

(GW)	2012	2013	2018e	2023e	CAGR (2013-2023e)
Total capacity	119.5	124.8	167.1	195.9	4.59%
inc. Renewables	100.2	103.4	142.8	164.1	4.59%
inc. Hydro	83.5	85.2	107.2	119.5	3.31%
inc. Imports	6.2	6.1	5.6	4.7	-2.46%
inc. Wind	1.8	2.2	17.4	22.4	25.75%
inc. Biomass	8.6	9.9	11.6	14.0	4.50%
inc. Solar	0.0	0.0	1.0	3.5	219.16%
inc. Non Renewables	19.4	21.4	24.2	31.7	4.59%
inc. Uranium	2.0	2.0	3.4	3.4	4.89%
inc. Gas	9.9	10.7	12.5	20.0	6.57%
inc. Coal	2.1	3.2	3.2	3.2	3.82%
inc. Oil	4.6	4.8	4.4	4.4	-0.36%
inc. Others	0.7	0.7	0.7	0.7	0.00%

Source: EPE (Empresa de Pesquisa Energética), Bryan, Garnier & Co ests.

The EPE is expecting and recommending a **4.6%** annual increase in total installed capacity between 2012 and 2023, in line with our forecasts for electricity demand in the coming years.

As regards wind capacity, the EPE is also expecting an annual >25% increase through 2023, consistent with EDPR’s strategy concerning this technology.

This country for EDPR is therefore set to offer important growth potential, on both solar and wind technologies. At end 2015, the Portuguese group still has a limited direct exposure with only 84MW installed (*only wind*), representing less than **1%** of the group’s capacities. Yet, following the successful recent auction awarded to the group in the country, we anticipate this share to grow **to 5%** by 2017. Given the group has not communicated on any growth capex guidance beyond 2017, it is hard for us to predict precisely what this country will represent for the group in a longer term.

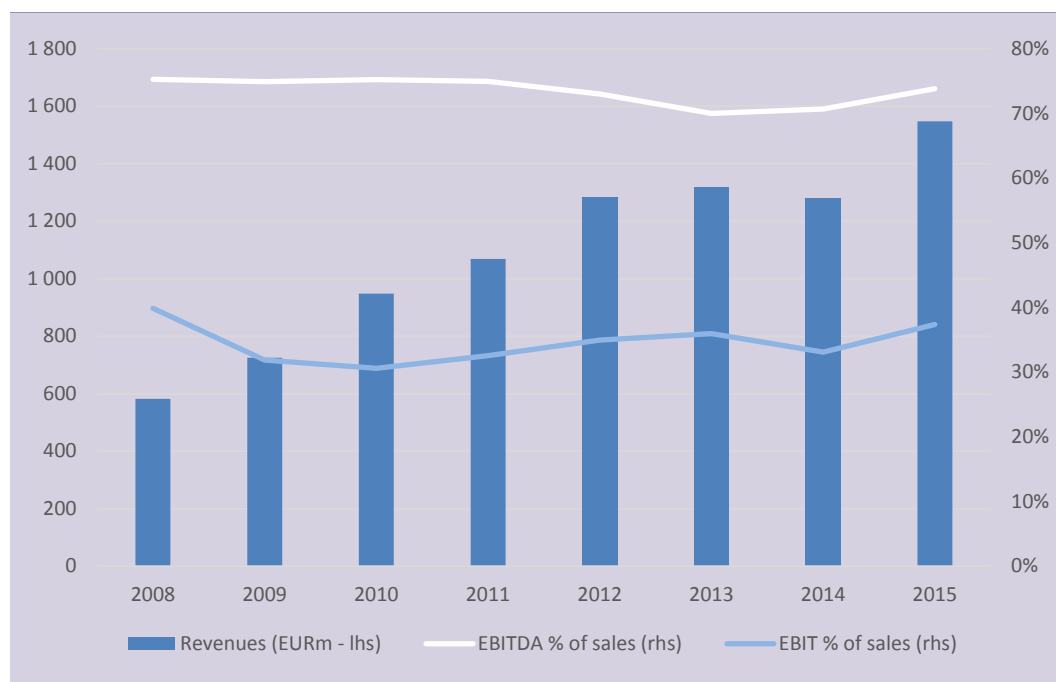
In our model; we assume the **5%** of installed capacities could get closer to **9-10%** by 2025 assuming a **third** of the group’s growth capex envelop is dedicated to this market. It is also important to notice the financial and political crisis currently affecting the country is not affecting the energy (*utilities*) sector given most of the contracts are indexed to inflation.

On the contrary, we view the current low BRL as a good opportunity to accelerate the group’s development in the country as capex needed to install one MW is cheaper today than a year ago.

5.1.3. The strong resilience of its operating metrics

EDPR’s metrics demonstrate a good operational performance. Indeed, the Portuguese group benefits from one of the highest EBITDA/Sales ratio in the sector with an EBITDA that came out at **EUR1.1bn in 2015**, i.e. an EBITDA/Sales of **74%**. This ratio is quite stable and has remained so for many years as since 2008 it has never been below **70%**. Following the trend in EBITDA, EBIT remains between 30% and 40% of revenues; more precisely EDPR published an EBIT of **EUR547m** for 2015, i.e. **37%** of its sales.

Fig. 12: EDPR –Sales, EBITDA & EBIT margins reported since 2008

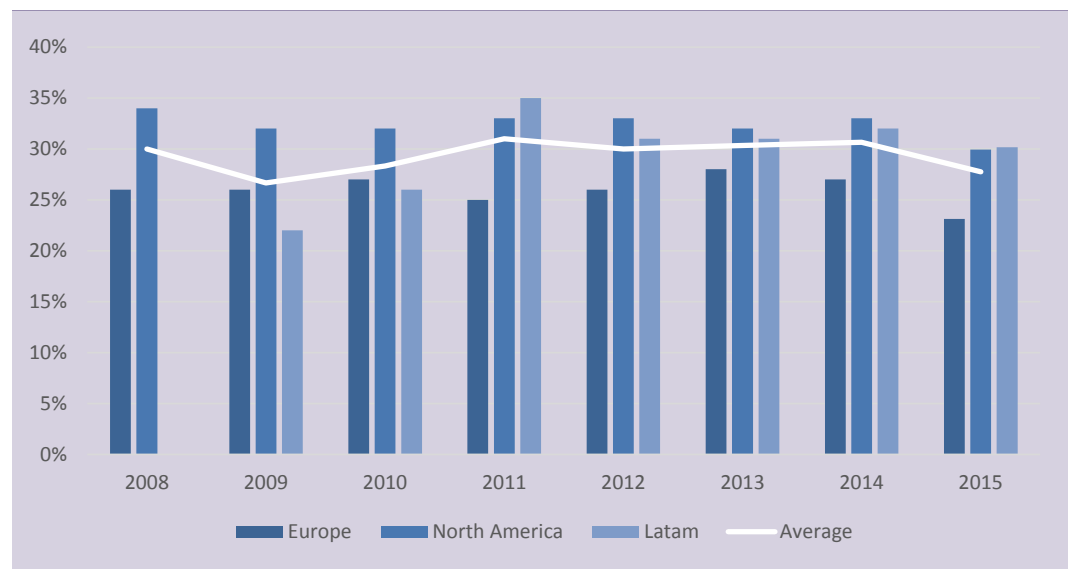


Please see the section headed “Important information” on the back page of this report.

Source: Company Data; Bryan, Garnier & Co ests.

This performance is mainly due to a good asset management across all geographic areas. As the most relevant indicator of energy plant management, the load factor is here evaluated at **28%** for the group in 2015. This ratio historically fluctuated in the **27-31% range**. Despite the fact that the load factor slightly diminished in 2015, EDPR still conserves **a load factor above the national market average** in several European countries such as Italy (+9pp); Spain, France and Poland (+2pp). Concerning Portugal, EDPR is in line with the market’s load factor. The US is the first business region in terms of productivity, with load factor at **30%**, far away from the European **23%**, which explains why EDPR’s US wind turbines generate more electricity output than European ones, whereas Europe concentrates **53%** of MW installed. Besides, opex discipline contributes to maintain a high level of profitability. Thus, core **opex/MW**, which exclude non-current operating expenses, decreased by **1pp** in 2015 and follow the trend started a few years ago. By integrating the forex effect, this core opex/MW ratio has increased by **6%**, still below the turbines’ deployment growth.

Fig. 13: EDPR – Load factor reported since 2008 (by region)



Source: Company Data; Bryan, Garnier & Co ests.

Consequently, EDPR’s earnings have been improving since 2008 to reach **EUR167m** in 2015, i.e. **10.8%** of revenues, while back in 2008 the group generated only **EUR100m**.

It is important to note here that EBITDA growth since the group’s IPO in 2008 is higher than net income growth; as most of the group’s past growth (*observed in sales and EBITDA*) was made with partners, reducing the real contribution at the bottom of the P&L. This way to develop business is quite common in the sector, and especially within the renewables sector, as it allows groups to grow EBITDA at a higher speed.

This way of doing business (*commented in another section in the document*) does not call into question the solid operating performances generated by the group over past years.

5.2. What we dislike about EDPR

5.2.1. Its very limited exposure to solar technologies

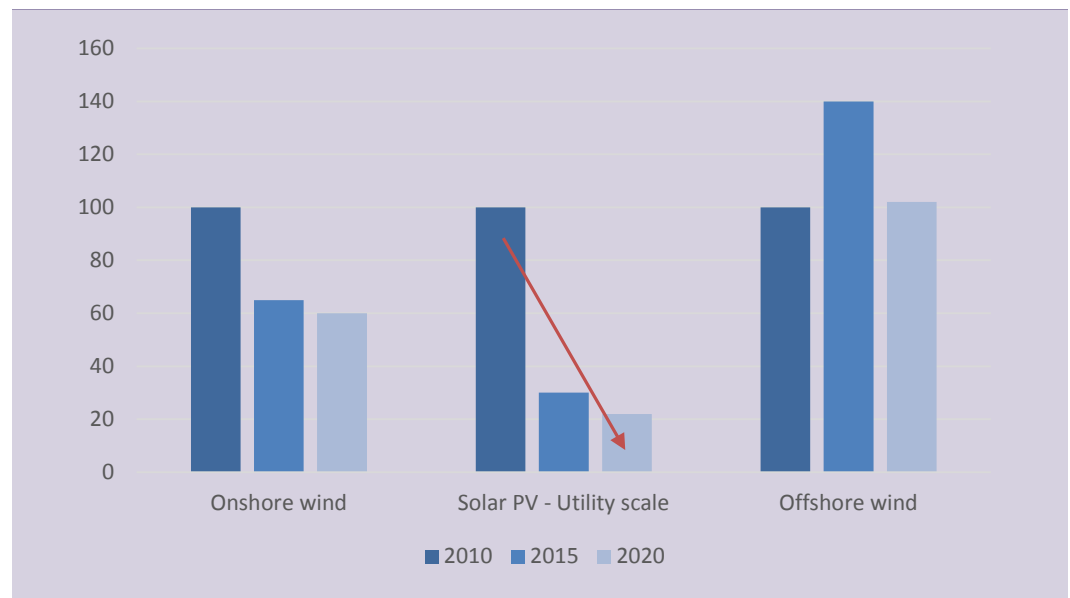
A more and more competitive technology

As already mentioned, following the important cut in **Levelised Cost of Energy (LCOE)**, especially compared with other renewable and non-renewable technologies, solar panels are set to represent the highest growth potential in the sector, in both mature and emerging markets.

As a reminder, the **LCOE** is a term often cited to measure the overall competitiveness of different generating technologies as it represents the per-kilowatt-hour cost of building and operating a generating plant over an assumed financial life and duty cycle. This measure includes capital costs, fuel costs, fixed and variable operations and maintenance (O&M) costs, as well as financing costs, and most importantly the assumed load factor for each technology. Given that most renewables produce power intermittently, and most importantly at lower load factors than more traditional fossil fuel assets, the **LCOE ratio could be quite attractive** for wind and solar technologies in regions where the wind blows and the sun shines more. And given this is the case for most emerging markets, renewables tend to be more and more competitive versus more traditional fossil fuel assets.

The recent forecasts from IEA indicates solar global generation costs for new plants is set to continue to decline strongly over coming years (*>-25% between 2015 and 2020 compared with only around -10% for wind technology*).

Fig. 14: Global indicative generation costs for new plants (rebased 100 in 2010)



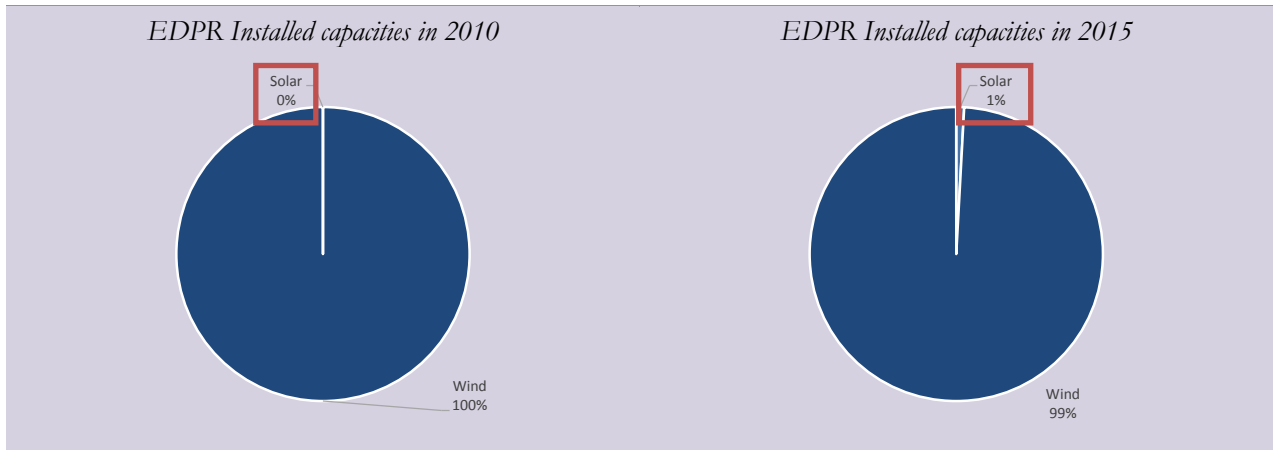
Source: Company Data; Bryan, Garnier & Co ests. ; EIA

While solar technology is set to remain less competitive than wind, it is important to notice that in some regions the spread in cost generation between both technologies is set to get closer, to the profit of the latter.

EDPR in solar market

EDPR historically built its business model on wind energy. As of December 2015, the Portuguese firm only operates **82MW in solar plants**, representing less than **1%** of its global capacities. This ratio has stagnated for at least five years. This trend might last, as solar power seems officially absent from the group’s strategy and guidance for the following years (*even if in our model we forecast a slight rise in solar capacities as we assume part of the future growth capex will be dedicated to it*).

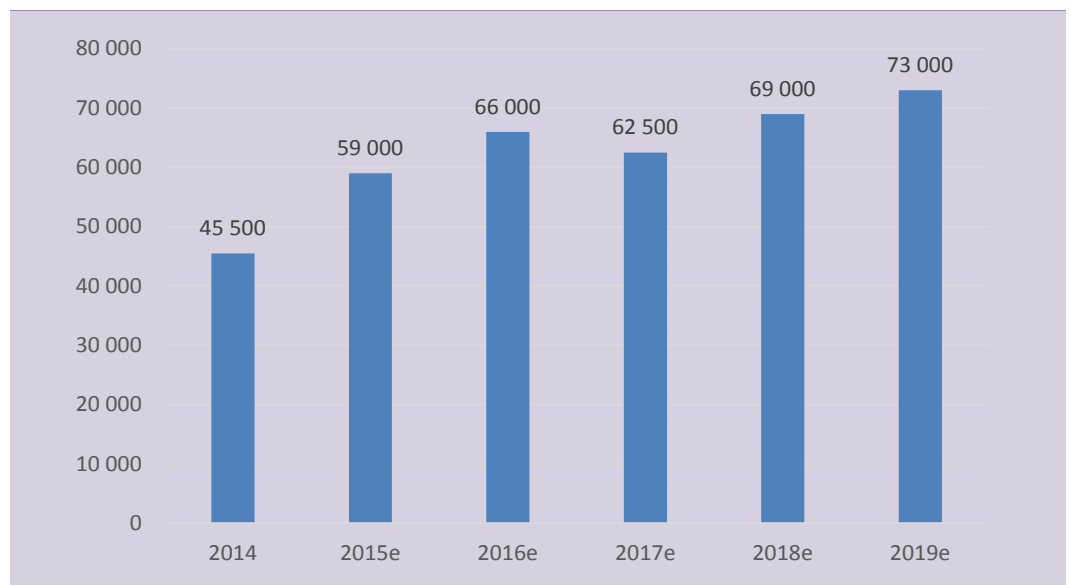
Fig. 15: EDPR installed capacities mix (by technology) in 2010 and in 2015



Source: Company Data; Bryan, Garnier & Co ests.

However, as explained above, solar appears to be a fast growing sector in renewables. Indeed, according to IHS, solar technology installations are about to accelerate at a compound annual growth rate of **>10%** between **2014 and 2019** to reach **73GW**. By the end of 2016, 300GW of new solar panels should be commissioned globally. This trend, however, hides some disparities between Europe, where demand for solar should slow down to **50 additional GW** installed over the next five years, and Asia which is developing a strong appetite for this technology. For instance, China installed more photovoltaic panels in 2014 than the whole of the European continent.

Fig. 16: Solar market – New installed capacities in MW around the world (IHS)



Source: Company Data; Bryan, Garnier & Co ests.; IHS

Strong expectations in a potential Chinese government's decision to set up targets for renewable energy production regularly encourage an upgrade in estimates; and the US also represents a growth driver. Solar energy has been very active in the US for several years, especially thanks to the solar investment tax-credit (*ITC*) set up in 2008. But this intensity may lighten with the end of tax incentives this year in addition to current and potential renegotiations over states' other incentives for renewable energies.

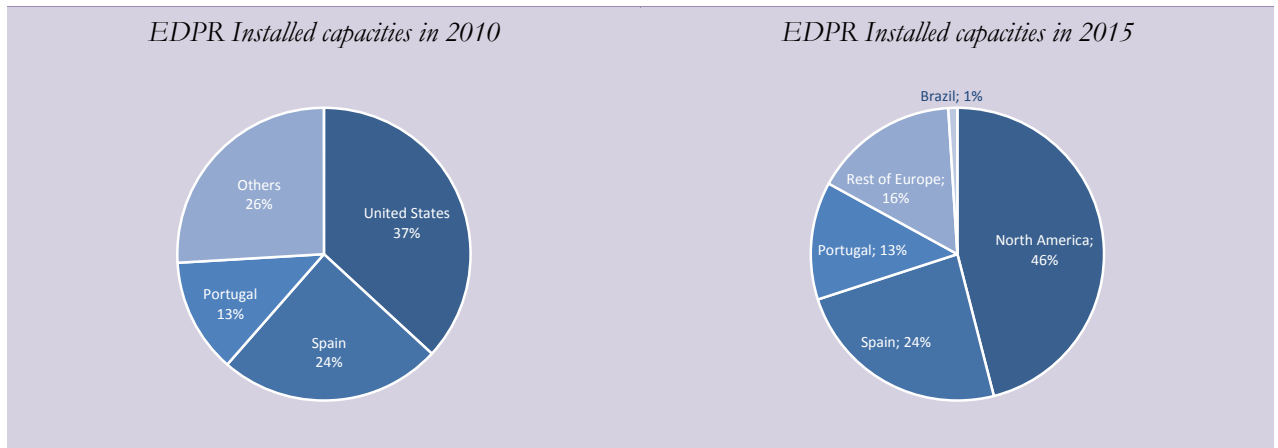
Recent acquisition of Solairedirect from Engie last year clearly confirms the strong interest in this subsector, even for integrated utilities. When looking in Europe, we see only a few pure solar players listed with most of players being exposed to wind technology such as EDPR; Acciona or Enel Green Power. In the US, however, it is easier to find important listed solar entities, such as **SolarCity** or **SunEdison** (*close to bankruptcy*) with most of the business being made with private households (*solar rooftops*).

Assuming no real strategic ambitions are divulged by the group beyond 2017, EDPR is set to miss some of the growth potential coming from the solar market in the coming years. Growth from wind will remain quite strong, yet the incremental growth from solar (*catch up effect compared to wind*) will not have been negligible. We expect positive update on this subject during group's investor day (May 5th). In our model we currently assume the group will expand its footprint on solar. We expect installed capacities on this technology to grow from 1% at end 2015 to 5% by 2023.

5.2.2. Its strong dependence/exposure to Spain & Portugal

Whereas EDPR is present in **9 countries**, two of them catch attention: **Spain and Portugal**. In terms of assets, both peripheral European countries concentrate **37%** of the group’s energy plants. This concentration also impacts revenue split as Portugal generates **13%** of sales and Spain **25%**.

Fig. 17: EDPR Sales and installed capacities split by country/region (2010 & 2015)



Source: Company Data; Bryan, Garnier & Co ests.

This means that **38%** of EDPR’s revenues are subject to political risks that are still present in **Spain and Portugal**. The main issue resides in the political stability, or instability, of these countries which have been weakened by the recent crisis and especially attacked during the sovereign debt crisis. As a reminder, Catalonia may get its independence from Spain if the separatists’ coalition succeeds in 18 months’ time. Such a situation will see the creation of a new state with new laws which may not be favourable to renewables, or even the creation of a new currency leading to forex uncertainty. The recent political swings in the elections instigate uncertainty over the maintenance of the government’s incentives in favour of renewable energies. Following, the same logic, future potential political swings cannot be excluded from any estimates, making any investment in renewables really unsure in terms of selling prices and growth potentials.

Currently EDPR benefits from governmental incentives in:

- **Spain**, wind energy producers get the conventional price per MWh for their electricity sales and a premium price when necessary. Indeed, if the producers’ return is below the government’s target return, equivalent to the Spanish 10-year bond yield plus 300pbs, the premium price is activated.
- **Portugal**, EDPR sells part of its production under 15-year feed-in-tariffs which are inversely correlated with load factor. A 7-year extension can be set in place with prices between EUR74 and EUR98/MWh.

Despite these political risks, EDPR’s management seems as confident as its Business Plan 2014-2017 since it includes further developments in **Spain and Portugal**. By 2017, an additional **200MW** still need to be commissioned in Portugal to fulfil the Business Plan.

Please see the section headed “Important information” on the back page of this report.

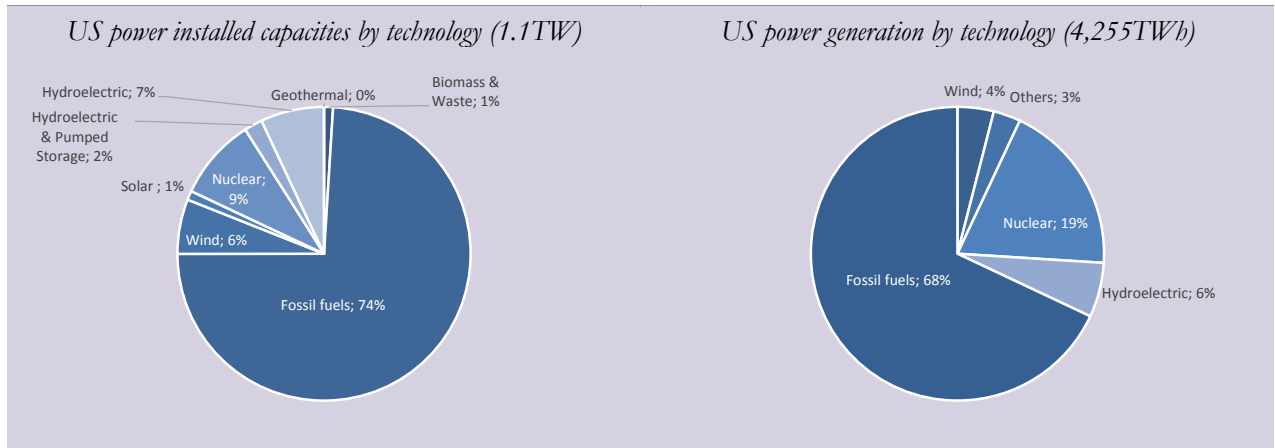
5.2.3. Its exposure to the US, which could be seen as risky by investors

A quick look at the US renewable market

It is important to comprehend the US renewable market given the strong presence of EDPR in there and given its important ambitions in the coming years.

Rising from **11%** of the total electricity production in 2001 to **17%** in 2014, renewables are taking up more and more space in the US energy mix. Renewable energies even accounted for **70%** of new US generating capacity in H1-15. Hydropower has always been the largest renewable energy in terms of overall percentage of installed capacity, as in all other mature countries, but according to the **Federal Energy Regulatory Commission (FERC)**, this may no longer be the case by 2018. Indeed, in 2015, about **153MW** of hydropower capacity was installed in the US, and, over the same period, more than **7.9GW** of wind capacity was installed in the country.

Fig. 18: US power energy mix in 2014



Source: Company Data; Bryan, Garnier & Co ests.; EIA

According to the US Department of Energy, the cost of wind energy has come down **85%** in the last 20 years. As of 2010, the top performing wind farms in areas with excellent wind resources had costs averaging about **7 cents per kilowatt-hour**, making wind the most cost competitive source of non-hydroelectric renewable electricity. The US Department of Energy aims to bring the cost of land-based wind energy down by **18%** and the cost of offshore wind energy down by **63%** by 2020.

For the solar sector, the cost of solar energy has fallen sharply over the last 20 years, with accelerating price declines in the last five years. Experts predict the cost of solar power will drop below retail electricity rates in many parts of the country between 2013 and 2018. Electricity from small or medium-scale solar installations, such as those on homes or businesses, costs around **12 to 30 cents per kilowatt-hour**, but these prices should continue to drop thanks to falling installation costs, accessible, low-cost, long-term financing, and a healthy number of incentives and tax packages offered by nearly every state government. The current federal incentives include a **30% investment tax credit (ITC)** and, for businesses and commercial units, a five-year **modified accelerated cost recovery system (MACRS)**, which allows system owners to deduct federal taxes on an accelerated timetable of system value depreciation.

Please see the section headed "Important information" on the back page of this report.

Like in Europe, the renewables sector in the US is being supported by the government. In the US, federal and state policies are giving solid shareholder returns to support greater investments in the sector.

Several mechanisms exist:

- **Renewable Portfolio Standards (RPS)** was set up to require power suppliers to provide a minimum share of electricity from renewable sources, on a state-by-state basis. In 2015, 31 states had binding RPS objectives, among them, 26 states put targets above 8% of electricity from renewable sources. The most ambitious state is California with a 2020 target of **33%**. RPS drives many utilities to create auction systems called “Request for proposals” (*RFP*) to seek for long-term power purchase agreements with renewable energy generators.
- **Rebates for purchasing renewable generation equipment.**
- **Net metering**, enables residential or commercial customers who generate their own renewable electricity to receive compensation for the electricity they generate. It requires electric utilities to ensure that customers' electric meters accurately track how much electricity is used on site or returned to the electric grid. Excess electricity not used on site is returned to the grid whereas the customer uses electricity from the grid when his own production can't meet his needs.
- **Tax incentives (*production or investment based*)** such as the federal wind production tax credit.
- **Public Benefits Funds** for renewable energy are a pool of resources used by states to invest in clean energy supply projects. Funds are typically created by levying a small charge on customers' electricity rates.
- **Output-Based Environmental Regulations** establish emissions limits per unit of productive energy output of a process (*i.e. electricity, thermal energy, or shaft power*), with the goal of encouraging fuel conversion efficiency and renewable energy as air pollution control measures.
- **Interconnection Standards** are processes and technical requirements that delineate how electric utilities in a state will treat renewable energy sources that need to connect to the electric grid. The establishment of standard procedures can reduce uncertainty and delays that renewable energy systems can encounter when obtaining electric grid connection in states that have not established interconnection standards.
- **Property Assessed Clean Energy (PACE)** is a financing option that attaches the obligation to repay the cost of renewable energy installations or energy efficiency retrofits to a residential property rather than an individual borrower. This mechanism encourages property owners to invest in clean energy improvements even if the payback period is longer than the owner intends to keep the property.

A solid presence in the wind market

Since 2007, with the acquisition of **Horizon Wind Energy LLC**, the group is now present in twelve states across the US with **4.2GW** of installed capacities. According to the company, this equals to a production of **11,030 GWh**, with two states concentrating more than a third of the installed capacities **1/ Illinois with 797MW** and **2/ Indiana with 701MW**.

EDPR sold more than **80%** of its production through **Purchase Power Agreements (PPA)** at an average selling price of **USD52/MWh** in 2015, whereas sales at an average merchant price of **USD44/MWh** only represented **15%** of its US production. EDPR's PPAs last up to **20 years**. The company also benefits from **Renewable Energy Credits (REC)**, whose function is subject to each state's regulations, while **PTC** also brings in revenue for the group. Finally, the company's wind farms whose construction began between 2009 and 2010 are eligible for a **30% cash grant in lieu of PTC**.

Despite a growing market and public incentives on all types of renewables, EDPR hasn't yet developed its capacities in solar. Indeed, the company only has one solar plant: **Lone Valley Solar Park, commissioned in January 2015**. This site has a production capacity of **30MW** whereas the US solar production capacity reached **22,700 MW in 2014**.

Political and regulatory risks more and more present

Despite all that we have mentioned above, many regulatory and political risks exist with the **presidential election coming this year** in the US, especially from the **Republican side** where opinions are divergent on the subject. Officially, the party hasn't partaken sides on renewables, as is the case for candidates such as Donald Trump who hasn't stated his position on Federal Tax Credits for renewables, green jobs creation or his stance on climate change. All he has said, in 2012, was that he wanted better technology before solar is considered as a viable clean energy source: "solar has failed to catch on because solar systems require a 32-year payback". **Others like Marco Rubio don't defend renewables either**; he is willing to give renewable energies a place in the US grid **but will not help the sector**.

In terms of states, there is the risk that some states decide to slow down or even to stop their **Renewable Portfolio Standards (RPS) policy**. All other incentives represent a heavy cost for states and could constitute an argument for governors to stop this policy as soon as the renewables sector is developed enough to survive without public incentives. According to the US Energy Department, **16 of the 29 states** with renewable portfolio standards have been considering, since 2013, legislation that would reduce the need for wind and solar power after the plunge in natural gas prices.

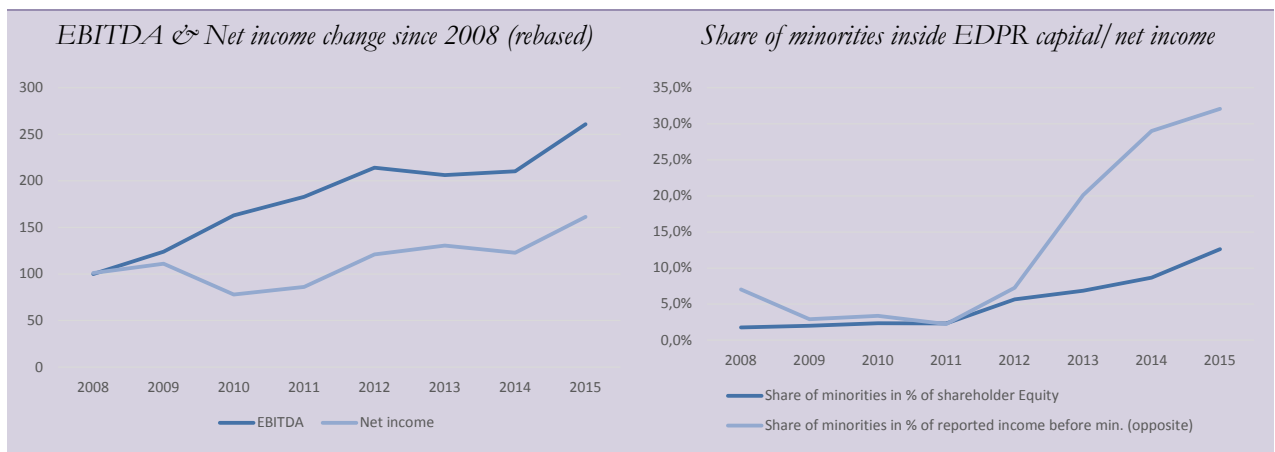
Even **net metering policies** are a delicate subject and divide US states' leaders. According to the North Carolina Clean Energy Technology Center, more than **25 of the 40 US states** with net metering policies are currently questioning them. Most states argue that the solar sector doesn't need incentives anymore, arguing solar panel prices have fallen by **40%** during the last five years.

Given the group's important exposure to the US (**>30% of sales**), any drastic changes in the political environment to the detriment of renewables could impact negatively: **1/ existing renewables assets** operated by the group there, or **2/ future growth** in the region. Besides this, it is important to keep in mind **the depreciation of the USD vs. EUR** (*assuming Trump is elected for instance*) will negatively impact the group's EPS and our FV.

5.2.4. Its strategy to expand with a high share of minorities

As explained above, inside the utilities/renewable sector, it is becoming more and more common to develop new projects with external partners as it allows the groups to expand more easily internationally than by doing it by themselves. EDPR has been using this strategy for a long time, explaining why its EBITDA increased by more than its net reported income over the 2008-15 period. Since 2008, the group’s EBITDA has multiplied by **2.6x**, while the group’s net reported income has only multiplied by **1.6x**. The rise of minorities at the bottom line of the P&L is the main explanation for this spread (*over a similar period, results not owned by EDPR have multiplied by 9x*).

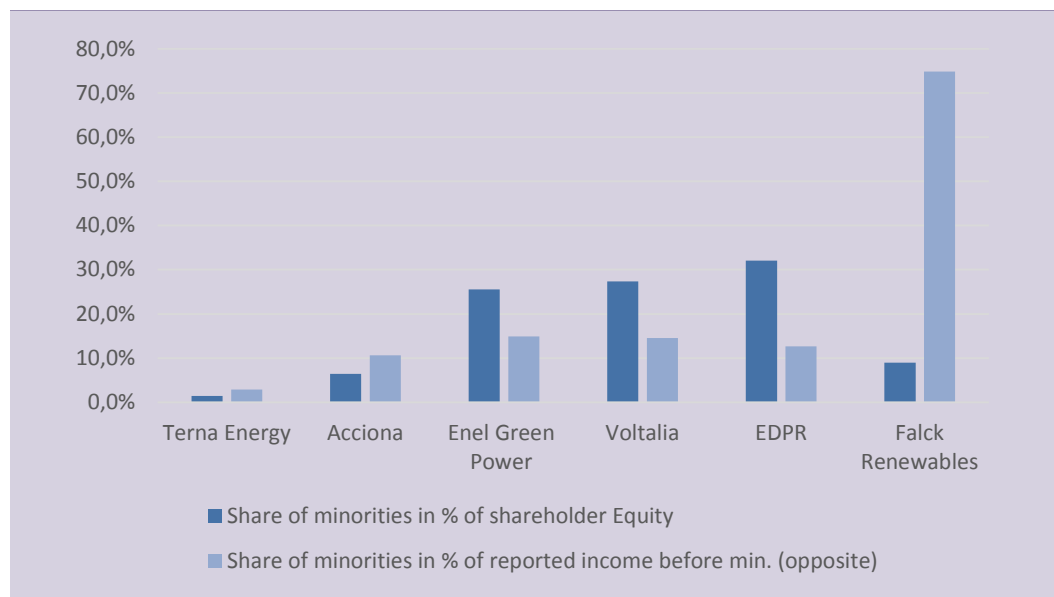
Fig. 19: EDPR – evolution of minorities in developing business



Source: Company Data; Bryan, Garnier & Co ests.; EIA

When comparing **EDPR** with **Enel Green Power** and **Acciona** (*over a similar period*), we observe a similar trend, yet to a lesser extent. Inside its European peer group, EDPR has clearly overplayed this growth strategy, to the detriment of EDPR’s shareholders (*lower ability to distribute dividends*). Other large European renewables groups are also using this strategy to expand faster, and to reduce financial risk, yet we see EDPR is one of the quoted companies with the highest share of minorities **in its P&L/balance sheet**.

Fig. 20: EDPR vs. peers – share of minorities



Source: Company Data; Bryan, Garnier & Co ests.

5.2.5. Its poor dividend distribution policy

The renewable sector is not so generous with its shareholders, as groups favour the building of future capacities to the detriment of distributing dividends. Shareholders are therefore rewarded only through share price rises (*which is set to reflect the rise in the EBITDA linked to additional projects*), especially when the company is still small. EDPR, despite being one of the European quoted leaders, is no exception to the rule as over past two years in hasn't distribute any dividends, despite a decline in its leverage ratio.

Given we have limited visibility on the annual capex envelop the group will spend beyond 2017, dividend estimates could potentially be easily revised down or up depending on whether the group spends more or less than what we have modelled.

Yet even assuming a **50% pay-out ratio**, which is frequently the rate of distribution we find in the renewables sector, when companies are distributing one, this will only imply a yield of less than **2%** on average for 2016 and 2017. As a reminder, over past years, when EDPR distributed a dividend, the average pay-out was closer to **25-35%**, far from this **50%** observed in the renewables sector (*when there is a dividend distribution policy*). The group is therefore less generous than its peers, despite its solid financial position.

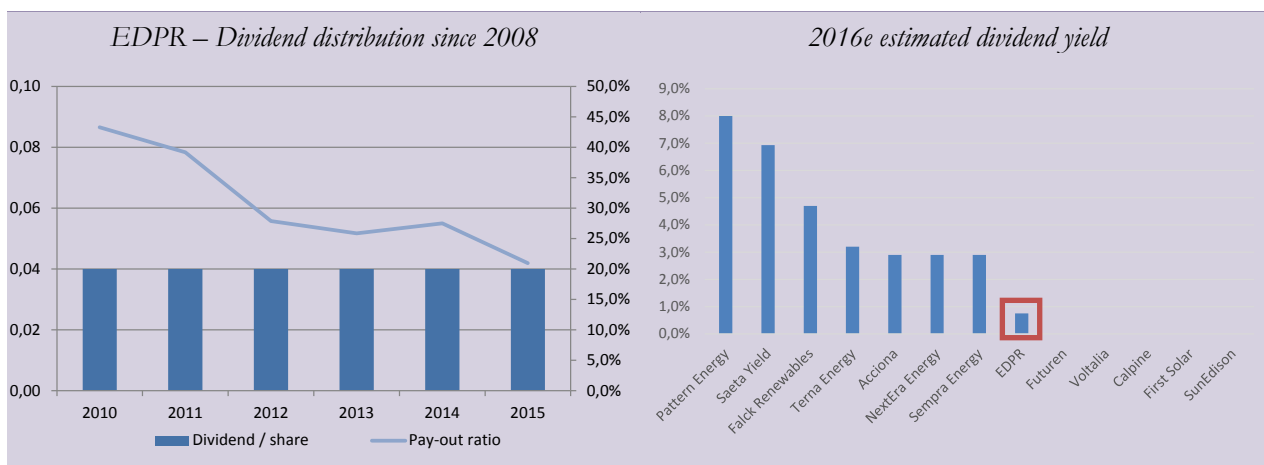
As for 2016 and 2017, we assume the group is able to distribute a dividend (*35% pay-out ratio*) which will only imply a yield of less than **1%**.

Fig. 21: EDPR vs. European and US peers – Dividend pay-out in 2014 & 2015

	Dividend pay-out 2014	Dividend pay-out 2015
EDPR	27.0%	25.0%
Acciona	0.0%	0.0%
Enel Green Power	42.9%	0.0%
Falck Renewables	600%	0.0%
Futuren	0.0%	0.0%
Saeta Yield	-	0.0%
Terna Energy	0%	56.3%
Volitalia	0%	0%
Calpine	0.0%	0.0%
First Solar	0.0%	0.0%
NextEra Energy	51.8%	50.8%
Pattern Energy	-232.1%	0.0%
Sempra Energy	57.0%	52.1%
SunEdison	0.0%	0.0%

Source: Company Data; Bryan, Garnier & Co ests.

Fig. 22: EDPR – a poor dividend distribution policy



Source: Company Data; Bryan, Garnier & Co ests.

6. Demanding valuation

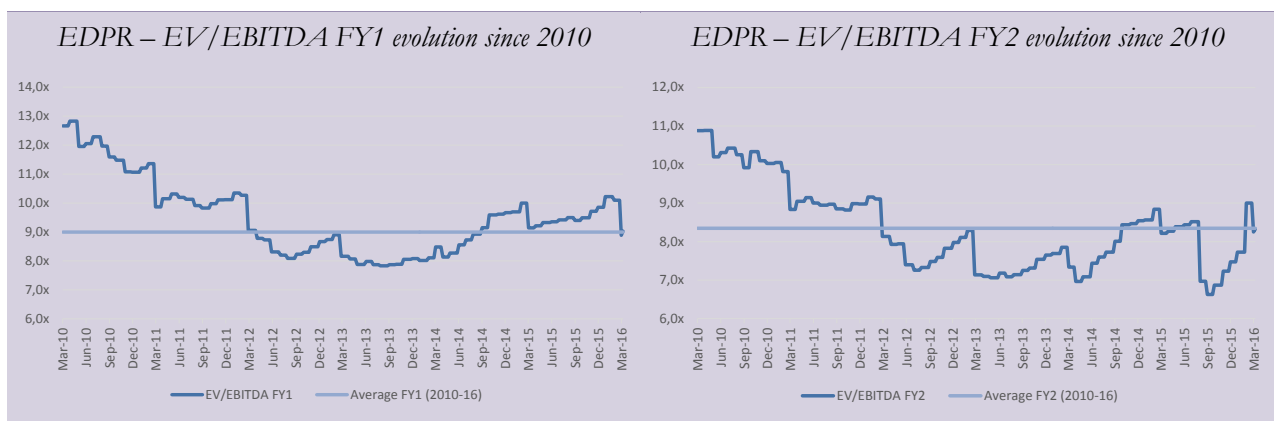
At the current share price, EDPR is not cheap, compared with both its historical multiples and its European and US peers, despite the limited share price performance since its IPO in June 2008 (-19.5%.)

Based on our estimates, EDPR is currently trading at **9.1x** its 2016e EBITDA and at **39x** its 2016e EPS, compared respectively with **9.0x** and **31.8x** on average since its IPO.

Given on average we do not forecast over the next five years a stronger EBITDA CAGR than that in the 2010-15 period, we see no reason for a rerating on the group on either EBITDA or P/E multiples.

In our model, we forecast an EBITDA CAGR of **8%** over 2015-2020 vs. **10%** generated by the group between 2010 and 2015.

Fig. 23: EDPR – EV/EBITDA FY1 & FY2 multiples



Source: Company Data; Bryan, Garnier & Co ests.

Fig. 24: EDPR – P/E FY1 & FY2 multiples



Source: Company Data; Bryan, Garnier & Co ests.

We come back to EDPR's valuation in the "Valuation" section, page 31..

7. Conclusion

Fundamentals on EDPR **are clearly strong** as the need for further renewables inside energy mix is increasing, and as the group will benefit from its historical presence to expand its footprint on other technologies (*solar notably*). We expect a lot from the group's investor day (May 5th) yet see short term risks on the case that could alter share price (*demanding valuation, political risks in U.S and risk of depreciation of dollar vs. euro*). We prefer then adopting a cautious view on the case and initiate with a Neutral rating and a FV of **EUR7.5/share**. Inside our renewables universe we continue to favour Albioma and Voltalia which offers higher EBITDA CAGR on the short term and more attractive yield (*Albioma*).

Neutral, FV with FV at EUR7.5/share.

8. Financial estimates

Fig. 25: Simplified Profit & Loss Account (EURm) & CFS

Simplified Profit & Loss Account (EURm)	2012	2013	2014	2015	2016e	2017e	2018e
Revenues	1 285	1 316	1 278	1 549	1 750	1 927	2 128
Change (%)	20,2%	2,4%	-2,9%	21,2%	13,0%	10,1%	10,4%
Adjusted EBITDA	938	903	920	1 142	1 198	1 306	1 432
EBIT	449	473	423	578	606	668	722
Change (%)	29,0%	5,3%	-10,5%	36,5%	4,9%	10,1%	8,2%
Financial results	-278	-262	-250	-285	-290	-300	-293
Pre-Tax profits	181	226	195	291	317	368	429
Exceptionals	3	0	0	0	0	0	0
Tax	-46	-57	-16	-45	-67	-85	-103
Profits from associates	0	0	0	0	0	0	0
Minority interests	-10	-34	-52	-79	-102	-107	-112
Net profit	125	135	127	167	148	176	213
Restated net profit	125	135	127	167	148	176	213
Change (%)	40,5%	7,9%	-5,9%	31,2%	-11,1%	18,9%	21,1%
Cash Flow Statement (EURm)	2012	2013	2014	2015	2016e	2017e	2018e
Operating cash flows	486	495	589	730	600	776	920
Change in working capital	-66	-30	-16	-127	-156	-54	-19
Capex, net	-612	-627	-732	-903	-982	-555	-715
Financial investments, net	146	230	562	-130	600	0	0
Dividends	-5	-58	-79	-115	0	-52	-62
Other	27	-21	-291	186	-51	-54	-56
Net debt	3 305	3 282	3 269	3 707	3 539	3 423	3 336
Free Cash flow	-335	-126	-143	-172	-381	221	206

Source: Company Data; Bryan, Garnier & Co ests

Fig. 26: Balance sheet (EURm)

Balance Sheet (EURm)	2012	2013	2014	2015	2016e	2017e	2018e
Tangible fixed assets	10 537	10 095	11 013	12 612	12 381	12 278	12 263
Intangibles assets	25	1 301	1 405	1 534	1 534	1 534	1 534
Cash & equivalents	246	255	369	437	605	721	808
current assets	937	1 207	1 476	1 093	1 333	1 516	1 679
Other assets	1 557	200	53	60	-101	-212	-294
Total assets	13 302	13 058	14 316	15 736	15 752	15 837	15 991
L & ST Debt	5 554	4 502	4 969	5 385	5 385	5 385	5 385
Others liabilities	1 999	2 466	3 016	3 516	3 435	3 449	3 507
Shareholders' funds	4 914	4 914	4 914	4 914	4 914	4 914	4 914
Total Liabilities	13 302	13 058	14 316	15 736	15 752	15 837	15 991
Capital employed	11 281	10 639	11 237	12 064	11 989	11 941	11 944

Source: Company Data; Bryan, Garnier & Co ests.

Fig. 27: Ratios (%) & Data per share (EUR)

Ratios	2012	2013	2014	2015	2016e	2017e	2018e
Operating margin	34,9%	35,9%	33,1%	37,3%	34,7%	34,6%	33,9%
Tax rate	25,4%	25,2%	9,5%	15,5%	21,0%	23,0%	24,0%
Net margin	9,7%	10,3%	9,9%	10,8%	8,3%	9,0%	9,9%
ROE (after tax)	2,2%	2,2%	2,0%	2,4%	2,1%	2,5%	3,0%
ROCE (after tax)	3,6%	3,9%	2,5%	4,4%	4,5%	4,9%	5,2%
Gearing	92,3%	69,7%	72,7%	72,4%	69,9%	67,5%	65,4%
Pay out ratio	27,9%	25,8%	27,5%	20,9%	35,0%	35,0%	35,0%
Number of shares, diluted	872	872	872	872	872	872	872
Data per Share (EUR)	2012	2013	2014	2015	2016e	2017e	2018e
EPS	0,14	0,15	0,15	0,19	0,17	0,20	0,24
Restated EPS	0,14	0,15	0,15	0,19	0,17	0,20	0,24
% change	40,5%	7,9%	-5,9%	31,2%	-12,9%	19,9%	21,3%
EPS bef. GDW	0,14	0,15	0,15	0,19	0,17	0,20	0,24
BVPS	6,22	6,50	6,63	6,85	6,97	7,11	7,29
Operating cash flows	0,6	0,6	0,7	0,8	0,7	0,9	1,1
FCF	-0,4	-0,1	-0,2	-0,2	-0,4	0,3	0,2
Net dividend	0,04	0,04	0,04	0,04	0,06	0,07	0,08

Source: Company Data; Bryan, Garnier & Co ests.

9. Valuation

We value EDPR through a **SOTP** (50%) and a **DCF** (50%) to reflect both the market value investors place on EnR companies and the intrinsic value of the business. Our SOTP gives us a FV of **EUR7.2/share** while our DCF gives us a **FV of EUR8/share**, leading to a **FV of EUR7.5/share**, which implies **16% upside**.

9.1. SOTP (EUR7.2/share)

We identified several competitors for the group, in Europe, North America and LatAm, to reflect fully the market value of the group's renewables assets located in these regions. As a reminder, the group has a strong exposure to wind technology and a strong exposure to **Europe** (53%) and **North America** (46%) with important capacity expansions in the regions expected over the next 3-4 years.

In Europe, we identified (*in alphabetic order*) **seven peers** for EDPR:

- **Acciona** (*Spain*): Independent power producer focused on renewable sources with 8.6GW of installed capacity. The group historically developed a specialisation in wind technologies which concentrate more than 1GW of capacities, i.e. **82%** of total capacity. The rest of the assets are hydro and solar plants. The group generated last year, **EUR1.17bn of EBITDA** (17.9% of margin), and **EUR207m** (3.2% of sales) of net income.
- **Enel Green Power** (*Italy*): Power producer and Enel's subsidiary (*fully owned now*) with **9.6GW** of installed capacity. Wind represents Enel Green Power's core business with **5.7GW**, followed by **2.6GW** in hydro, however other sources such as geothermal, solar and biomass are also operated. Stronger presence in Europe with 61% of capacity vs **22%** in North America and **17%** in Latin America. The group generated last year **EUR1.83bn** of EBITDA (61% of margin), and **EUR166m** (5.6% of sales) of net income.
- **Falck Renewables** (*Italy*): Independent power producer in renewables, and especially in wind in which the group invested **93%** of its total installed capacity of **726MW**, solar and biomass are insignificant businesses for the group. Equal geographical exposure between the **UK** (318MW) and **Italy** (343MW), leaving little space for France and Spain. The group generated last year **EUR152m** of EBITDA (56% of margin), and **EUR5.3m** of net income (1.9% of sales).
- **Futuren** (*France*): Independent power producer (*ex-Theolia*) which builds and operates renewable energy plants. As an on-shore wind specialist, the group is operating **732MW** of wind capacity including half for third-parties. Its focus is mainly turned towards Europe with 292MW installed and 682MW operated in Germany, France and Italy; the remainder is located in Morocco. The group generated last year **EUR34.5m of EBITDA** (58% of margin), and **EUR2m** of net income (3.2% of sales).

- **Saeta Yield** (*Spain*): Independent power producer currently operating **689MW** divided into **539MW** wind and **150MW** solar energy, all plants are located in Spain. Could double installed capacity by end of 2017 with developments in wind energy and geographical diversification in LatAm and Portugal, thanks to partnerships and right of first offer agreements. The group generated last year **EUR156m** of EBITDA (*71% of margin*), and **EUR16m** of net income (*7.3% of sales*).
- **Terna Energy** (*Greece*): Independent power producer operating **667MW** in renewable energy sources, plant builder and electricity energy trader with power production representing almost **71%** of the group's revenues. Strong exposure to wind energy with **640MW** of installed capacity, mostly set up in Greece (*502MW*) and to a lesser extent in the US (*138MW*). The group generated last year **EUR98.2m** of EBITDA (*49.4% of margin*), and **EUR17.4m** of net income (*8.8% of sales*).
- **Volitalia** (*France*): An independent power producer focused on renewables. Operates a total installed capacity of **376MW** through several renewable energy sources such as wind, solar, hydro and biomass with a specialisation in wind (*333MW*). It has developed a strong presence in Brazil which concentrates **80%** of installed capacity, and to a lesser extent in France and Morocco. The group generated last year **EUR30m** of EBITDA (*58% of margin*), and **EUR3.9m** of net income (*6.7% of sales*).

In North America, we identified (*by alphabetic order*) **six peers** for EDPR:

- **Calpine** (*US*): American independent power producer which operates more than **27GW** of installed capacities in the US. Only **3%** of this figure is allocated to renewable energies through geothermal (*725MW*), the remainder is set for combined cycle and simple cycles. Assets are only based in the US. The group generated last year **USD1.98bn** of EBITDA (*30% of margin*), and **USD385m** of net income (*6% of sales*).
- **First solar** (*US*): Power producer with a unique expertise in solar technologies which represents the whole of its installed capacities: i.e. **10GW**. Equal exposure to the US, European and Indian markets with non-significant farms in other countries such as Australia, LatAm and Japan. The group generated last year **USD774m** of EBITDA (*22% of margin*), and **USD546m** of net income (*15% of sales*).
- **NextEra Energy** (*US*): Power producer and retailer group (*44.9GW of installed capacity*) composed of two subsidiaries: FPL, the third largest rate-regulated power utility specialised in natural gas and nuclear, and NexEra Energy Resources, focused on renewables such as wind (*11.4GW*) and solar (*740MW*). It has a strong exposure to North America and more precisely to the US. The consensus currently estimates the group will post **USD7.9bn** of EBITDA (*44% of margin*) and net income of **EUR2.8bn** (*16% of sales*) in 2015.

- **Pattern Energy (US):** Independent power company with a wind power generation speciality. Operates 16 wind power facilities, i.e. **2.3GW** mainly in the US and to a lesser extent in Canada and Chile. Strong guidance with **5GW** wind capacity targeted for 2019. The group generated last year **USD251m** of EBITDA (*76% of margin*), and minus **USD33m** of net income (*10% of sales*).

- **Sempra Energy (US):** Energy developer, operator and provider in the US. Operates around 2GW with the majority in natural gas, the remaining installed capacities are split between solar (*330MW*) and wind (*638MW*). The group generated last year **USD1.06bn** of EBITDA (*25% of margin*), and **USD606m** of net income (*14% of sales*).

- **SunEdison (US):** Independent renewable energy development company which operates **2.2GW** of capacity. Equilibrated technology exposure between solar and wind with 1.1GW of installed capacity for both. The consensus currently estimates the group will post minus **USD167m of EBITDA** (*-8.5% of margin*) and negative net income of **EUR1bn** (*-53% of sales*) for 2015.

Fig. 28: EDPR vs. peers

Company	Country	Installed capacity (MW)	EBITDA margin	EBITDA margin	EV/EBITDA	EV/EBITDA	P/E 16e	P/E 17e
			16e	17e	16e	17e		
Acciona	Spain	8 619	18.6%	18.8%	7.9x	7.5x	19.4x	17.0x
Enel Green Power	Italy	9 600	62.0%	61.1%	9.1x	8.4x	26.1x	23.6x
Falck Renewables	Italy	726	51.5%	52.4%	7.0x	6.3x	48.3x	29.4x
Futuren	France	343	57.4%					
Saeta Yield	Spain	689	57.0%	55.7%	9.8x	9.1x	21.5x	18.6x
Terna Energy	Greece	667	54.6%	58.2%	5.5x	4.9x	15.5x	14.5x
Volitalia	France	376	59.9%	61.4%	10.9x	7.7x	13.0x	13.0x
Sub European sector	EU	3 003	51.6%	51.3%	8.4x	7.3x	24.0x	19.4x
Calpine	US	725	33.9%	33.9%	8.9x	8.0x	25.2x	14.6x
First Solar	US	10 000	14.1%	16.2%	11.5x	9.1x	10.2x	17.8x
NextEra Energy	US	12 140	44.5%	45.5%	11.1x	10.3x	19.4x	18.3x
Pattern Energy	US	2 300	72.9%	77.1%	10.3x	7.2x	90.5x	53.0x
Sempra Energy	US	968	32.5%	34.6%	11.1x	9.5x	20.5x	18.8x
SunEdison	US	2 200	23.6%	30.2%		10.2x		
Sub American sector	US	4 722	36.9%	39.6%	10.6x	9.1x	33.2x	24.5x
Renewables sector		3 863	44.2%	45.4%	9.5x	8.2x	28.6x	21.9x
EDPR	Portugal	9 282	69.0%	70.0%	9.1x	7.7x	34.7x	24.2x
Difference with sector	-	1.40x	56.0%	54.1%	-4.1%	-5.8%	21.5%	10.4%

Source: Company Data; Bryan, Garnier & Co ests.

On average, on all four multiples (*EV/EBITDA 16 & 17 and P/E 16 & 17*), EDPR is currently valued at **5-6% above** other European and US peers, comforting our **Neutral view** on the investment case.

Our **SOTP** is currently based on the multiples implied by the peer group comparison. We then value EDPR by using different multiples in function of the region it operates, and in function of the technology it operates. This method is valuing the group at **EUR7.4/share**, which implies only **10%** upside to latest share price.

Fig. 29: EDPR SOTP (EURm)

EDPR SOTP valuation	Value (EURm)	Implied EV/EBITDA 2016e	EBITDA 2016e	Method	% Weigh of EV	Value per share
Europe	5 683	8,5x	669	Implied multiple	53,1%	6,5
o/w Spain	2 078	8,0x	260	8x EBITDA	19,4%	2,4
o/w Portugal	2 209	9,0x	245	9x EBITDA	20,6%	2,5
o/w RoE & Others	1 396	8,5x	164	8,5x EBITDA	13,0%	1,6
North America	4 926	9,5x	519	9,5x EBITDA	46,0%	5,6
Brazil	279	8,5x	33	8,5x EBITDA	2,6%	0,3
Consolidation	(179)	8,0x	(22)	8x EBITDA	-1,7%	(0,2)
Implied EV	10 709	5,7x	1 868	-	-	12,3
Net financial debt at end 2016e	(3 577)					(4,1)
Institutional Partnership Liability - end 2015	(1 114)					(1,3)
Provisions (@ Book value)	(107)					(0,1)
o/w Dismantling and decommission provisions	(105)					(0,1)
o/w Provision for other liabilities and charges	(2)					(0,0)
o/w Employee benefits	(0)					(0,0)
Minorities (@ Book value)	(863)					(1,0)
Financial assets not integrated into net financial debt calculation	386					0,4
Total implied Equity value	6 296					7,2
Number of shares (net of owns shares) (m)	872,3					
Equity value per share	7,2					
Current share price	6,44					
Up/Downside	12,2%					

Source: Company Data; Bryan, Garnier & Co ests.

As for **Europe** (*Spain, Portugal and RoE*) we value EDPR business unit at **8.5x** its 2016e EBITDA, which is an average of the implied multiples of the European peers for 2016 & 2017 (*see table below*). We put a premium on Portugal as the group is generating a higher EBITDA margin in the region, compared with other European countries.

As for **North America**, we value EDPR business unit at **9.5x** its 2016e EBITDA which is an average of the implied multiples of the American peers for 2016 & 2017 (*see table below*).

As for the Latam business unit, we value EDPR business unit at **8.5x** in line with multiples of the sector in the region.

We do not value separately the solar business of the group given the quite small contribution to group's EBITDA, at end 2016.

9.2. DCF (EUR8/share)

We also value EDPR through a DCF model, to fully reflect the EBITDA growth generated by the ambitious capex program of the group. By using this method, we find a FV of **EUR8/share** too, almost in line with our SOTP. Our DCF is currently based on a WACC of **6.5%**.

Fig. 30: EDPR - DCF

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Perpetuity
Revenues - EURm	1 750	1 927	2 128	2 335	2 549	2 752	2 961	3 175	3 396	3 623	3 447
Revenue Growth Rate		10,1%	10,4%	9,7%	9,2%	8,0%	7,6%	7,2%	6,9%	6,7%	1,5%
Operating Margin	34,7%	34,6%	33,9%	33,4%	32,5%	31,8%	32,5%	32,2%	32,0%	31,8%	28,0%
EBIT	606	668	722	779	829	875	963	1 024	1 087	1 152	965
Adjustment for provisions	2	2	2	2	2	2	2	2	2	2	2
(-) Taxes on EBIT	-127	-154	-173	-187	-199	-210	-231	-246	-261	-276	-232
(+/-) Movments in working capital	-156	-54	-19	15	-4	-32	-52	-73	-94	-116	-52
(+) Depreciation and amortization	612	658	730	804	879	960	1 003	1 076	1 150	1 227	1 167
(-) Capital Expenditures	-982	-555	-715	-717	-720	-658	-660	-663	-665	-668	-1 167
(-) Intangibles	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
Free Cash Flow	-45	565	547	696	787	937	1 025	1 121	1 219	1 320	683
Present Value of Free Cash Flow	-42	497	453	540	574	642	659	676	691	702	341

Source: Company Data; Bryan, Garnier & Co ests.

Fig. 31: EDPR - DCF conclusion

PV of Free Cash Flows	5 391,7
PV of Terminal Value	6 824,4
Value of Operating Assets	12 216,1
Net debt (-) end 2015	(3 577,3)
Pensions (-) 2015 book value	(107,4)
Financial assets (+) 2015 book value	385,7
Minorities (-) 2015 book value	(863,0)
Institutional Partnership Liability (EURm) - end 2015	(1 114,0)
Value of Equity	6 940,1
Shares	872,3
Value of Equity per share	8,0

Source: Company Data; Bryan, Garnier & Co ests.

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Bryan Garnier stock rating system

For the purposes of this Report, the Bryan Garnier stock rating system is defined as follows:

Stock rating

BUY	Positive opinion for a stock where we expect a favourable performance in absolute terms over a period of 6 months from the publication of a recommendation. This opinion is based not only on the FV (the potential upside based on valuation), but also takes into account a number of elements that could include a SWOT analysis, momentum, technical aspects or the sector backdrop. Every subsequent published update on the stock will feature an introduction outlining the key reasons behind the opinion.
NEUTRAL	Opinion recommending not to trade in a stock short-term, neither as a BUYER or a SELLER, due to a specific set of factors. This view is intended to be temporary. It may reflect different situations, but in particular those where a fair value shows no significant potential or where an upcoming binary event constitutes a high-risk that is difficult to quantify. Every subsequent published update on the stock will feature an introduction outlining the key reasons behind the opinion.
SELL	Negative opinion for a stock where we expect an unfavourable performance in absolute terms over a period of 6 months from the publication of a recommendation. This opinion is based not only on the FV (the potential downside based on valuation), but also takes into account a number of elements that could include a SWOT analysis, momentum, technical aspects or the sector backdrop. Every subsequent published update on the stock will feature an introduction outlining the key reasons behind the opinion.

Distribution of stock ratings

BUY ratings 59,6%

NEUTRAL ratings 32,4%

SELL ratings 8,1%

Research Disclosure Legend

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