

EDP RENOVÁVEIS

UTILITIES

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COMPANY REPORT

6 JANUARY 2014

Increasing presence on trendy markets

Leading position in a promising and evolving sector

- EDP Renováveis is in the top 5 companies worldwide in terms of wind-installed capacity (7,987 MW in 2012) and has been able to maintain its position thanks to an incredible adaptability to market changes and new trends. The ability to anticipate trends in the sector is key for the success of the company.
- Perceiving that the Iberian market is already mature, the company is betting on the addition of capacity in emerging economies – Romania and Poland account for 41% and are the greatest drivers of forecasted growth, and in the U.S (28%), where new opportunities for the energy renewable sector are arising.
- The company aims to reduce its long-term leverage by enhancing in an asset rotation strategy, which is based on the selling of minority stakes of consolidated on-going projects, in order to raise funds for other promising prospects.
- Albeit the relative importance of subsidies and government support in the sustainability of the sector is decreasing, due to technological improvements, those incentives are still essential for companies like EDPR. The inclusion of a General Tax in Spain (7% over revenues) will impact the target price in € 0.32.

Company description

EDP Renovaveis SA is a renewable energy firm headquartered in Spain. Its core business is based on the development, process and preservation of mainly wind, solar and hydroelectric power stations. Energias de Portugal S.A. is its major shareholder accounting 77.5% of interest, whereas the remaining 22.5% are free float and mainly held by institutional investors.

Recommendation: **BUY**

Vs Previous Recommendation BUY

Price Target FY14: **5.29 €**

Vs Previous Price Target 4.71 €

Price (as of 5-Jan-14) **3.90 €**

Reuters: EDPR institutional site, Bloomberg

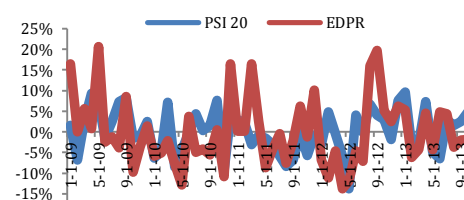
52-week range (€) 3.58-4.36

Market Cap (€m) 3.492

Outstanding Shares (m) 872

Source: Reuters

PSI 20 vs. EDPR returns



Source: Bloomberg

(Values in € millions)	2012	2013E	2014F
Revenues	1,285	1,387	1,501
EBITDA	937	1,031	1,120
Net Profit	136	180	211
Non-Controlling Interests	10	45	53
Total Assets	13,301	13,760	14,269
Total Liabilities	7,553	7,830	8,128
EBITDA Margin	73%	74%	75%
Interest Coverage Ratio	2.08	2.36	2.53
EV/EBITDA	7.81	11.26	9.68
EV/MW	0.92	1.31	1.21

Source: Company's Reports; NOVA Equity Research

THIS REPORT WAS PREPARED BY JOÃO CARLOS FERVENÇA, A MASTERS IN FINANCE STUDENT OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS, EXCLUSIVELY FOR ACADEMIC PURPOSES. THIS REPORT WAS SUPERVISED BY ROSÁRIO ANDRÉ WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (SEE DISCLOSURES AND DISCLAIMERS AT END OF DOCUMENT)

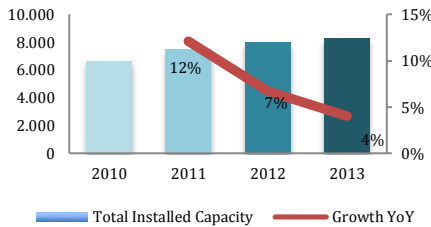
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Company overview

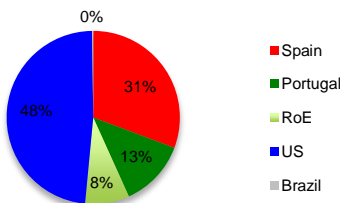
Company description

Chart 1: EDPR Installed Capacity (MW)



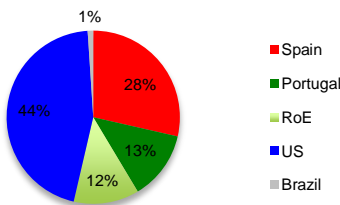
Source: EDPR's Reports; NOVA Equity Research

Chart 2: Installed Capacity per region 2010 MW



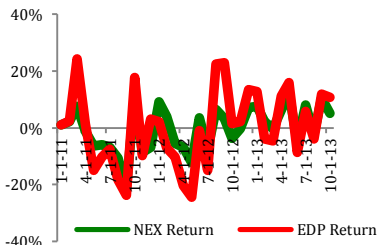
Source: EDPR's Reports; NOVA Equity Research

Chart 3: Installed Capacity per region 2013E MW



Source: EDPR's Reports; NOVA Equity Research

Chart 4 – NEX vs. EDPR return



Source: Bloomberg, NOVA Equity Research

EDP Renováveis (Euronext: EDPR) is a leading global renewable energy company devoted to value creation, innovation and sustainability. It operates in two main strategic regions: Europe (Spain, Portugal, Romania and Poland are its main revenue yielders) and America (U.S., Brazil, and prospects on Canada). Consequently, these assets are managed by two regional platforms: EDPR¹ Europe – headquartered in Madrid – “oversees the development, construction and operation of assets in the European Union and other Regions renewable energy assets of the EDP Group”²; and EDPR North America, which is headquartered in Houston, manages assets from the U.S. and Canada.

EDPR is traded at PSI 20 and has an extraordinary ability to adapt itself to market changes and shifts, having now the strategy to enter and consolidate its presence on emerging markets. It has been developing wind farms for more than 15 years and is publicly traded since 2008.

According to the information given by the company, we predict that in the end of 2013, EDPR will have an installed capacity of more than 8,000 megawatts, which corresponds to a growth of over 2,500 megawatts when compared to 2010 and a CAGR of 7.5% in the same period (chart 1). It is interesting to analyse the shifts in weights that each region has suffered, demonstrating the adaptability of EDPR to the economic climate and trends. EDPR is not afraid of readapting its strategy when necessary (charts 2 and 3).

During the period, EDPR clearly bet on the Rest of Europe region, namely on Romania and Poland, as will be explained later on.

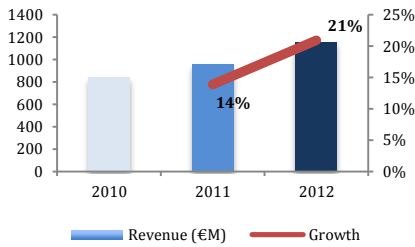
EDPR is a company that highly values sustainable practices and corporate social responsibility, having been included in the FTSE4Good index in 2011 and attained the leading position on March 2013. Being the number one is a great accomplishment for EDPR causes, as the company presents corporate social responsibility as one of its flags.

In addition to these, EDP Renováveis is also included in the WilderHill New Energy Global Innovation Index (**NEX**), which is composed of companies whose innovative technologies and services centre on the manufacture and usage of cleaner energy, its conservation and proficiency (chart 4).

¹ Refers to EDP Renováveis

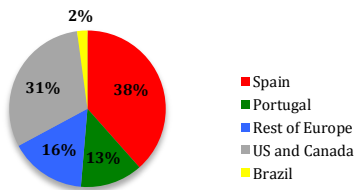
² “Source: Who are we” section in EDP Renovaveis institutional website

Chart 5 – EDPR Revenue (M€)



Source: EDPR's Reports; NOVA Equity Research

Chart 6 – Revenue Breakdown 2012



Source: NOVA Equity Research

EDPR's revenues have been growing consistently over the last 3 years, surpassing the barrier of €1 billion (chart 5). This comes as a consequence of the increasing importance and deeper relevance of renewable energy in the overall energy industry, the solid electricity output (+7% YoY), the quality assets provided by the company (proficient load factors of 29% and high availability of 97.6%) and the selling price increase (1% YoY, from €63.9 p/MW to €64.5 p/MW). Very few companies have more wind-installed capacity than EDPR, which makes EDPR a key player in this sprouting industry.

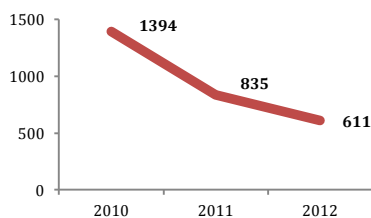
This revenue comes from the operations the company has on its more than 10 regions, mainly from Spain (38%), U.S (31%) and Rest of Europe (16%) - chart 6. It is important to refer that the greatest share of its Rest of Europe's revenue comes from France, Romania and Poland³.

As of September 2013⁴, EDPR had 7.8 gigawatts of EBITDA consolidated capacity with low market risk as 93% have predefined remuneration schemes with a long-term profile and the little remaining 7% are exposed to US spot wholesale electricity markets. The previously stated risk refers to the fact that we are talking about long-term contracts with defined remuneration schemes, meaning that there is low uncertainty. From the 14.2 terawatts produced in the period (9M12-9M13), 90% were sold under PPAs⁵ or regulated framework arrangements with long-term maturity until at least 2020 (vs. 88% in 9M12). This means that the company is very little exposed and properly shielded against the short-term volatility of energy prices. The other side of the coin is that if the PPAs are made under extremely low price conditions, and if there is an increase of prices, the company will be negatively impacted when renegotiating the contract.

The average selling price increased 1% YoY⁶ to €64.5, as a result of the higher influence from the production in Europe and the superior prices in the US (+5% YoY) and Brazil (+9% YoY). However, the average realized price in Europe diminished 2%, mainly resultant from the lower selling prices in Spain, outcome of the cessation of the Transitory Regime.

It would not have been possible to attain this boost in revenues without the necessary **capital expenditure** (CapEx, chart 7). It is understandable that the CapEx is higher in an initial phase, as more investments are necessary to kick off production. We forecasted that the expenditure will remain at high

Chart 7 – CapEx (M€)



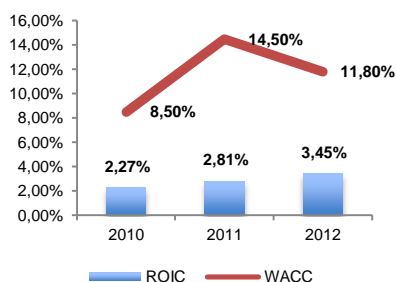
Source: EDPR's Reports; NOVA Equity Research

³ Rest of Europe stands for France, Belgium, Poland, Romania and Italy in our valuation

⁴ Source: 9M2013 Results from EDP Renováveis

⁵ Power purchase agreements

⁶ Evolution in the last year

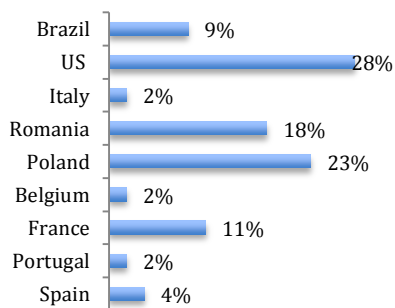
Chart 8 – ROIC vs. WACC

Source: EDPR's Reports; Bloomberg; NOVA Equity Research

Table 1

Under construction capacity MW	9M13	2013E
Spain	0	0
Portugal	5	34
RoE	169	256
US	0	30
Brazil	0	0

Source: EDPR's Reports; NOVA Equity Research

Chart 9 – Additions MW 2014-2015

Source: EDPR's Reports

levels until 2015⁷. Historically, the WACC has been higher than the ROIC for projects of EDPR (chart 8), although the ROIC has been steadily increasing and is expected to continue its path in our valuation.

One important assumption made was that all the under construction capacity will be incorporated in the first year of the projections – 2013 (table 1).

In order to forecast the additions in installed capacity per region, we observed data given by the company on its Roadshow presentation in the end of 2012, in which it stated the capacity that EDPR forecasted to add between 2012-2015 and the percentage referent to each region. Between 2014-2015, EDPR expects to add to its installed capacity 1,300 megawatts (chart 9). From that year until the end of our analysis, we assumed that the yearly addition would be half of the addition forecasted for 2015.

Asset Rotation strategy

EDPR has been successfully exploring an asset rotation strategy for the past 2 years, having risen approximately €620 million with the sale of minority stakes of Eolic operating parks to investment funds. The last sale was of a park in France for a value of €126 million to 2 subsidiaries of AXO Group. Its goal is to escalate the value of upcoming cash flow of on-going projects, in order to ensue with a reinvestment on projects that are perceived as adding-value opportunities. Due to its extreme importance, we have decided to include this rubric in our valuation, and assumed that each year there would be an asset rotation worth 310M⁸, until 2015.

The value of the signed agreements averaged an EV/MW value of 1.4m/MW, above our estimate of 1.36m/MW⁹, meaning the EDPR did a good business with these transactions, especially when analysing that part of the operations sold are placed in the U.S (where institutional investors are needed). We believe that the asset rotation performed by EDPR was successful as the company is heavily betting on projects with higher expected returns (e.g. Rest of Europe) and needs liquidity for proceeding with them. In fact, there are on-going negotiation for further asset rotations with both Institutional Investors and China Three Gorges.

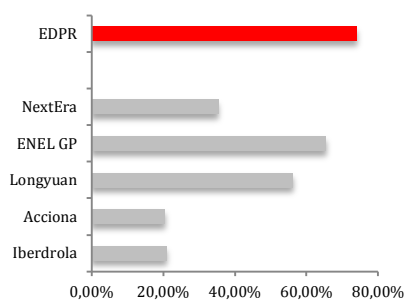
Comparable companies

For better analysing EDP Renováveis, 5 comparable companies were selected: Acciona, Longyuan, Enel Green Power (all included in the NEX

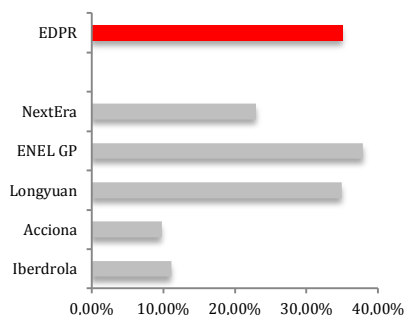
⁷ According to the roadshow made in December 2012, the company forecasted CapEx of 3.2 billion between 2012-2015

⁸ Average annual amount of the 4 transactions in the last 2 years

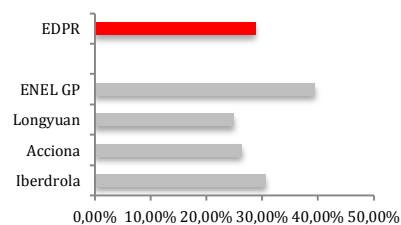
⁹ Case-base Scenario

Chart 10 – EBITDA Margin 2012

Source: Company's Reports; NOVA Equity Research

Chart 11 – Operating Margin 2012

Source: Company's Reports; NOVA Equity Research

Chart 12 – Load factor (%)

Source: Company's Reports; NOVA Equity Research

index), Iberdrola and NextEra¹⁰. These companies were chosen mainly because 4 of them, along with EDPR, represent the Top5 players regarding wind-installed capacity. The “outlier” Enel Green Power was also taken into account as it is present in the same regions as EDPR and has also an important presence in the wind production business.

Table 2 – Installed Capacity MW¹¹

Top 5 Companies	Iberdrola	Longyuan	NextEra	EDPR	Acciona
Installed Capacity	14101	10660	10000	8165	6291
Total (9M13)	49217				

Source: Company's reports; NOVA Equity Research

Firstly, in terms of operations, EDPR is the company among its peers¹² with the highest EBITDA margin¹³, however is only slightly surpassed by ENEL Green Power in terms of operating margin¹⁴ (charts 10 e 11). It is important to point out the considerable difference between both margins, explained by the high values of depreciation and amortization of the installed capacity. EDPR operates in a capital intensive industry, meaning that it requires a great quantity of expensive property, plants and equipments to operate, which logically have to be depreciated and affect the income statement. We understand depreciation to be linearly dependent of the installed capacity (% of installed capacity) in our forecasts. In terms of load factor (chart 12), this is, the ratio between the actual generation of power and the theoretical output, EDPR has attained in the 3rd Quarter of 2013 an average value compared to its peers¹⁵, as Enel Green Power¹⁶ and Iberdrola were able to reach higher percentages. Since its inception and throughout the company's operating years, EDPR has not been able to surpass the 30% barrier and has always had a load factor above 28%.

EDPR has a small market capitalization when compared to its peers (€3,484M, being only Acciona smaller¹⁷). A very important measure in this

¹⁰ Description of the companies on annex 1

¹¹ Some of the values correspond to data from 2012 year end and other from 9M13

¹² Our analysis considers the comparable companies as a whole, and not only the Eolic operations

¹³ EBITDA/Revenues

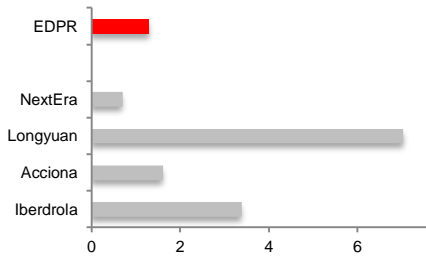
¹⁴ EBIT/Revenues

¹⁵ No information encountered for NextEra

¹⁶ Includes water load factor

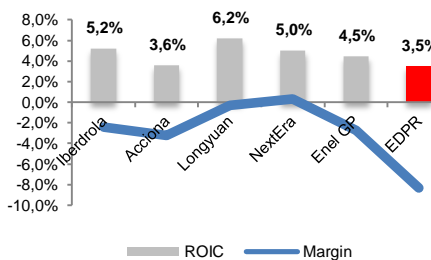
¹⁷ Market-cap: Iberdrola (€25,393M), Acciona (€3,212M), Enel Green Power (€7,025M), Longyuan (€34,897M), NextEra (€29,337M) – data from 2012 year end

Chart 13– Net Tangible Assets / Installed Capacity in 2012



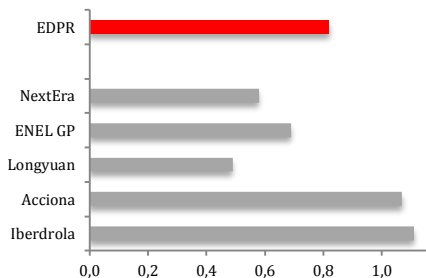
Source: Bloomberg; Company's reports; NOVA Equity Research

Chart 14– ROIC vs. WACC



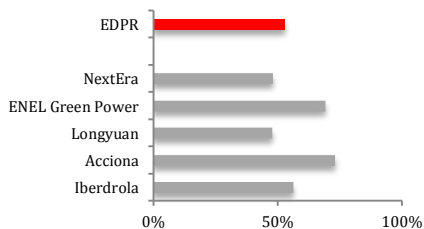
Source: Bloomberg; Company's reports; NOVA Equity Research

Chart 15– Current Ratio 2012



Source: Bloomberg; NOVA Equity Research

Chart 16– Leverage (D/(D+E)) 2012



Source: Bloomberg; NOVA Equity Research

sector is the capital expenditure per megawatt that is added to the installed capacity. As the ratio explains by itself, the lower its value, the more efficient will a company be in adding operating capacity. As we do not have the information of the CapEx for the 4th quarter of 2013, we opted to analyse this ratio relative to the additions in megawatts registered between 2011 and 2012.

EDPR, comparing to its peers, is being extremely efficient in the capital it allocates per megawatt (€1.21). The company expects to maintain this ratio between 1.2 and 1.3 over the next 3 years. It is interesting to notice that only Iberdrola has spent less capital p/MW it has installed in the period, and Acciona spent 55% more p/MW.

In order to better understand EDPR's position in relation to its peers in terms of rentability of investments, we also opted to analyse the ratio between net tangible assets and installed capacity (chart 13). EDPR has a ratio of 1.29, being only above NextEra in terms of operational relation between its net tangible assets and the installed capacity it has. Also, if we look at the relation between the ROIC and WACC in 2012, we can understand that margins are all negative (except for NextEra), which is a recurrent fact in the renewable energy sector (chart 14), although EDPR's ROIC increases in our valuation, reaching 5.4% in 2018¹⁸ (increase of nearly 2% since 2012).

Regarding the ability to pay its short-term obligations, EDPR is again on an average position, with a current ratio of 0.82 (chart 15). Only Iberdrola and Acciona have enough liquidity in their current assets that would cover its current liabilities. In an opposite position, Nextera has a very low ratio and presents itself in an illiquid position.

Another aspect that is relevant to analyse regarding EDPR's peers is their capital structure (or leverage), as it will directly influence the weighted average capital cost¹⁹. EDPR finances itself 53% through debt²⁰, which when compared to the company's we analysed, is a fairly reasonable share. Only Longyuan and NextEra have lower values (48%), whereas Acciona is extremely leveraged and could face problems later on due to this (chart 16).

Shareholder Structure and Dividend Policy

EDP Renováveis is 77.5% owned by Energias de Portugal S.A, while the other 22.5% are free float. This second share is mainly held by institutional investors, rather than private ones. The company has 3 subsidiaries: EDPR

¹⁸ Annex 8

¹⁹ Calculated at market values

²⁰ One of the asset rotation strategy's goals is to reduce this percentage, giving EDPR the ability to finance itself

Europe (owned 100% by EDPR Group), EDPR North America (owned 100% by EDPR Group), and EPR Brazil (owned 55% by EDPR Group and 45% by Energias do Brasil, which is by its turn owned 65% by EDP).

China Three Gorges recently entered in the capital structure of the company (21.35% of voting rights) and it will an extremely important help for EDPR to attain its goals. CTG is looking for high quality projects with transparent and stable cash flows, through partnerships for the sale of minority stakes in wind farms and for co-CapEx programs until 2015. CTG will provide for liquidity and financial support in the development of some projects. In fact, a 2nd asset rotation transaction is in progress.

The company has been announcing constantly its intention of distributing dividends (payout ratio of 25%-35%), however it has never been able to fulfill its investors' expectations until this year, when it distributed 28% of the net profit of the period (€129M). It was the first year that the company attained such a wealthy result, possibly meaning that it has chosen to retain net profits and not distribute dividends until this point, in order to use those funds to finance its operations. We understand that the opportunity cost of retaining those net profits was perceived as being higher than the opportunity cost of distributing them, once there were projects being developed that could yield higher returns to patient investors. For this reason, we believe that the company did well in retaining the net profits it was yielding, however it was necessary to give the market a signaling of wealth, which was accomplished with the recent distribution of dividends. We assumed, in our forecasts, the payout ratio to be equal to 25% in the period of analysis.

Valuation

- **General Assumptions**

In order to proceed with the valuation of the company, a series of assumptions had to be made. As one can easily understand, a global company that operates in several regions, especially in the energy sector, has different remuneration schemes, benefits, obligations, demands, etc, in each region. Due to this, it is way more reasonable and accurate to value each region separately and then, proceed with a sum of the parts (SoP) approach to reach the total value. The main criteria for the execution of the projects is its rentability (creation of value for the company through ROIC) and the interest of eventual investors in future asset rotation transactions.

Thus, we set 2 scenarios: a **base-case** scenario (75%) and a **pessimistic scenario** (25%). We valued 9 different regions, using the discounted cash flow method. Although we acknowledge that this method may not be the most

accurate for early stage regions (such as Italy), we also understand that they already have installed capacity, load factors and a price that is being charged, meaning that we can reach for values of revenues and proceed with the valuation accurately²¹.

Table 3 – Case-base vs. Pessimistic scenarios

Case-base scenario (75%)	Pessimistic-scenario (25%)
<ul style="list-style-type: none"> • % of prospects and pipelines would be effectively added, following the company plans⁷ for 2012-2015 (table 4) • From 2016 to 2018, the capacity addition would be equal to 50% of the one verified in the prior period 	<ul style="list-style-type: none"> • No capacity additions²² • Regions with ROIC < WACC (Spain, U.S and Brazil) would not have repowering of its facilities²³ and register a consequent diminishment of installed capacity
<ul style="list-style-type: none"> • CapEx = 100%, meaning that EDPR fully repowers its installed capacity, following company's plans 	<ul style="list-style-type: none"> • CapEx has to suffer an appropriate deduction for the previously stated regions²⁴ and for not having additions
<ul style="list-style-type: none"> • Spanish General Tax of 7% from 2013-2018 	<ul style="list-style-type: none"> • Increase of the General Tax from 7% to 14% in 2016
-	<ul style="list-style-type: none"> • Dollar vs. Euro devaluation equal to the greatest in history and default of all institutional partnerships

Both scenarios present different revenues, due to the evident difference in installed capacity, having this difference an impact in the price per share attained. For the pessimistic-scenario the CapEx is lower in the regions where there will be no repowering of existent facilities that attain their maturity.

As stated in the first page of our valuation, the introduction of the Spanish General Tax will reduce the company value in Spain (one of the most important business units of EDPR), and even more with the increase of 7% that we decided to include in the pessimistic-scenario (goal of eliminating the tariff deficit). The EV p/MW decreases from €1.75 to €1.28.

The Dollar-Euro exchange rate in the pessimistic-scenario is of 1.59, and along with the default of institutional partners and the other assumptions made, makes the EV/MW value of EDPR NA go from €0.87 to €0.42.

The goal of this valuation is to find the Enterprise Value per region, add them up, and then subtract the value of the market value of debt and non controlling interests, in order to reach the company's Equity Value and the

Table 4 - Breakdown installed capacity (MW)

	2010	2013E	2015F	2018F
Portugal	838	1039	1062	1079
Spain	2050	2310	2361	2400
RoE	551	1207	1945	2499
US	3224	3667	4036	4313
Brazil	14	84	202	291
Total Installed Capacity	6676	8307	9607	10582

Source: EDPR's reports, NOVA Equity Research

²¹ An alternative way to reach for a valuation for Italy would be through multiples

²² Except for Rest of Europe and U.S., as they are the regions that EDPR expects to invest more in terms of capacity additions, until 2015

²³ In the case-base scenario even the regions with ROIC < WACC will repower its facilities, as EDPR has been following that policy in the previous years and there is no information available that would suggest a change of its policies – Spain is EDPR's core region, a huge investment is being made in the U.S. and Brazil is on its early stage – see annex 8

²⁴ With no repowering → The CapEx for these regions is equal to 62.5% of the case-base scenario

price per share. We opted to calculate the price per share both for the case-base scenario and for the pessimistic one and then allocate the percentage each scenario has. The main reason for choosing this road is the fact that an investor can apply its own percentage for each scenario and easily reach the price he thinks would be fair, with our assumptions.

In addition, the company does not provide a breakdown of all accounts of its balance sheet per region, nevertheless we did not need all of them. For valuation purposes, it would be sufficient to have/reach values for the accounts that would give us the capital expenditure, the networking capital and the other assets and liabilities, as these are the ones that influence the operating cash flow calculated from the income statement.

- **Remuneration**

Table 5 - Regulatory Snapshot

Country	Remuneration Scheme
Portugal	Feed in tariff - Moratorium for new projects
France	Feed in tariff
Spain	Feed in tariff - Moratorium for new projects
Belgium	Pool + Green Certificates
Poland	Pool + Green Certificates
Romania	Pool + Green Certificates
Italy	PPA set in tender
U.K	Green certificates. New system under debate (offshore)
U.S	Pool + Green Certificates/PPA set in tender and tax incentives
Canada	Feed in tariff (Ontario)
Brazil	PPA set in tender

The electricity traded prices vary according to the remuneration scheme and to the country in which the transaction occurs. For that purpose it is necessary to understand that, although EDPR offers the same service in the countries it operates, the price and the way it collects its revenues is different. In what concerns the price forecasting, one alternative was to look at the future energy prices, however we considered it would be more accurate to look at the price trend in the past years (special attention to the prices practiced in 2013 until its 3rd quarter) and apply an average value or simply use the 3rd quarter price. The achieved price per region would be linked to inflation movements thereafter. This was a topic that could have raised doubts, but if we look into the price evolution along with the growing maturity of markets, it is reasonable to assume that prices are, on average, on the equilibrium point (especially in the regimes of Pool + Green Certificates), and will almost solely evolve with inflation.

- **Income Statement**

In order to reach the forecasted **revenue per region**, it is necessary to understand the actual remuneration scheme and the one that is most likely

Feed in tariff: Long-term contracts to renewable energy producers, who are awarded with a lower per kWh price (wind). It offers a cost-based compensation to renewable energy producers, providing price certainty that helps them finance renewable energy investments

Pool + Green certificates: An energy pool facilitates competition between generators and the calculation of the equilibrium price. All market participants are signatories to a pooling agreement that guides the operations of the pool.

A green certificate is a tradable commodity that proves that certain electricity is generated using renewable energy source. It is a way that governments have to reward green investors.

PPA: Contract between two parties. One generates electricity and the other buys it. It is the principal agreement that defines the revenue and credit quality of generating project and is thus a key instrument of project finance

to happen in the next years. For doing so, it is indispensable to proceed with an individual analysis, as was described in the section above.

Albeit there are different remuneration schemes, the formula used to calculate the expected revenue²⁵ was similar for each country.

The electricity output will vary according to what was previously explained: each year, each region will suffer an addition of installed capacity and the existing one will continue to produce. However, it was necessary to find a formula to forecast the output that related the installed capacity and average load factors. With the formula given below, we reached a ratio²⁶ for the 3 base years and then, applied that ratio (trend adjusted) in the place of the electricity we wanted to forecast.

The difference in each region comes obviously from the electricity output and the average selling price. The price evolution (chart 17) was already explained above. We acknowledge that the price of electricity output from renewable sources is dependent upon different factors. The **capacity factor** for instance²⁷ is extremely important in the price asked by the company and, as it has been stable throughout the years (28%-30%), we do not believe it will change in the forthcoming years (at least change in a negative way). The **cost of capital**²⁸ is also critical and, if EDPR pursues more projects regarding Solar PV, it will be able to decrease the company's overall cost of capital and possibly practice a more competitive price. The **marginal cost**²⁹ is also extremely important and decisive in the accomplishment of the final price.

Our valuation begins in 2013, which is the first year that will have all installed capacity linked to the RD 661/2007 regime (**Spain**), having all the MWs under the Transitory Regime transferred. There are two options that are pending on the publishing and approval of the legislation. For assets under the special regime³⁰, RD 2/2013 is mandatory and it refers to a feed-in-tariff of €81.247 per MW for 20 years³¹ linked to inflation.³² This was the pricing method that we assumed in our valuation. The alternative method is the RD 9/2013³³ and the return is yielded through the Spanish 10-year bond

Chart 17 – Average Price Evolution (€)



Source: EDPR's reports; NOVA Equity Research

²⁵ Average Revenue = $\frac{\text{Electricity output} \times \text{Average Selling Price} \times (1 + \text{Expected inflation})}{1000}$

²⁶ Ratio = $\frac{\text{Installed Capacity (MW)} \times \text{Average Load Factors \%} \times \text{Electricity Output (GW)}}{1000}$

²⁷ Or load factor is the average output power to peak power that the plant can deliver

²⁸ Source: Article on the *Greenrhinoenergy* website

²⁹ The amount of money needed to produce an extra Kwh

³⁰ Source: 9M2013 Results from EDP Renováveis

³¹ Started in 2013

³² Annual inflation, excluding energy products and food, and any impact of tax changes, minus "x" (50 bps)

³³ RD 2/2013 to lose its effect once full framework enters into force (reference date Jul-2013)

yields plus 3%, being the remuneration scheme based upon past and future returns of a standard asset.

In addition to this, from January 2013 onwards, the government introduced a 7% General Tax over electricity sales generated in Spain, meaning that part of the revenue EDPR collected is now transferred to the government (chart 18). Nevertheless, we will see in the next session that albeit this tax, Spain continues to be one of the strongest contributors to EDPR's profit with an EV/MW of €1.75.

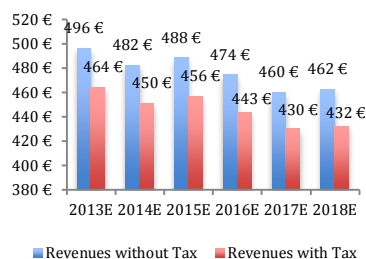
Portugal is also under a feed-in tariff and has 2 different regimes (chart 19) that depend on the origin of the energy³⁴: i) all the output resultant from EDPR's EBITDA is under the "old" regime³⁵ and suits wind farms accredited prior to February 2006. The initial duration (15 years) remuneration scheme is equal to a feed-in tariff indexed to CPI movements and the next 7 years correspond to the market price with a cap/floor mechanism (€74 p/MW - €98 p/MW); ii) ENEOP's capacity is paid under the "new" regime³⁶. The price is set in an international private auction, having been decided a €74 p/MW tariff for the first year, which is updated according to inflation. Posterior to an initial period, prices will be indexed to the market electricity prices and Green Certificates, if such a market exists.

It is relevant to say that we assumed that the installed capacity additions would maintain the same ratio between EBITDA and ENEOP's wind farms (chart 19), and that the price would then be equal to the one registered in the 3rd quarter of 2013 evolving in the following years according to expected CPI movements.

The remuneration scheme in **Romania** works under a market price plus Green Certificate system. For the existing assets³⁷, there is an incentive of 2 GC³⁸ p/MW until 2017 and after that date prior to reaching 15 years, the incentive turns into 1 GC p/MW. Half of those 2 GC received until the end of 2017 can only be sold from 2018 onwards. For new assets, there is a draft recommendation that consists of 1.5 GC until 2017 and 0.75 GC from 2018 forth until achieving 15 years.

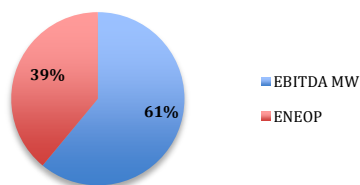
The remuneration scheme in **Poland**³⁹ is very similar to the one practiced in Romania, being the price for existing assets reached in market, bilateral contracts or sells to distributors at monitored prices (PLN 201.4⁴⁰ p/MW in

Chart 18: Effect of General Tax on Spanish Revenues (€)



Source: EDPR's Reports; NOVA Equity Research

Chart 19: Revenue Breakdown in Portugal



Source: EDPR's Reports; NOVA Equity Research

³⁴ Source: EDPR presentation September, 2013

³⁵ Before DL 33A/2005

³⁶ After DL33A/2005

³⁷ Source: EDPR presentation, September 2013

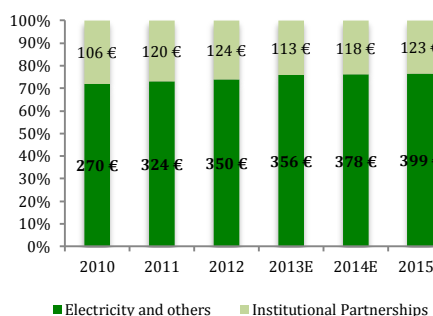
³⁸ GC are tradable on market under a cap and floor system (€28.9 - €58.8)

³⁹ Source: EDPR presentation, September 2013

⁴⁰ PLN to Euro Exchange rate of 4.27 in 2013

2013). In terms of Green Certificates, wind receives 1 GC p/MW but there is a replacement cost for suppliers that do not follow the GC plan, which was set at PLN 297 and is linked to inflation. The situation for new assets is still under study and not clear for further analysis.

Chart 20 – U.S Revenue Breakdown (€)



Source: EDPR's reports; NOVA Equity Research

Revenues from **U.S** come not only from direct electricity transactions, but also from tax incentives (chart 20). In terms of remuneration frameworks⁴¹ for the existing assets, it works under a market price plus green certificates system. The transactions can be set under PPAs, hedges or merchant prices. We observed the trend in the last 3 years and concluded that the share of revenue coming from PPA agreements have been increasing 3% YoY⁴². In line with that, we decided to maintain that increase until PPA agreements account for 84% of the total revenue (2016). This means that EDPR's exposure to market prices will continue to diminish throughout the forecasting years. In addition, we observed that the PPA and merchant prices did not alter much in the last 3 years⁴³, which reduces even more the volatility and uncertainty of revenues. Also, there is another very important component in the total revenue that comes from the income from institutional partnerships. We assumed that it would be equal to a percentage of the total output produced (1.5%), following the trend verified in the previous years.

In addition to the revenue collected from market prices, EDPR receives green certificates, also know as Renewable Energy Credits (REC), which are conditonal to each state's governance and decisions. It is one of the measures of the New Economic Stimulus Package⁴⁴, and consists on giving to renewable energy producers a lump sum cash rebate or, for larger organizations, a 5-year payback plan from their regional utility firm.

In what concerns the tax incentives and depending on the state and legislation, the most important incentive are the Production Tax Credits (PTCs), which are income tax credits directly linked to energy production (MW), and existent throughout the first 10 years of operations. The last extension made by the congress since its inception (1992), expires at the end of 2013 and it is vital that it gets extendend again.

In order to get the **EBITDA** per region, it was necessary to forecast the operating expenses. We calculated the percentage of operating costs per revenue for the period of 2010-2012, and then applied an arithmetic average for the forecasting period on the accounts that it is composed of, as the vast

⁴¹ Source: EDPR presentation, September 2013

⁴² Represented 75% of the total revenue in 2012

⁴³ Merchant prices were in the interval between USD 30.1 and 31.2

⁴⁴ American Recovery and Reinvestment Act of 2009, signed as a response of the Great Recession - ARRA

majority of the costs were variable and directly dependent on the output produced and revenue gathered (largely came from operations and maintenance activities, accounting for around 75%, and personnel costs). If one analyses EDPR's EBITDA margin, it is highly above its peers (as stated before), and this can be explained by the agreement⁴⁵ the company has with **Vestas**, having the advantage of choosing the wind turbine models that it wants and to prolong its 2-years Operating and Maintenance Agreement to 5 or 10 years. This close relationship to Vestas gives EDPR a competitive advantage that is reflected on the EBITDA margin.

Nevertheless, in order to forecast depreciations and amortizations we presumed that it would be a portion of the total installed capacity⁴⁶. The **tax rates** to apply to the EBIT were corporate tax rates⁴⁷.

- **Balance Sheet**

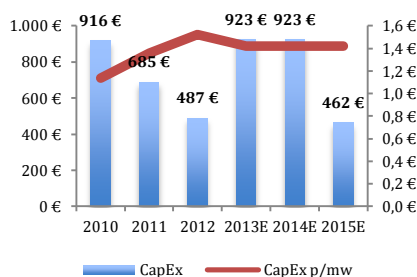
For valuation purposes, what matters is the value of the cash flow to be discounted to the WACC, which is equal to the previously explained operating cash flow minus the capital expenditure, changes in networking capital and changes in other assets and liabilities.

In order to reach the **CapEx** (chart 21), we had to forecast the value of two accounts in the balance sheet: PP&E and intangible assets and goodwill. We assumed that the repowering CapEx was already included in the CapEx value the company provided on its accounts, and as we presume the company will continue to operate in the PP&E's that reach its end life (case-base scenario), the basis to forecast future CapEx was already established.

Initially we decided that the forecasting key driver for the CapEx would be the historical average CapEx per megawatt, which would differ in each region⁴⁸. As stated before, the company has an average CapEx p/MW considerably lower than its peers (€1.2-€1.3) and expects to maintain it (our assumption in the valuation performed) or even decrease it, due to possible technological development.

Other important indicator for the final valuation is the networking capital. We had to forecast trade receivables⁴⁹, debtors and other assets from

Chart 21– CapEx p/MW



Source: EDPR's Reports; NOVA Equity Research

⁴⁵ Master Supply Agreement

⁴⁶ Assumed that the % of installed capacity to use was an average of the 3 base years

⁴⁷ Source: corporate tax rates presented by KPMG in its institutional website

⁴⁸ Each region CapEx p/MW corresponded to its historical average, except for the Rest of Europe region, as throughout the 3 business-case years showed enormous volatility. In order to solve this problem we opted to use in this region the overall forecasted MW p/region by the company for the period (CapEx = 3,2; GW additions = 2,3 => CapEx p/MW = 1,39)

⁴⁹ Days sale outstanding (Trade receivables/(Total revenue/365))

commercial activities⁵⁰, inventories⁵¹, current tax assets⁵², trade and other commercial payable⁵³, and current tax liabilities⁵⁴.

- **Weighted average cost of capital – WACC**

In order to correctly discount the cash flows from each region, different WACCs were calculated, which comprise both costs for equityholders (cost of equity), debtholders (cost of debt) and institutional partners in the U.S (cost of tax equity). The cash flows were calculated at current prices, in local currencies⁵⁵, being the discount rates equally nominal, current and in local currencies.

Beginning with the **cost of equity**, we used an approximation of the CAPM⁵⁶. Concerning the risk free rate, we divided our analysis per 2 regions: i) European countries, ii) Brazil and North America. For the latter, we simply considered the 10-year U.S government bond. For the European countries we opted to form an equally weighted basket composed by the countries awarded with triple A government 10-year bonds⁵⁷ (table 6). We assumed that all European countries would have the same risk free rate, which would then suffer an adjustment related to the specific country risk premium.

Then it was necessary to calculate the **beta** linked to the market premium. We opted to look at EDPR's previously stated comparable companies. It is necessary to find their unlevered betas, this is, the beta that does not take into account the market debt to equity ratio (how leveraged the company is). After reaching all unlevered betas of the peers, we average them and apply the debt to equity ratio correspondent to the company, in order to get the levered beta and apply it in the CAPM model.

Table 6

Risk Free

Basket with triple A European countries

Country	Bond 10Y
Norway	2.83 %
Sweden	2.31 %
Switzerland	0.95 %
Finland	1.94 %
Denmark	1.82 %
Germany	1.75 %
U.K	2.79 %
Average	2.1 %

Table 7 - Beta

Comparable Company	Country	Adj. Beta	Tax Rate	Mkt Cap (Equity)	Debt	D/(D+E)	D/E	Unlev.
EDPR	Spain	1.23	30%	3484	3874	0.53	1.11	0.69
Acciona	Spain	1.15	30%	3 212	8772	0.73	2.73	0.40
Longyuan	China	0.77	25%	62 288	57477	0.48	0.92	0.46
ENEL Green Power	Italy	1.41	31%	29 507	66539	0.69	2.26	0.56
NextEra	US	0.76	40%	29 337	27359	0.48	0.93	0.49
							Median	0.52
							1.11	
						Levered Beta		
						EDPR		0.92

⁵⁰ Days (Debtors and other assets from commercial activities/(suppliers and services/365))

⁵¹ % Installed capacity

⁵² % Revenues

⁵³ Days (Trade and other commercial payable/(suppliers and services + personnel costs and employee benefits + other operating costs)/365)

⁵⁴ % Revenues

⁵⁵ Except for Romania, as EDPR presented its operations in the region in Euros

⁵⁶ Capital Asset Pricing Model: Risk Free + ($\beta \times$ Market Premium) + ($\beta \times$ Country Risk Premium)

⁵⁷ Norway, Sweden, Switzerland, Finland, Denmark, Netherlands, Germany, U.K

We used a value of 6% for the market risk premium, as it is widely used and accepted among the most recognized corporate finance literature.

To finalize the calculation of the cost of equity per region we need to add a systematic country risk modulator, also known as lambda.

Table 8 - Systematic Country Risk modulator -

Country	Local Index	Beta vs S&P 500	Local stdev	S&P500 stdev	lambda
Spain	IBEX35	1.33	6.9%	4.6%	0.78
Portugal	PSI20	0.80	5.2%	4.6%	0.49
Belgium	BEL20	1.03	4.3%	4.6%	1.21
Poland	WIG20	0.73	6.3%	4.6%	0.28
Romania	BET	0.59	8.4%	4.6%	0.10
Italy	FTSE MIB	1.36	7.3%	4.6%	0.72
Brazil	IBOV	0.89	5.7%	4.6%	0.51

Table 9 - Country Risk Premium

Default spreads by country
Moody's

Country	CRP
Spain	2.00%
Portugal	3.25%
France	0.00%
Belgium	0.70%
Poland	1.00%
Romania	2.00%
Italy	1.75%
Brazil	1.75%

Its function is to cross the beta of the local indexes with the ones of a representative and recognized world market⁵⁸ with a volatility ratio between the market and local volatilities. Basically, it attempts to only account for the systematic component of the total country risk, which is the one that truly matters and should be quantified.

Afterwards, it is necessary to multiply this lambda to a country risk premium⁵⁹. Although we acknowledge that Damodaran makes strong assumptions, such as considering that all the country risk is systematic and that the sector's risk is perfectly reflected in the country risk, we believe that by adding the lambda factor, this will turn out to being a good proxy for countries that EDPR has operations in (table 9).

Table 10 - Cost of Equity - CAPM	Rest of Europe								
	Spain	Portugal	France	Belgium	Poland	Romania	Italy	U.S.	Brazil
Risk Free	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.62%	2.62%
Beta	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
MKT Premium	6%	6%	6%	6%	6%	6%	6%	6%	6%
Lambda	0.78	0.49	0.00	1.21	0.28	0.10	0.72	0.00	0.51
CRP	2.00%	3.25%	0.00%	0.70%	1.00%	2.00%	1.75%	0.00%	1.75%
E(R)	9.04%	9.08%	7.48%	8.33%	7.76%	7.68%	8.73%	8.04%	8.94%

As EDPR does not have a tradable bond, we had to calculate the **cost of debt**⁶⁰ through an alternative method. We opted to use the synthetic rating approach. The risk free rate is exactly the same as the one calculated for the cost of equity. We opted to look at the market yield from a 10-year bond issued by EDP⁶¹, so as to meet duration of cash flows. In order to find the rating of EDPR we had to calculate the interest coverage ratio (€2.08 in

⁵⁸ S&P500

⁵⁹ Source: Default spreads for each country Moody's – Damodaran research

⁶⁰ Cost of Debt = (Risk Free + Credit Default Spread + Spread between EDP and EDPR) × (1 - Default %) + (Risk Free + Credit Default Spread + Spread between EDP and EDPR) × Default % × Recovery Rate

⁶¹ EDP CDS EUR SR 10Y CORP – Term 20/03/2024

2012)⁶² and, assuming that the company has a low market capitalization, according to Damodaran that corresponds to a rating B and a credit default spread of 6.5%. This was necessary to reach the risk spread between EDP and EDPR, which we found to be 3%⁶³.

The probability of default comes in line with the fact that EDPR is not default-risk-free, and we acknowledged to be equal to 2.3%⁶⁴. A recovery rate of 60% was assumed, as it is considered to be a reasonable rate for companies with the rating of EDPR.

Table 11 - Cost of Debt - Synthetic rating approach

	Rest of Europe								
	Spain	Portugal	France	Belgium	Poland	Romania	Italy	U.S.	Brazil
Risk Free	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.62%	4.37%
Credit Risk Spread EDP	3.30%	3.30%	3.30%	3.30%	3.30%	3.30%	3.30%	3.30%	3.30%
Spread EDP and EDPR	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Probability of Default	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Recovery Rate	60%	60%	60%	60%	60%	60%	60%	60%	60%
Taxes	30%	25%	33%	34%	19%	16%	31%	37%	34%
E(R)	8.28%	8.28%	8.28%	8.28%	8.28%	8.28%	8.28%	8.84%	10.57%
E(R) after taxes	5.80%	6.21%	5.52%	5.46%	6.71%	6.95%	5.68%	5.55%	6.98%

In addition to the cost of equity and cost of debt, in the U.S there is another type of investor (Institutional partners) that discount their cash flows to a cost of tax equity, which is equal to 8.5% according the information gathered concerning renewable power project finances.

Table 12 - WACC	Rest of Europe								
	Spain	Portugal	France	Belgium	Poland	Romania	Italy	U.S ⁶⁵	Brazil
Cost of Equity	9.14%	9.17%	7.58%	8.43%	7.86%	7.78%	8.83%	8.14%	9.04%
Cost of Debt	8.28%	8.28%	8.28%	8.28%	8.28%	8.28%	8.28%	8.84%	1.,57%
Taxes	30%	25%	33%	34%	19%	16%	31%	37%	34%
Cost of Tax Equity	-	-	-	-	-	-	-	8,50%	-
D/(D/E)	53%	53%	53%	53%	53%	53%	53%	53%	53%
WACC	7.38%	7.61%	6.49%	6.87%	7.25%	7.34%	7.17%	7.27%	7.95%

7.12%

- **Equity value analysis**

Although the most important value is the overall equity value of the company and the price per share, it is extremely important to look at the regions separately and register the ones that are yielding the greatest returns and the ones that need a revamp of some scale.

⁶² Interest Expenses / EBIT

⁶³ EDP is a high market capitalization company with a rating of BB, giving it a spread of 3.50%

⁶⁴ According to Moody's Investors Service, Global Corporate Finance default rates from 1920-2010 in the Energy & Environment industry

⁶⁵ Debt (53%) is divided between financial debt and institutional partnerships

Table 13 - Growth

Spain	1.2%
Portugal	0.8%
France	1.3%
Belgium	1.5%
Poland	1.9%
Romania	3.6%
Italy	1.4%
U.S	2.4%
Brazil	5.8%

Source: Bloomberg

Table 14 - EV/MW

Region	EV	MW	EV/MW
Spain	4 041 €	2310	1.75 €
Portugal	1 175 €	1 039	1.13 €
RoE	2 764 €	1207	2.29 €
France	290 €	334	0.87 €
Belgium	106 €	71	1.49 €
Poland	504 €	250	2.02 €
Romania	1 726 €	482	3.58 €
Italy	122 €	70	1.75 €
U.S	3 188 €	3667	0.87 €
Brazil	159 €	291	0.55 €
Total	11 327 €	8514	1.36 €

Table 15 - Equity Value

Enterprise Value	11 327 €
- Market Value of Debt	4 012 €
- Tax Equity Investors	1 567 €
- Non-controlling interests	370 €
+ Cash and cash equivalents	261 €
Equity Value	5 739 €
# shares	872
Target Price	6.58 €

In order to reach the price per share, we added the per region equity values (the growth of the valuation is equal to estimated inflations⁶⁶ – table 13) and then subtracted the overall market value of debt⁶⁷, liabilities correspondent to the tax equity investors, non-controlling interests, and then added up cash and cash equivalents. This corresponds to the equity value, which is divided by the number of outstanding shares in order to get the price per share.

In what concerns the enterprise value, we can make a comparative analysis per region through the EV/MW multiple, this is, the amount of enterprise value per megawatt of installed capacity (table 14 – case-base scenario).

Focusing strictly on this multiple, it seems that Romania, Poland and Spain are the regions with the best results per megawatt, however one should also take into account other factors such as the development stage of the renewable energy sector in the country and even the maturity of EDPR's operations in the region.

According to the company's strategy, its presence in matured markets will start losing weight and importance in comparison to emerging markets. Between 2012 and 2015 the business plan for EDPR highly focuses on growing its presence in emerging markets in Europe and consolidating its presence in the North American market⁶⁸.

Relatively to the market value of debt, EDPR has an average debt maturity of 6 years and an estimated cost of debt of 8.5%. In order to reach it, we calculated the market value of the principal – discounting the financial debt to the cost of debt – and the market value of the coupons through the discount of the interest expense to the cost of debt also. We now have everything to reach the Equity Value and the Target Price (table 15).

- **Market multiples analysis**

It is important to perform a market multiples comparison to understand where EDPR stands in relation to its peers. We opted to look at 5 key ratios⁶⁹: EV/EBITDA, EV/EBIT, P/E, P/B tangible and interest coverage ratio. While the first 2 are intuitive and give us a taste of the weight the operational activity has on the enterprise value of the company (capital structure neutral), the other 3 provide us other type of information.

⁶⁶ Average of the Bloomberg's forecasted inflation for the period between 2013-2015

⁶⁷ Financial debt as principal and interest expenses as coupon payments

⁶⁸ For valuation purposes we opted to disregard the prospects the company has on emerging markets, that accounted for 12% of the forecasted capital expenditure

⁶⁹ Source: Bloomberg data

Table 16 - Comparable Ratios 2012

Comparables	EV/EBITDA	EV/EBIT	P/E	P/B tangible	Int. ratio
Iberdrola	7.25	13.59	9.14	1.77	2.57
Acciona	7.48	15.52	17.03	0.95	1.31
Longyuan	9.78	15.77	12.44	1.64	-
ENEL Green Power	7.96	13.74	17.56	1.43	3.94
NextEra	11.17	17.21	16.00	1.85	3.16
EDPR	7.81	16.52	28.53	0.85	1.78

Source: Bloomberg; NOVA Equity Research

In terms of EV/EBITDA and EV/EBIT EDP Renováveis is on the average comparing to its peers, what does not happen when analysing the other multiples that were selected. EDPR is clearly the company with the highest price to earnings ratio, which intuitively could be perceived as a bad signal, but if we look attentively to its strategy it is not. The company expects a strong growth of its cash flows and revenues in the near future, meaning that investors are already paying for that. In our opinion, as EDPR only distributed dividends for the first time in 2013, this high ratio means that investors expect an increase of earnings in the forthcoming trimesters, or else the price will have to fall.

EDPR is the company among its peers with the lowest P/B tangible ratio, which is an excellent indicator, meaning that it is the company that, theoretically, would leave its investors with the lowest losses if go bankrupt. EDPR is the company with most liquid book assets. Although EDPR presents the second lowest interest coverage ratio when comparing to the industry companies, it does not seem to be an aspect to worry as it is above 1⁷⁰ and cash flows are strong enough to pay its interest expenses.

Nevertheless, this **target price** corresponds to the base-case scenario and has to suffer the appropriate adjustment from the pessimistic-scenario, which accounts for 25% of the total valuation (annex 5). The premises of this later scenario were already presented and justified. The main differences come from Spain (increase of General Tax and no repowering), Rest of Europe (early stage operations with need of new capacity even after 2015), and from the U.S (no repowering, greatest Dollar-Euro devaluation and no income from institutional partnerships).

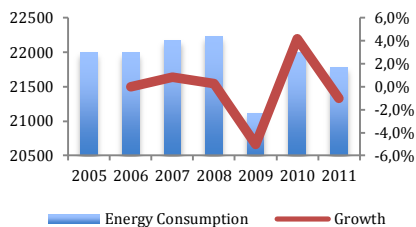
Table 17 - Target Price	Target Price	Probability
Base-case scenario	6.58 €	75%
Pessimistic-case scenario	1.43 €	25%
Overall Target Price	5.29 €	

⁷⁰ Value that the corporate finance literature uses as benchmark for the interest coverage ratio. A company should have a ratio above it and, ideally, over 1.5

Markets and regulation

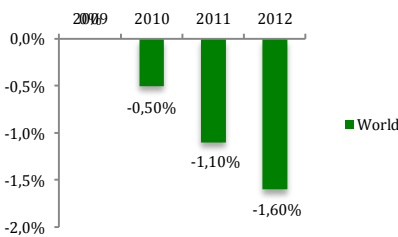
Primary energy: Energy extracted from nature that has not been altered, transformed or used before. It can correspond to renewable – fossil fuels and mineral fuels; or non-renewable sources – solar, wind, biomass, hydro, etc.

Chart 22: Electric power consumption U.S; Brazil and E.U (KW p/capita)



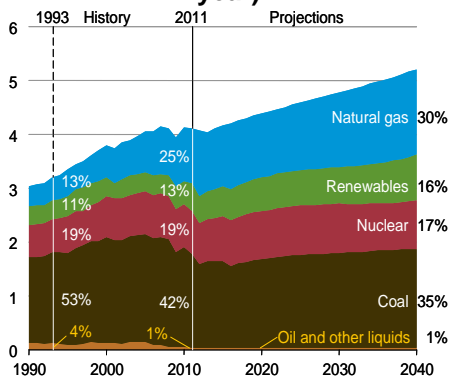
Source: World Bank; NOVA Equity Research

Chart 23: World's Intensity Ratio growth



Source: EnerData; NOVA Equity Research

Chart 24: Electricity generation by fuel (trillion kilowatt-hours per year)



Source: U.S. Energy Information Administration; NOVA Equity Research

According to Enerdata⁷¹, the growth rhythm of primary energy production has suffered a drop from the last 10-years average 2.4% to 2.1%, in 2012. 35% of the primary energy continued to be produced in the BRICs countries.

Abait the world's energy consumption has grown in 2012, its pace has diminished and trend altered (chart 22). It has registered an average growth per year of 2.3% in the last decade⁷², contrasting to the slightly lower increase of 1.4% in 2012. In addition, China continues to be the region with the highest growth rate (4%), although it had dropped 50% comparatively to the previous year. The main driver of consumption growth in 2012 were the BRIC countries, especially India and Brazil⁷³.

Another interesting indicator is the energy intensity of GDP at constant purchasing power parities⁷⁴, as it analysis the quantity of energy needed to generate one unit of GDP. This ratio has suffered a decrease of 1.6% in 2012, which is a higher decrease than the average of 1.2% registered since the beginning of the 21st century. Although North America's energy intensity has dropped more than 4% in 2012, it remains above the value in Europe, as it is still the region with the smallest energy intensity ratio (chart 23).

According to the International Energy Agency, the production of renewable energy is expected to increase at an average rate of 1.7% per year until 2040⁷⁵, whereas the growth of the wind-powered based electricity is expected to raise 2.6% per year for the same period, illustrating the greatest total growth in renewable production (chart 24).

By its turn, the Global Wind Energy Council forecasts that between 2013-2017 there will be a CAGR of 7.15% regarding wind installed capacity. Its absolute value in GW is expected to grow from 282,6 to 536,1, which represents a 90% increase (chart 25). Looking at the additions registered during 2012, nearly 60% of it happened in the 2 greatest markets – U.S and China. It is, however, very interesting that out of the total additions (44,8 GW), approximately 85% occurred in the top 10 countries, which gives us a sense of how centralized the wind production is.

As stated by the Secretary General of the GWEC, "while China paused for breath, both the US and European markets had exceptionally strong years;

⁷¹ "EnerData is a company that provides energy data, forecasts, market reports, research, news, consulting and training on the global energy industry"

⁷² Source: EnerData

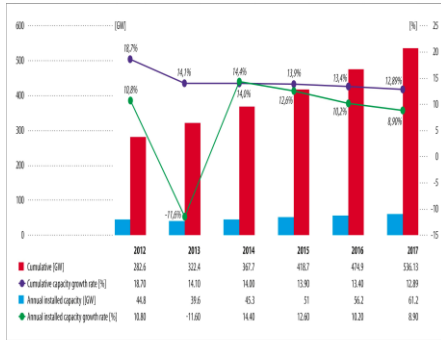
⁷³ It is important to take into account that weather conditions directly influence energy consumption and that harsher winters are positively correlated with energy consumption for instance.

⁷⁴ Total energy consumption of country X / GDP

⁷⁵ Annual Energy Outlook 2013 with Projection to 2040, from U.S. Energy Information Administration

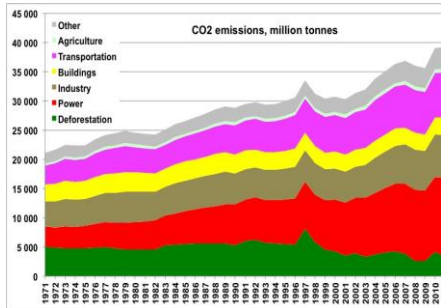
Chart 25: Wind installed capacity

Market Forecast 2013-2017



Source: GWEC

Chart 26: CO2 emission evolution



Source: BP Statistical Review 2013

Asia still led global markets, but with North America a close second, and Europe not far behind; European markets, led by Germany and the UK, with surprising contributions from ‘emerging markets’ in Sweden, Romania, Italy and Poland, accounted for 12.4 GW last year, a new record . However, on-going sovereign debt crises mean that the outlook for the 2013 market is uncertain, although Europe’s framework legislation and its 2020 targets ensure a degree of stability”⁷⁶.

The increasing importance of green energy in the overall energy production and consumption is consequence of several factors, such as the need governments have to reduce CO2 emissions, increasing fossil fuel prices and more developed technology. In line with this, governments are adopting schemes and incentives to encourage renewable energy production.

Each region puts in practice several action plans in order to see the emission of CO2 reduced (chart 26) and to guarantee increase usage of renewable energy. For that purpose, in 2002, the 15 Member States of the European Union agreed to jointly fulfill the Kyoto Protocol’s compliance mechanism (reduce the GHG emission in the 2008-2012 period to 8% below 1990 levels, at a first stage). Under the European Trading Scheme, companies can trade permits with each other and increase its reduction target for instance. Looking at the countries in which EDPR operates in, Spain had a score⁷⁷ of -9%, Italy 1.7%, France 8.6%, UK 11%, Portugal 12.8%, Poland 29.2% and Romania 55.8%. So, the outcome is largely positive. Even the U.S. that has not embraced the protocol has met its goals. In 2012, the U.S. became the first major industrialized country in the world to meet the United Nation’s original Protocol 2012 target for CO2 reductions⁷⁸.

In terms of electricity, the Spanish government is taking some actions in order to comply with the Kyoto target, such as⁷⁹: provision of training programmes for installers (NSQPF⁸⁰); Certification Programmes for RES intallations; RD&D Policies; and Building obligations.

We believe that the targets proposed in the energy conferences⁸¹ will be met, due to the fact that the technology required for producing renewable energy is less expensive and countries are aware of the penalizations they will suffer if they do not meet the targets. Even Spain, which is the country with the most complex situation (explained in the section below) has about 16%⁸²

⁷⁶ Source: Global Wind Energy Council: Solid Growth in 2012

⁷⁷ If a country has a target to reduce its emissions by 5% and increases by 5%, then its score will be of -10% for instance

⁷⁸ Source: EIA Data

⁷⁹ According to Res-legal policies

⁸⁰ National System of qualification and professional formation

⁸¹ E.U. Renewable Energy committee for instance

⁸² Source: Association of Renewable Energy Producers

of its primary energy from renewable sources, being relatively close from the target of 20% for 2020. The key driver for success are, in our opinion, not the introduction of the right policies per se, but the ability to implement a credible long-term mechanism that will accompany them and help the transition to a more sustainable and lower polluting system consumer.

- **Spain**

At the end of 2012, Spain was the 4th country with the higher wind power capacity, accounting for 8.1% of the total installed capacity in the world and presenting a growth of 7.8% relatively to 2011 and an average growth in the last 5 years of 7%⁸³ (chart 27).

Nowadays **Spain** is one of EDPR's core market, with 28.9% of the total forecasted installed capacity for 2013, although that trend is expected to change in the next years (22.7% in 2018) (chart 28).

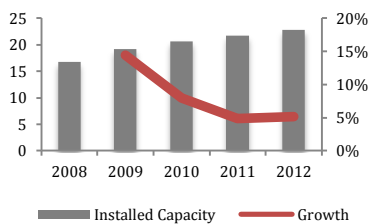
The renewable energy sector in Spain was built upon a structural error – the government heavily subsidized the sector through high feed-in tariffs to producers, disregarding the ability to recover that cost incurred. Supply costs were climbing, and consumer rates remained low, meaning that the true production cost was not being paid by the consumers.

This generated a massive issue for Spain on the electricity segment – the tariff deficit. In simple terms, it refers to the difference between what costs to generate energy and what customers effectively pay for it. “The debt has grown for a decade because regulators cap rates (tariffs), at levels not high enough to reimburse services such as power transmission and generating from more expensive renewable sources”⁸⁴.

Portugal also has a tariff deficit, however Troika and the Portuguese government have reached an agreement of how to reform the sector in 2011 and expect the tariff deficit to fully disappear by 2020. “In Spain, where the latest batch of reforms was released in July, no concrete target deadline to eliminate TD's has been publicly announced”⁸⁵.

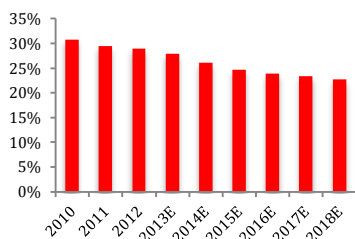
The difference between the Portuguese and Spanish cases⁸⁶, is that in the **later**, the regulator is not autonomous (linked to the government), which may have been one of the causes of the increase of unpredictability of the market, as structural expenses were not properly managed (the final TD of €5.6B for 2012 is much higher than the target of €1.2B). The total tariff deficit at the end of 2012 in Spain accounted for approximately 83% of the

Chart 27: Installed Capacity in Spain (GW)



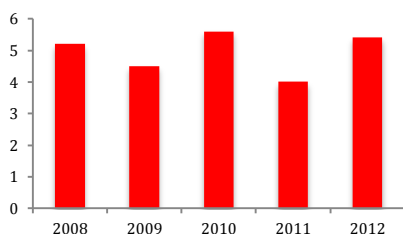
Source: Wind Energy Reports

Chart 28: Installed Capacity (% EDPR) in Spain



Source: EDPR' Reports; NOVA Equity Research

Chart 29: Spanish Annual Tariff Deficit (€B)



Source: Departamento de Fundamentos de Análisis Económico; NOVA Equity Research

⁸³ Source: Global Wind Statistics 2012, from the Global Wind Energy Council

⁸⁴ Source: Article from Bloomberg July 2013: Spain Power Reforms to Cost Companies 2.7 Billion Euros

⁸⁵ Source: Reuters: PT-Fitch: Portuguese Tariff Deficit Plan more credible than Spain's

⁸⁶ Source: Article on Fitch Ratings, September 2013.

electricity system total revenues (chart 29). Spain created a securitized fund⁸⁷ in order to hedge the risk of this tariff deficit, in which it has outstanding bonds valued at more than €20B. Due to the uncertainty of the impact of the measures recently created by the Spanish regulators and its effective approval, and to the negative ratings the facilities in Spain have been awarded by the major rating agencies, Fitch believes that Spain will continue to generate tariff deficits and that the measures to be applied are not sufficient to reverse the situation. EDPR has opted to only allocate nearly 5% of its installed capacity additions to this region, which is a fairly low percentage when one looks at the overall weight of Spanish operations.

Some measures such as the inclusion of a General Tax over electricity revenues of 7% and a drastic cut in subsidies will be applied, but its real impact and effectiveness is difficult to assess. It could all be easily avoided if costs were more closely controlled; subsidies were not exaggerated and actions were taken in the moment this structural error was detected.

- **Portugal**

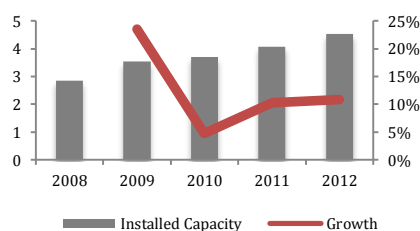
At the end of 2012, Portugal was the 10th country with the highest wind power installed capacity, with a representation of 1.6% of the total installed capacity (chart 30). The fact is that Portugal has proven to be a market with an exceptional growth of the wind-based business, having registered a 10.8% jump in installed capacity comparatively to 2011 and an average last 5 years growth rate of 16.3%.

In line with these, Portugal presents itself as one very important market for EDPR, having 12.5% of the total installed capacity (2013) and this weight will not suffer alterations according to our predictions (chart 31).

China Three Gorges Coporation aquired on December 2012 a 49% equity shareholding and 25% of the outstanding shareholder loans of wind farms in Portugal for a value of €359 million, being the transaction scope of 615 MW⁸⁸. The implied transaction value (EV/MW), was of €1.6, above our valuation of EDPR's business (€1.36⁸⁹), meaning that the company, did a good business.

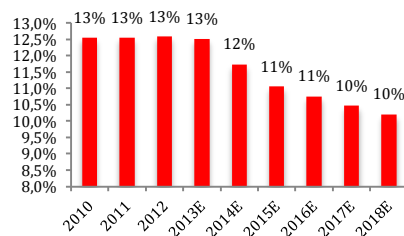
The tariff deficit is an extremely important and decisive factor in this market as explained in the section Spain, however we believe that the plan established between the government and Troika will be effective in reducing the tariff deficit, having as downside for the sector the lower support from

Chart 30: Installed Capacity in Portugal (GW)



Source: Wind Energy Reports

Chart 31: Installed Capacity (%EDPR) in Portugal



Source: EDPR' Reports; NOVA Equity Research

⁸⁷ FADE – Fondo de Totalización del Déficit del Sistema Eléctrico, FTA

⁸⁸ Source: 9M13 EDPR presentation

⁸⁹ EV/MW multiple of €1.13 if we analyze Portuguese operations and not the whole company (case-base scenario)

the government and the greater vulnerability to market fluctuations. Nevertheless, we consider that it is highly unlikely that the already installed capacity will suffer from additional government measures/adjustments, since the government acknowledges the importance of the renewable sector for Portugal.

- **Rest of Europe**

EDPR is present in several European countries, having more units and installed capacity in France and Romania at this point, being forecasted that Poland will surpass France in the top 2 by 2018.

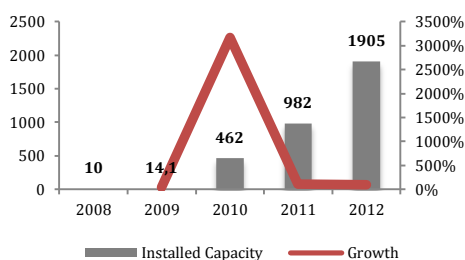
Romania is the 19th country with the highest windpower installed capacity in the world, but is growing at an astonishing pace. It suffered an almost 100% increase of installed capacity from 2011 to 2012, and experienced an average growth of 207% in the last 5 years (chart 32). It is the region in the world with the highest wind evolution rate and, in line with this, is the 2nd European country with the highest forecasted additions until 2015. The presence of EDPR in Romania will continue to grow, following the country's trend, and reach a predicted 8% of the overall installed capacity by 2018 (chart 33).

It is easily perceived that Romania is strongly betting on wind energy and that it is an important driver of the country's GDP, due to the fact that it has excellent conditions for using wind power, with an average wind speed in Dobrogea (Southeastern region) of 7.2 m/s and a very low population density, according to the president of AREE⁹⁰. Companies like EDPR are attentive to this situation and starting to enjoy the benefits.

Romania has defined its own target of 24% energy from renewable sources of final gross energy consumption by 2020, meaning that there is a sustainable long-term expectation of dependency of the country's economy and households on renewable energy, making this sector interesting to capital investors. The direct and indirect foreign portfolio investment on this sector supports this fact, according to the "Wind Energy and Other Renewable Energy Sources in Romania" report.. Albeit the legal uncertainty regarding the green certificates and incentives given by the government, Romania poses itself as one of the greatest countries in the world in terms of wind potential, according to the same source.

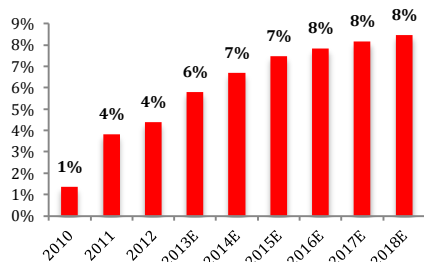
Solar power plants are also very important for Romania and generous Green Certificates are being given to old and new assets, being EDPR developing efforts to increase its presence in the sector and country.

Chart 32: Installed capacity in Romania (MW)



Source: Wind Energy Report; NOVA Equity Research

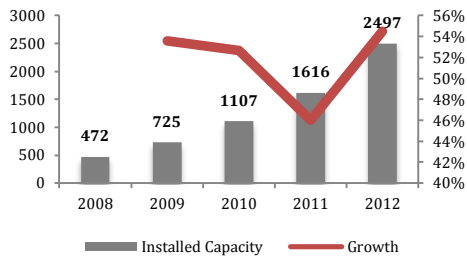
Chart 33: Installed capacity (%EDPR) in Romania



Source: EDPR's Reports; NOVA Equity Research

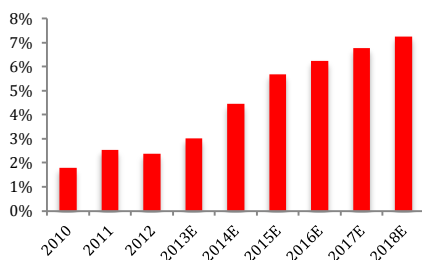
⁹⁰ Source: Romanian Wind Energy Association

Chart 34: Installed capacity in Poland (MW)



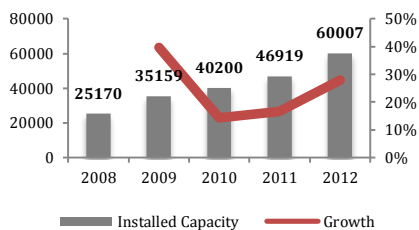
Source: Wind Energy Report; NOVA Equity Research

Chart 35: Installed capacity (%EDPR) in Poland



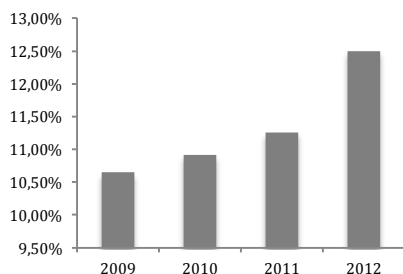
Source: EDPR's Reports; NOVA Equity Research

Chart 36: Installed capacity in the U.S (MW)



Source: Wind Energy Report; NOVA Equity Research

Chart 37: Wind % from Renewable energy production



Source: U.S. Energy Information Administration; NOVA Equity Research

Poland, by its turn, ended 2012 in the 16th position of the windpower capacity ranking, with approximately 2.5GW of installed capacity and a strong growth of 54.5% from 2011 to 2012 (chart 34). It is a country pretty similar to Romania when looking at its wind potential, however EDPR's presence in the country has stagnated in the last years. A situation that will completely change according to the forecasts provided by the company. Around 23% of the additions of installed capacity that will occur in 2014-2015 are due to Poland (chart 35).

One of the greatest barriers for the development of the sector and increase of investment is, again, the lack of a transparent long term regulation scheme, according to the director of the Polish Wind Energy Association.

• **U.S**

The United States is the 2nd country with the highest installed windpower capacity, falling only below China. At the end of 2012 it had 60 GW of installed capacity, with a growth of 27.9% relatively to the last year and a 5-year average growth of 29% (chart 36).

Renewable energy in the U.S corresponds to nearly 12.5% of the total renewable energy production in American soil (chart 37). It is a very rich and prosperous area for wind production, being able to accompany the increase of demand at competitive prices. The ability to provide renewable energy at reasonable prices, along with the enormous technological development that the sector has been suffering for the past year, leads energy experts in the U.S to predict that renewable energy is the energy source of the future and will gain a considerable market share in relation to fossil fuels in the upcoming years.

It has the potential to install around 11 thousand GW of onshore wind power and 4 thousand GW of offshore wind power⁹¹, which proves to exist a huge gap between the already installed capacity (60GW) and its potential.

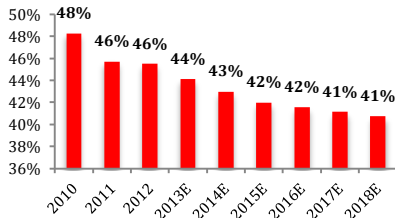
Renewable energy is such an important matter for the U.S that all, except 4 states have in place incentives to encourage its development. In 2012, wind energy turned into the greatest source of U.S. electricity generation capacity additions for the first time, accounting for 43% of all new electric additions and for an investment of approximately \$25 billion⁹². The wind energy sector provides job for roughly 80 thousand Americans in its entire supply chain.

One of the main distinctive features of the wind power industry in the U.S. is the fact that it is not centralized (contrarily to what happens in other regions), and each region has the resources to fully cover its demand from renewable

⁹¹ Sources and Uses – U.S. Energy Information Administration

⁹² Source: Article on the American energy government website

Chart 38: Installed capacity (%EDPR) in the U.S



Source: EDPR's Reports; NOVA Equity Research

energy, which reduces notably risks and expenses related to transmission development.

EDPR perceived this huge potential and since its inception has been developing contacts and business in the U.S. In fact, it is the region in which the company operates that will be subject to the greatest forecasted installed capacity additions in 2014 and 2015 (28% of total additions). The company has an installed capacity of more or less 3.8 GW in the U.S and expects to enlarge that capacity to 4.3 GW by 2018. The relative weight of U.S operations will, however diminish, due to the great investment and bet on the emerging markets in Europe (chart 38).

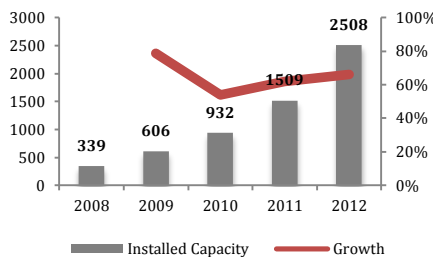
The Renewable Energy Production Tax Credit is extremely important for wind energy producers, mainly because it results in a reduction of 2-3 cents per kilowatt/hour in the first 10 years of production, making its production more cost-efficient, especially when comparing to oil or coal. There is still great instability regarding the extension of the PTC (expires in the end of 2013), being the decision postponed in Congressional deadlock over the fiscal cliff. According to the AWEA's CEO "if the PTC is not extended this year (2014), that's a great concern because we need to have it extended as soon as possible".

Alternatively and introduced by ARRA, the government provides Investment Tax Credit (ITC), which basically is a monetized tax incentive over cash grants, and can amount to 30% of the investment made. Another tax incentive that energy producers in the U.S receive is the Modified Accelerated Cost Recovery System (MACRs), which gives the possibility to fiscally depreciate wind farms (95%) through its initial 5 years of operations, in order for the company to recover its investment quickly through depreciation deductions. These information is provided in the 9M13 presentation of EDPR.

Due to the fact that EDPR has not been able to fully enjoy the tax benefits, it has been increasingly signing contracts with third parties, so that those benefits can be enjoyed. For that transfer of benefits, the company demands a financial compensation from the counterparty. These third parties are the Tax Equity Investors, which pay EDPR with upfront cash a value near to the net present value of future tax benefits and, apart from the tax benefits that they receive, also collect a minority stake of the project's operating cash flows until a minimum internal rate of return of 10 years is reached.

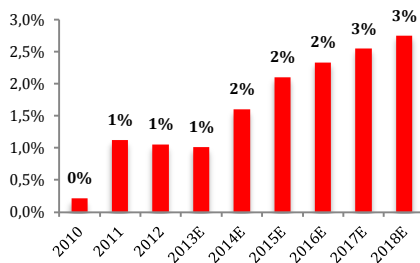
- **Brazil**

Chart 39: Installed capacity in Brazil (MW)



Source: Wind Energy Report; NOVA Equity Research

Chart 40: Installed capacity (%EDPR) in Brazil



Source: EDPR's Reports; NOVA Equity Research

Increasing investment in Romania, Poland, U.S and prospects on regions with wind potential like Mexico and North Africa

Although renewable energy production through wind is more competitive, the existence of government incentives is crucial

Brazil is starting to become an important player in the wind energy power sector, with an average growth of 59% in the past 5 years and a 66.2% increase in installed capacity relatively to 2011. It is impressive to notice that in 2006 Brazil only had 237 MW of windpower installed capacity, whereas it now has over 2.5 GW, representing an astonishing evolvement (chart 39).

Perceiving the tremendous potential of the wind power development in Brazil, EDPR has positioned itself in there and predicts to allocate 10% of its investments in new capacity, increasing its relative presence from 1% to almost 3% by 2018 (chart 40).

EDPR's operating assets in Brazil are sold through long-term PPAs agreements (20 years) and indexed to inflation movements. These PPAs were created by PROINFA (Program of incentive to the electric energy alternative sources) and have been a driver for the development of the sector in the country. For new assets, the PPAs will be reached through competitive tenders, held by ANEEL (National agency of electric energy). A prove of the competitiveness and huge potential of wind power generated energy is the fact that the price reached in the last auctions was lower than the ones reached for natural gas for instance.

Business Risks

This section is destined to better understanding the type of (main) risks EDPR's business is subject to. Some of them are relative to the industry as a whole, whereas others are relative to the countries were the company operates in.

- **Wind availability**

It is obvious that for the business of EDPR to subsist, it is necessary that its main resource continues to exist, and does so in accordance to the company's forecasts. The wind availability and potential is one of the key factors in the investment decisions of the company, as described in the previous sections.

- **Regulation/Legislation**

The renewable energy production is highly dependent upon incentives and benefits given by governments, in order to make the business attractive to producers. So, this appears as a massive issue, especially when these incentives are constantly changing from year to year and do not present the necessary stability.

EDPR's 2 core markets – U.S and Spain – are the ones with the greatest uncertainties regarding remuneration frameworks and tax incentives. With the

The General Tax over electricity sales (7%) and the uncertainty regarding the extension of the PTC in the U.S are some of the main concerns of EDPR

addition of the 7% general tax over electricity sales in Spain, revenues are expected to decrease, and there is no guarantee that this tax will not suffer further aggravations in the future. In addition, the legislation for new assets is yet to be published and companies do not know what to expect, especially due to the enormous gap in the tariff deficit that has to be filled somehow. We value the operations in Spain to be worth €1.75 (EV/MW) with the inclusion the tax of 7% over revenues, €1.86 with no tax and €1.64 if that tax would double to 14%, ceteris paribus. EDPR's price target fluctuates between €5.08 and €5.51 with these alterations.

Regarding the U.S, the PTC was not yet renewed for 2014, and it is absolutely essential that it is. Also, tax equity investors are a huge part of EDPR's business in that region, but will be discussed later on.

- **Substitute products**

Any business that has electricity as its final output, regardless of its source

We assume that substitute products for EDPR's product are all that offer the same output (electricity), being irrelevant if they come from renewable or non-renewable sources. Although wind-based power energy still needs government incentives and subsidies to be competitive, the fact is that it has become more efficient and cheap in the last years, due to the technological development, and diminished the lag between the more common renewable sources of energy: coal and natural gas⁹³.

In what concerns non-renewable sources, namely the fossil fuels, we believe that they will continue to be a strong and relevant competitor, however its impact will diminish in the future, mainly due to the fact that countries will need to further reduce CO2 emissions and will have to opt to consume more renewable energy.

- **Exchange Rates**

The company funds its operations with operating cash flows currencies

EDPR operates in countries that have currencies other than Euro. It deals with Zloty (Poland), Sterling Pound (U.K), US Dollar (U.S) and Real (Brazil). So, the company has to be well hedged against exchange rate risk. It does so by using foreign exchange derivatives, foreign exchange debt and/or other hedging structures with symmetrical exposure features to those of the hedged asset/item. In order to minimize or mitigate this exchange rate risk, EDPR opts to fund its projects in the currency of the operating cash flows generated by the project.

⁹³ According to Bloomberg New Energy Finance "The cost of electricity generated from wind is now at record lows: several projects in high resource areas display a levelised cost of energy – excluding the impact of subsidies but after including the cost of capital and maintenance – below EUR 50/MWh (\$68/MWh). This compares to current estimated average costs of \$67 per MWh for coal-fired power and \$56 per MWh for gas-fired power."

EDPR is well hedged against exchange rate fluctuations, with CIRS contracts, with extra attention to USD

Institutional Partners' financial stability and liquidity is indispensable in EDPR's business and valuation

Target to reduce the leverage of the company by implementing an asset rotation strategy

Currently, its main exposure is to USD (main reason why we opted to devalue Euro against USD in our pessimistic scenario) and so, the company entered in a currency interest rate swap (CIRS) in USD/EUR with EDP Branch and also uses financial debt expressed in USD. Nevertheless, the company is very attentive to the other currencies that yield its operating cash flows, having entered in other CIRS arrangements.

- **Tax Equity Investors**

A high percentage of the agreements made in the U.S are financed by tax equity investors and they pose a counterparty risk. EDPR has to be very selective when approving the counterparties it chooses to do business with, as Institutional Partnerships represent around 30% of the total financing debt the group has. In a worse case scenario where institutional investors do not pay, the company value would decrease from €5.29 to €4.08.

- **Asset rotation strategy**

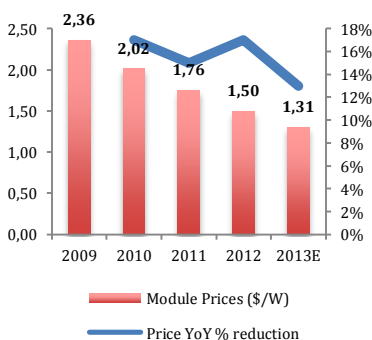
EDPR is following an asset rotation strategy, meaning that it chooses to sell stakes of projects that are already in their mature phase, valuing the project's future cash flow and re-invest in the expansion and improvement of quality of adding-value projects, in line with the EDPR's self-funding growth strategy. Nevertheless, there is a risk that EDPR is not able to keep its annual average €300 million asset rotation value, and finds itself without the financing necessary to carry on with its operating needs.

Opportunities

- **Solar Photovoltaic system**

The Solar PV is starting to demonstrate an extremely interesting cost-competitiveness (chart 42), as its investment cost (CapEx/MW) has decreased 40% from 2010 to 2012⁹⁴. It is, in fact, the renewable energy source with the greatest cost cut. It is an easier process overall when compared to wind-based power and also less time consuming in terms of facilities' development and construction. This means that a company can start recovering its initial investments sooner than the average time for wind-power energy. In addition, it is easier to manage demand peaks⁹⁵ and less likely that they occur, as it responds to daily demand evolution, meaning it is not necessary a great volume of backup. Another advantage, especially for EDPR that produces wind energy, is the fact that the skills necessary to develop solar energy are very similar to the ones for wind, meaning that a company

Chart 42: Modular Price evolution



Source: Nomura, HSBC, Morgan Stanley, Rolf, JP Morgan, EY Analysis, NOVA Equity Research

⁹⁴ Source: EDPR Roadshow, December 2012

⁹⁵ September 2012 report from European Photovoltaic Industry Association

can have only one team that performs both tasks.

- **New wind onshore**

It is extremely important for a company operating in the renewable energy sector to be first movers, in order to ride on the benefits arising from it. In terms of potential, EDPR has identified 1 country with world class potential - Mexico - and 3 with very high potential – Turkey, Peru, Marocco. Following that order, EDPR is approaching Mexican local developers (the proximity to the U.S market is another decisive factor for EDPR's interests). Regarding the countries perceived as having high potential, EDPR is already participating in the upcoming tender pre-qualification phase in Marocco; engaged with local players in Turkey; whereas it is still analysing interesting transactions in Peru.

- **Wind offshore**

The previously explained “early mover advantage” refers to regions to be explored by products that have already been examined and proved to being successful in several regions. In line with this, the wind offshore market is experiencing the opposite: companies are afraid of taking the early entrant risk, as there is yet enough technology. Nevertheless, EDPR expects to fully diversify the projects under development in the U.K (2.4GW and not included in our valuation) and continue to attentively identifying and analysing stake swaps of other offshore projects (U.K, Germany, France and Poland).

Recommendation

Although there are several risks as presented in the sections below, we believe that EDPR is a company to invest and to keep in your portfolio, as it just now starting to yield the dividends from its growth strategy. In fact, we incorporate some of the most impacting risks in our pessimistic-case scenario and even with this scenario included in our total valuation (25%), the price per share is clearly above the one the market is valuing at the moment.

EDPR should continue to explore matured markets in regions unexplored and in their early stage with potential, so they can enjoy the early mover advantages, as they have been cleverly doing. It is the x-factor for success according to the company and we agree: the ability to anticipate market trends and already be in the region when it becomes fashion.

The asset rotation strategy will contribute to diminish the company's leverage, and give the liquidity necessary for EDPR to explore the projects in which it believes that can collect the largest and sustainable operational cash flows.

Putting all these together, we strongly believe that our valuation incorporates the most impacting variations and the price reached is to be trusted.

Annex 1 – Comparable companies

Annex 2 – Markets and Regulation - Rest of Europe

Company	Description	Country	Description
Iberdrola	Multinational electric utility company based in Bilbao (Spain), It operates on diverse areas of business, included the renewable energy (Iberdrola Renewables) – the business that interests EDPR causes. The later business was integrated to the parent company in 2011 and attained a 14 GW installed capacity in 2012, with 43% of it outside Spanish borders, resulting in a total electricity output of more than 31.5 GW that year.	France	<p>France is the 7th country in the world in terms of wind installed capacity, which amounted for 7.2 GW in 2012. It has been an important market for EDPR, however its relative importance will diminish in the Rest of Europe region, as only 11% of the total installed capacity additions in 2014-2015 are due to France (vs. 23% in Poland and 18% in Romania).</p> <p>France has a stable regulatory environment and framework. It comes from a feed-in tariff. In the first 10 year it is fixed at €82 p/MW, directly linked to inflation movements. In the other 5 years of the agreement, the feed-in tariff is revised inversely correlated to load factor</p>
Longyuan	Greatest wind power producer in China (1st country in the world in terms of wind installed capacity) and Asia. Longyuan Power is a subsidiary of the public China Guodian Corporation, and in control of the management of Guodian's renewable energy assets, that account for approximately 25% of the chinese wind installed capacity.	Belgium	<p>Belgium is the last country in the top 25 wind installed capacity ranking, presenting an important growth rate in the last years. EDPR predicts to allocate there 2% of its installed capacity addition plans.</p> <p>The remuneration scheme is also stable in Belgium, and functions according to a market price plus green certificates structure. The market price comes from the national market for electricity or bilateral contracts, whereas there is an incentive of 1 GC p/MW for wind during 10 years, with 5-year validity and tradable on established market - (Cap and floor for GC: Wallonia (€65-€110); Flanders (€80-€125)</p>
NextEra	America's 3rd largest utility company and biggest wind and solar energy producer in North America. It owns 3 subsidiary companies: NextEra Resources, Florida Power & Light; and FPL FiberNet. The later is the largest subsidiary of NextEra. The company is the 3rd company worldwide in terms of wind installed capacity.	Italy	<p>Italy is one of the top players in the wind industry (7th place), however EDPR does not have a significant presence in the country. In 2013E, the company only had 70 MW of installed capacity, predicting to achieve 124 MW by 2018, which represents only 2% of intalled capacity addition plans.</p> <p>The remuneration scheme was quite complex before 2013 (market price + green certificates / feed-in premium), however it is now much more simple and based on PPA through competitive auctions (20-year).</p>
Acciona	Spanish multinational company operating in several businesses, including a great share of infraestructure and energy construction. The company is the 5th largest company in the world in what concerns wind installed capacity and is present in the greatest markets of EDPR.		
Enel GreenPower	Italian conglomerate in the renewable energy business. It operates in almost 20 countries worldwide, and its main growth drivers are in Italy, Iberian Peninsula, Eastern Europe (Romania), France, U.S., and Latin America. From here, one can easily conclude that ENEL operates in the same regions as EDPR and is a growing potency in the sector.		

Source: Insitutional sites, Reuters

Source: Wind Energy Reports; 9M13 EDPR presentation

Annex 3: Income Statement Consolidated EDPR

	2010	2011	2012	2013E	2014F	2015F
Income Statement						
Revenues	948 €	1 069 €	1 285 €	1 387 €	1 501 €	1 655 €
Total Revenue	841 €	957 €	1 158 €	1 274 €	1 383 €	1 531 €
Income from IP	107 €	112 €	127 €	113 €	118 €	123 €
Other Operating Income/(expenses)	-235 €	-268 €	-348 €	-341 €	-364 €	-394 €
Other operating income	73 €	85 €	63 €	67 €	81 €	98 €
Suppliers and Services	-196 €	-225 €	-262 €	-280 €	-306 €	-339 €
Personnel Costs and employee benefits	-55 €	-61 €	-63 €	-49 €	-54 €	-60 €
Other Operating Costs	-57 €	-67 €	-87 €	-79 €	-85 €	-93 €
Other cost and adjustments	0 €	0 €	0 €	-15 €	-17 €	-20 €
EBITDA	713 €	801 €	937 €	1 031 €	1 120 €	1 241 €
EBITDA/Revenues	75%	75%	73%	74%	75%	75%
Provisions	0,2 €	0,3 €	0,0 €	0 €	0 €	0 €
Depreciations and Amortizations	434,1 €	468,5 €	502,8 €	-522 €	-566 €	-610 €
Depreciations from Others and adjustments	0 €	0 €	0 €	-6 €	-6 €	-7 €
Amortization of Deferred Income	11,4 €	15,0 €	15,2 €	14 €	14 €	14 €
EBIT	290 €	347 €	450 €	517 €	562 €	638 €
Capital gains (losses) - Sale of financial assets	0 €	10 €	3 €	4 €	4 €	4 €
Financial Income (expense)	-174 €	-244 €	-278 €	-281 €	-285 €	-288 €
% Financial debt	4,9%	6,4%	7,2%	7,2%	7,2%	7,2%
Income (losses) from group and associated companies	5 €	5 €	7 €	6 €	6 €	6 €
Pre-Tax Profit	121 €	119 €	182 €	246 €	288 €	360 €
Income taxes	-38 €	-28 €	-46 €	-66 €	-77 €	-96 €
% taxes	31%	24%	25%	27%	27%	27%
Profit of the Period	83 €	91 €	136 €	180 €	211 €	264 €
Net Profit (Equity holders of EDPR)	80 €	89 €	126 €	135 €	158 €	198 €
Non-Controlling Interests	3 €	2 €	10 €	45 €	53 €	66 €

Annex 4: Balance Sheet Consolidated EDP

	2010	2011	2012	2013E	2014F	2015F
Assets						
PPE	9 982 €	10 455 €	10 537 €	10 495 €	10 846 €	11 152 €
Intangible assets and Goodwill	1 367 €	1 334 €	1 327 €	1 327 €	1 327 €	1 327 €
Investment in associates	46 €	51 €	48 €	48 €	48 €	48 €
Available for sale financial assets	18 €	10 €	9 €	9 €	9 €	9 €
Deferred tax assets	39 €	56 €	89 €	89 €	89 €	89 €
Inventories	24 €	24 €	16 €	18 €	20 €	22 €
Trade Receivables	144 €	145 €	179 €	219 €	247 €	283 €
Account Receivables - other	680 €	750 €	849 €	882 €	899 €	921 €
Debtors and other assets from com.actv. - Current	91 €	80 €	104 €	119 €	129 €	143 €
Debtors and other assets from com.actv - non	63 €	64 €	55 €	55 €	55 €	55 €
Other debtors and other assets - current	384 €	379 €	335 €	335 €	335 €	335 €
Other debtors and other assets - non	61 €	185 €	300 €	300 €	300 €	300 €
Current tax assets	81 €	41 €	55 €	73 €	80 €	89 €
Financial assets at fair value through p/l	36 €	0 €	0 €	0 €	0 €	0 €
Cash and Cash equivalents	501 €	220 €	246 €	361 €	164 €	64 €
Asset Rotation assets	0 €	0 €	0 €	310 €	620 €	930 €
Total Assets	12 835 €	13 043 €	13 301 €	13 760 €	14 269 €	14 845 €
Equity						
Share capital + Share premium	4 914 €	4 914 €	4 914 €	4 914 €	4 914 €	4 914 €
Reserves and retained earnings	274 €	325 €	384 €	510 €	645 €	804 €
Consolidated net profit to equity holders	80 €	89 €	126 €	135 €	158 €	198 €
Non-controlling interests	126 €	127 €	325 €	370 €	423 €	489 €

Total Equity	5 393 €	5 454 €	5 749 €	5 929 €	6 140 €	6 404 €
Liabilities						
Financial Debt (long term and short term)	3 534 €	3 826 €	3 874 €	3 923 €	3 971 €	4 019 €
Change in debt	-	293 €	48 €	48 €	48 €	48 €
Employee benefits	0 €	0 €	0 €	0 €	0 €	0 €
Provisions	54 €	58 €	64 €	62 €	66 €	69 €
Deferred tax liabilities	372 €	381 €	381 €	381 €	381 €	381 €
Institutional Partnership in US wind farms	1 644 €	1 784 €	1 680 €	1 567 €	1 448 €	1 325 €
Accounts payable - net	1 838 €	1 542 €	1 555 €	1 588 €	1 643 €	1 717 €
Asset Rotation liabilities	0 €	0 €	0 €	310 €	620 €	930 €
Total Liabilities	7 422 €	7 591 €	7 553 €	8 128 €	8 441 €	8 405 €

Annex 5: Sensitivity analysis % Base-case scenario vs. Pessimistic scenario

% Base/Pessimistic	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
50%	4,00 €										
45%		4,26 €									
40%			4,52 €								
35%				4,78 €							
30%					5,03 €						
25%						5,29 €					
20%							5,55 €				
15%								5,81 €			
10%									6,06 €		
5%										6,32 €	
0%											6,58 €

Annex 6: EBITDA/MW

EBITDA/MW	2010	2011	2012	2013E	2014F	2015F
Spain	0.13 €	0.13 €	0.14 €	0.16 €	0.15 €	0.15 €
Portugal	0.13 €	0.12 €	0.11 €	0.12 €	0.12 €	0.11 €
RoE	0.12 €	0.12 €	0.18 €	0.19 €	0.20 €	0.21 €
U.S	0.09 €	0.08 €	0.08 €	0.08 €	0.08 €	0.08 €
Brazil	-0.03 €	0.16 €	0.19 €	0.17 €	0.16 €	0.16 €

Annex 7: CapEx/MW

CapEx/MW	2010	2011	2012	2013E	2014F	2015F
Spain	0.59 €	0.46 €	0.59 €	0.55 €	0.55 €	0.55 €
Portugal	0.05 €	0.11 €	0.14 €	0.14 €	0.14 €	0.14 €
RoE	1.97 €	1.28 €	3.75 €	1.72 €	1.62 €	1.62 €
U.S	1.31 €	2.05 €	0.83 €	1.39 €	1.39 €	1.39 €
Brazil	-	0.89 €	-	0.89 €	0.89 €	0.89 €

Annex 8: ROIC per region

	2011	2012	2013E	2015F	2018F
Spain	3,7%	3,4%	4,8%	5,1%	5,5%
Portugal	12,9%	13,8%	15,4%	16,6%	16,2%
RoE	0,8%	6,7%	6,5%	8,2%	9,7%
U.S.	1,1%	1,1%	1,1%	1,5%	1,4%
Brazil	3,6%	2,9%	2,5%	4,8%	3,9%
Group	2,5%	3,2%	3,8%	4,7%	5,4%

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Research Recommendations

Buy	Expected total return (including dividends) of more than 15% over a 12-month period.
Hold	Expected total return (including dividends) between 0% and 15% over a 12-month period.
Sell	Expected negative total return (including dividends) over a 12-month period.

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