

EDP RENOVÁVEIS (EDPR)

RENEWABLE ENERGY

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COMPANY REPORT

4 JUNE 2012

New challenges await

EDPR's core markets stall

- EDPR's most relevant markets, US and Spain, should not provide the same promising environment for wind development as it did in the past. EDPR's growth to come mainly from Poland and Romania, followed by Brazil. New growth options announced.
- Due to the lack of consensus between Democrats and Republicans regarding the PTC extension, and the senate elections at the end of the year, we do not perceive a scenario of a PTC extension as likely in its present form.
- The impact of the debt crisis in Spain and Portugal, both countries displaying high electric system imbalances, should make governments cut costs of some sort in special regime producers. However, impact on wind energy should be limited.
- EDPR announced a new business plan through 2015, highlighted by the 1,5 GW minority purchase of CTG, which will allow for lower funding needs. Also, the company announced its intention to deleverage and to distribute dividends.
- Poland and Romania to lead growth in new installed capacity until 2015. EU, finally gave green light to the double GC system, which should boost the sector in the upcoming years. According to our expectations, 630 MW should be installed in both countries until 2015.

Company at a glance

EDP Renováveis is a wind farm developer company, which has as main objectives to plan, to construct and to operate mainly wind energy power generation stations. Its history started in 1996, when it installed the first wind park in Viseu, Portugal (under Enernova brand). One year after, the internalization process begun with a new park installed in Spain. Since then the company grew quite impressively, from an Iberian company to a global company.

Recommendation: BUY

Vs Previous Recommendation HOLD

Price Target FY12: 3,96 €

Upside/ Downside Potential (%) 39,4 %

Price (as of 4-Jun-12) 2,84 €

Reuters: EDPR.LS; Bloomberg: EDPR:PL

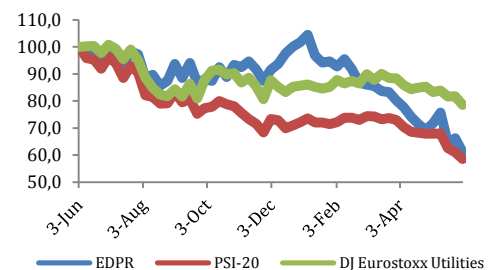
52-week range (€) 2,800-4,9349

Market Cap (€m) 2.474,74

Outstanding Shares (m) 872,308

Free Float 22,47%

Source: Bloomberg



Source: Bloomberg

(Values in € millions)	2011	2012E	2013F
Revenues	1.069	1.295	1.378
EBITDA	801	975	1.042
EBITDA Margin (%)	74,9%	75,3%	75,6%
EBIT	348	536	594
Net Income	89	228	209
EPS	0,1	0,26	0,24
P/ E	-	15,16	16,56
Dividend Yield (%)	-	2,3%	2,1%
EV/ EBITDA	11,26	9,25	8,66
EV /MW	1,21	1,12	1,09
Net Debt/ EBITDA	4,50	3,96	2,88

Source: EDPR Reports; Nova Analyst Estimates

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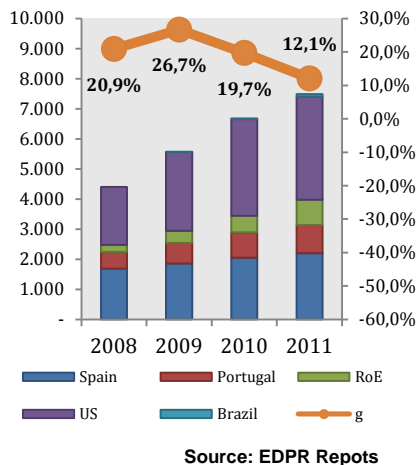
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Company overview

Chart 1: EDPR's Wind Installed Capacity Evolution (MW)



Company description

EDP Renováveis is a wind energy operator, owned by the number one utility company in Portugal, EDP, incorporated into shares in December 2007, one year after the acquisition of Horizon (now EDPR NA). On June 2008, it became a public-traded company. During the period between 2006 and 2011, the company increased its installed capacity almost 5 times, meaning an average growth rate of 46%¹, higher than the world's average growth rate for the same period. At the end of 2011, EDPR operated 7.483 MW² of wind-installed capacity, providing 16,8 TWh of green energy, which make it the fourth biggest wind energy player, in the world, in terms of installed capacity (3,1% of Global capacity). Hence, EDPR is responsible for avoiding about 9.461 k tons of CO2 emissions per year, it has over 20 GW additional under Pipeline & prospects, employing 796 people spread across 11 countries, in 3 different continents³.

Chart 2: EDPR's vs World Wind Installed Capacity growth rate

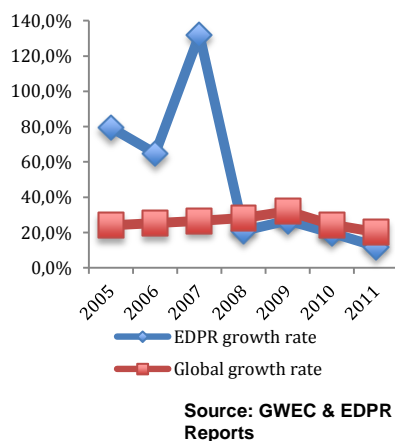


Table 1: Top-5 leaders Net wind installed capacity and output (2011)

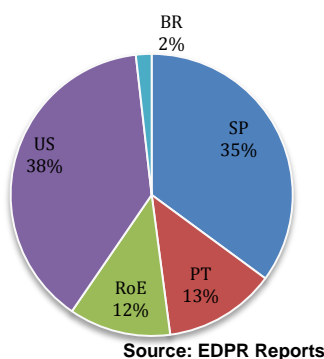
	Iberdrola	Next Era	Longyuan	EDPR	Acciona	Top-5
MW	13.274	8.386	7.768	7.158	6.054	42.640
TWh	27,9	24,6	13,4	16,8	12,7	95,4

Source: EDPR; Companies' Reports

In 2011, the company exceeded for the first time 1 billion euros in revenue, meaning a 13% growth YoY. Since 2008, despite the global difficult macroeconomic conditions, EDPR was able to capture an average growth rate in revenues of 22%. This growth came mainly EDPR's core markets: Portugal, Spain and US, representing 86% of company's revenues in 2011. In terms of EBITDA, EDPR improved 12% YoY to 801 million, which means an EBITDA Margin of 74,9%. This figure indicates that between 2008 and 2011, EBITDA almost double, only partially explained by the increase energy produced, from 23,5 in 2008 to 21 in 2011. In terms of profitability, EDPR's net income raised to 88,6 million, a 10% increase relatively to 2010.

When the company started the procedures to become a public trading company, it announced the target to install more than 10,5 GW of wind capacity by 2012. However, the global financial crisis and the consequent strains on credit made this goal impossible to achieve. In that sense, EDPR had no choice but to slow its growth as capex gradually decreased from 2.091 million, in 2008, to 830 in 2011.

Chart 3: EDPR's Revenue Breakdown (2011)



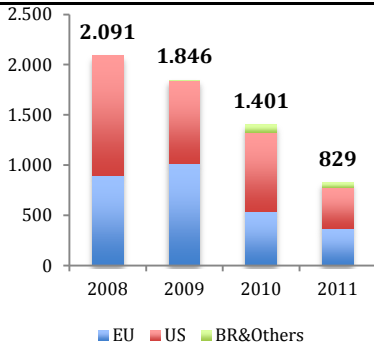
¹ Including organic and inorganic growth

² Including 326 MW attributable to the Consortium ENEOP

³ Based on company info

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Chart 4: EDPR's Capex Evolution (€m)



Source: EDPR Reports

Diagram 1: EDPR's Business Units



Source: EDPR Reports

Diagram 2: EDPR's Shareholder Structure



Source: EDPR Reports

During the last investor's day, on May 22nd, EDPR presented its 2012-15 business plan. Due to the sluggish situation of EDPR's core markets, company's CEO, João Manso Neto⁴, was forced to discover new growth options, namely in emerging economies with strong electricity demand prospects⁵ and offshore wind. Also, for the first time, the company showed its intentions to invest in a technology other than wind, solar PV. In this plan, Romania, Poland and Brazil are reinforced as the most reliable markets in the short-term. In other highlights, China Three Gorges (CTG)⁶ will purchase 1,5 GW in non-controlling interests, in some of EDPR's wind parks, representing a €2 bn investment, from which EDPR should fund part of capex needs, distribute dividends (25%-35%) and pay for debt. According to our estimates, by year-end, EDPR should have accumulated slightly more than 8 GW, meaning additional investment of 314 million.

EDPR is basically divided in three different business units, according to its different geographies: EDPR Renewables Europe (EDPR EU), including Portugal, Spain, Poland, Romania, France, Belgium, Italy and U.K; EDPR Renewables North America (EDPR NA), compounding US and Canada; and EDP Renováveis Brasil⁷ (EDPR BR).

At the beginning of 2012, EDPR displayed a sound and diversified portfolio of projects, totalizing more than 20 GW. Nonetheless, the core markets, which do not have the most promising perspectives for renewable energy development, account for 73% of the total portfolio. Executing most promising projects is one of EDPR's milestones.

Table 2: EDPR – Projects under Pipeline and Prospects (MW)

Pipeline ⁸	Tier 1	Tier 2	Tier 3	Prospects	Total
Spain	81	233	1.956	1.527	3.797
Portugal	108	17	13	200	338
Poland	76	300	219	770	1.365
Romania	54	264	30	200	548
RoE	32	297	1.754	929	3.012
NA	775	3.968	3.135	2.395	10.273
Brazil	146	153	615	700	1.614
EDPR	1.272	5.232	7.722	6.721	20.947

Source: EDPR's 2012, 1st Quarter Presentation

⁴ Replaced Ana Maria Fernandes at the end of 2011

⁵ The possibilities presented were Turkey, Peru, South Africa, Mexico, Chile, Morocco and Ukraine

⁶ CTG is the largest renewable energy player in China and at the beginning of the year acquired a 21% stake in EDP with special interest for the renewable segment

⁷ EDPR holds 55% of EDP BR, the remaining 45% are held by Energias do Brasil (65% owned by EDP)

⁸ Tier 1, Tier 2 & Tier 3 indicate time-to-market of < 18 months, between 18-36 months and > 36 months, respectively; Portugal includes 102 MW, under Tier 1, correspondent to ENEOP; RoE includes France, Belgium, UK and Italy; 100 MW of NA Prospects are affected to Canada

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Valuation

Pessimistic scenario:

Greece leaves Euro and Portuguese Republic defaults

In order to value EDPR, we considered a pessimistic, a base-case and an optimistic scenario, to which we allocated probabilities of 15%, 75% and 10%, respectively.

The pessimistic scenario assumes Greece leaves the Euro-zone and defaults on its contracts, leading to a generalized contagion effect throughout Europe culminating with a Portuguese Government default and Spanish bailout. Under this setup, EDPR's parent company, EDP, highly dependent on government agreements, enters in financial distress compromising the financing of future projects and forcing it to a wind farm sell-out. Also, we assume that the EDPR NA business unit is sold and that the Portuguese and Spanish governments cut any type of renewable incentives⁹. Though, the high political and social instability settled in Greece, and its lack of capability to respect its commitments makes this raises the likeliness of such scenario, the impact of a contagion effect over some other euro countries is still highly uncertain and difficult to predict. Thus, we assign a 15% probability for our bear case scenario.

Optimistic Scenario:

EDP acquires EDPR, leading to a premium paid to investors

The optimistic scenario, considers EDP removes EDPR's shares from the market. Under this possibility, EDP acquires the company's stock with an implicit premium. During 2011, two renewable energy companies, Iberdrola Renovables and EDF Energies Nouvelles, were remerged with its parent companies, Iberdrola and EDF (Electricite de France), respectively. We used these two cases as benchmark for our analysis. EDP has publicly announced several times that the operation makes sense and during the first quarter results presentation of 2012, EDP implicitly showed its intention to acquire EDPR during 2013. In that sense, we weight 10% on the possibility the announcement is made prior to 2012.

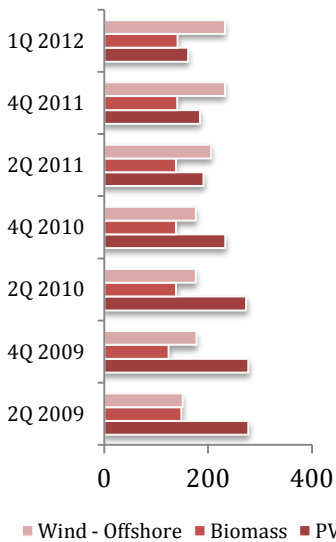
Base-Case Scenario: Methodology

For the base-case scenario, we conducted a DCF analysis, using the Sum of The Parts approach (SoTP). Given the single industry in which EDPR operates, we divided our analysis in EDPR's most important markets: US, Spain, Portugal, Poland, Romania, RoE (France, Belgium & Italy) and Brazil. We did not consider the projects under prospects due to the large time-to-market and the consequent high unpredictability of the conditions related to such projects. Using the same reasoning, we did not include in our valuation the possible wind projects in emerging markets, as well as the solar pv and wind off-shore projects (as

⁹ One may find more details on bear and bullish scenarios on appendix

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Chart 5: Other Technologies LCOE evolution (\$/ MWh)



Source: Bloomberg New Energy Finance

presented on the strategic plan). Regarding, the wind options in emerging markets, details are still unknown, there is nothing yet guaranteed and the company did not assume any installed capacity in those countries on the strategic plan through 2015. In what concerns the other technologies, even though its LCOE¹⁰ have been declining, the company assumed it will be conservative in approaching those (particularly wind offshore). So, conditions and markets in which they shall operate are also uncertain and therefore, it did not considered those on our valuation.

In each one of the markets, we assumed the installations of the projects with lower time-to-market (until 2016) and the ones we considered to be most probable to be installed given the regulatory and macroeconomic environment of each market. The cash flows were calculated until the last MW ends its useful life¹¹. After each MW installed ends its useful life, we considered a terminal value, assuming repowering of those assets. Repowering investment shall be equal to 75% of initial capex, the turbine weight on total investment costs on a regular wind project, remunerated at market prices.

Each market is valued at its local currency¹², in nominal terms and is discounted by its correspondent WACC. All markets, which do not have euro as currency, have its Free Cash flows discounted by its respective WACC, that are then converted into euros, based on the end of 2012 forward rate.

Main Assumptions

WACC

In order to assess the opportunity cost that investors face by investing in each one of EDPR's markets, we measured the weighted average cost of capital (WACC).

Since EDPR does not issue debt we opted from a mixed approach when calculating EDPR's cost of debt. Even though EDPR finances itself mainly through EDP, we perceive as unrealistic to consider EDPR finances itself at same rates as its parent. Being so, to forecast EDPR's yield, we considered the market yield from a 10-year bond issued by EDP¹³ (to meet the duration of cash flows) and applied a 125 bps EDPR-EDP's spread. This spread is based on the

EDPR's spread over EDP

¹⁰ Levelized Cost of Energy

¹¹ We assumed the useful life of wind farms to be 25 years, based on company information

¹² The only exception is Romania, which we opted to analyse in euros, given that Green Certificate system is set in euros and indexed to euro inflation

¹³ Resulted from the issue of €500m in June 2006 maturing in June 2016; Ask Yield to maturity equal to 8,85%, as of May 2012

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estimation of a synthetic rating¹⁴ to EDPR of B+¹⁵ (equivalent to Moody's B1), which when compared with EDP's BB rating (Moody's rating¹⁶ equivalent) reveals a credit spread of 1,25% between the two companies. Ultimately, the cost of debt results from a weighted average¹⁷, considering a probability of default associated with a B1 rated bond and a recovery rate¹⁸.

In the US, there is an alternative type of financing through Institutional partners: the tax equity investors (TEI). For the cost of tax equity, we assumed the average IRR tax equity investors require¹⁹, on renewable energy projects in recent years, on the flip date, to be a good proxy. EDPR has negotiations on-going for a tax equity structure related with the 215 MW under construction in US.

When computing the cost of Equity, we relied on the traditional Capital Asset Pricing Model (CAPM). The risk-free was determined based on the average yield since 2006, to capture the prior/after financial crisis effect, on 10-year Government Bonds (for liquidity reasons and to match duration of cash flows) from the least risky Sovereign countries, Germany and US, which serve as reference²⁰ to either countries with its own and other currencies. Countries enjoying currencies other than Euro and USD, have their risk frees adjusted to local inflations. It is assumed that both the default and reinvestment risk is negligible. In order to assess in the most proper way the stock's sensitivity with the market, we looked for betas (YTD) of companies, which we found to be the most comparable with EDPR (see table 3). Given the lack of pure renewable companies in the market (particularly in Europe), we basically considered companies with the higher degree of exposure to renewable energy and to utilities operating in some of EDPR's most relevant markets. Due to the different degrees of financial leverage across the different comparable companies, we unleveraged²¹ each beta and then averaged them out. We assumed this approach to be the most suitable for EDPR, as it captures how the financial markets perceive the sensitivity of the industry towards systematic risk, given the contemporary macroeconomic panorama. However, EDPR has a high degree of exposure to some of the countries most affected by the current sovereign debt crisis, to the euro zone in general, and to other so-called emergent markets. In

¹⁴ Based on "Damodaran on Valuation, Second Edition" – Interest Coverage Ratio and Synthetic Rating Approach

¹⁵ EDPR's forward looking Interest coverage ratio (EBIT/ Net Interest - 2012) equals 2,58; based on Analyst estimates

¹⁶ EDP is currently rated Ba1, with a negative outlook, according to Moody's Credit Rating Agency; Source: Bloomberg

¹⁷

¹⁸ Prob. of default according to "Moody's Corporate Default and Recovery Rates 1920-2010"; Recovery rate based on Analyst estimates

¹⁹ Based on Bloomberg New Energy Finance "US Clean Eergy – White Paper" (21 November 2011); we assumed an intermediate value between 8% and 9%, as stated in the paper

²⁰ German and US 10-year Government bond's yield, serve as benchmark for countries in Europe and in the rest of the world, respectively

²¹ Based on Modigliani and Miller model

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that sense we computed a beta amplifier, based on the regression of the Euro Stoxx 50 Index (to Euro-zone companies) and the Bovespa Index (to Brazil), on the MSCI World Index. Both regressions gave us significant results (in statistical terms)²². For EDPR's markets within the euro-zone, we decided to adjust²³ the beta amplifier for the countries most indebted. Also, we did not get significant results for the cases of Poland and Romania, which we think is due to the lack of historical data and lack of liquidity of such markets (particularly Romania). Hence, we adjusted the beta amplifier (for both countries)²⁴, which resulted from the first regression. This way, we can emphasise the different risk perceptions investors have towards the different markets. For the Market risk premium, we used the historical risk premium²⁵ for the US (provides the highest amount of data).

Table 3: Comparable Gearing ratios and Betas

	EDF	RWE	Enel G. P.	Iberdrola	Endesa	Average
D / E	194,1%	108,6%	83,3%	163,3%	94,5%	128,8%
β Levered	0,90	0,86	0,74	1,05	0,90	-
β Unlevered	0,39	0,50	0,47	0,49	0,54	0,48

Source: Bloomberg

Regarding the weights of each type of financing, we assumed the target-gearing ratio to be the average of the ones practiced on comparable firms, (Debt over Market value of Equity). The exception is the US, which has an alternative type of financing. Therefore, we assumed US has the same weight on Equity, being the remaining sources of financing dispersed between debt and tax equity²⁶.

Table 4: WACC Assumptions

	PT	SP	RoE	RON	PL	U.S	BR
Probability of Default	2,7%	2,7%	2,7%	2,7%	2,7%	2,7%	2,7%
Recovery Rate	60,0%	60,0%	60,0%	60,0%	60,0%	60,0%	60,0%
Market Yield	10,1%	10,1%	10,1%	10,1%	10,1%	10,1%	10,1%
Cost of debt	8,8%	8,8%	8,8%	8,8%	8,8%	8,8%	8,8%
Tax rate	29,0%	30,0%	33,0%	16,0%	19,0%	37,6%	34,0%
After-tax Cost of Debt	6,2%	6,1%	5,9%	7,4%	7,1%	5,5%	5,8%
Cost TEI	-	-	-	-	-	8,5%	-
Risk free rate	3,4%	3,4%	3,4%	4,7%	4,0%	3,6%	6,5%
Unlevered beta	0,48	0,48	0,48	0,48	0,48	0,48	0,48
Levered beta	0,92	0,91	0,89	1,00	0,98	0,73	0,89
Beta amplifier	1,16	1,14	1,12	1,21	1,16	1,00	1,10
Mkt Risk Premium	6,0%	6,0%	6,0%	6,0%	6,0%	6,0%	6,0%
Cost of equity	9,8%	9,6%	9,4%	12,0%	10,9%	8,0%	12,3%
Weight Equity	43,7%	43,7%	43,7%	43,7%	43,7%	43,7%	43,7%
Weight Debt	56,3%	56,3%	56,3%	56,3%	56,3%	36,3%	56,3%
Weight TEI	-	-	-	-	-	20,0%	-
WACC	7,8%	7,6%	7,4%	9,4%	8,7%	7,2%	8,6%

Source: Nova Analyst Estimates

²² See regression results on Appendix

²³ Adjustments to Beta amplifier (1,12): Portugal + 2 std dev; Spain + 1 std dev

²⁴ Adjustments to Beta amplifier (1,12): Poland: + 2 std dev; Romania + 4 std dev

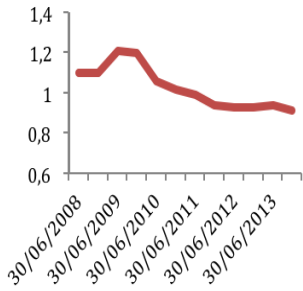
²⁵ "Damodaran on Valuation, Second Edition" – Arithmetic average of risk premiums (Stocks over Treasury bonds), 1928-2004

²⁶ We assumed lower levels of tax equity given our perception of not extension of PTC in its present form

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Capex

Chart 6: Wind Turbine Price Index (€/MW)



Source: Bloomberg

Capital expenditures for EDPR are basically the investment costs related with the construction of wind parks. Wind turbines represent about 75% of the total investment costs (as assumed in our valuation model), grid connection and foundations weight about 15%, and the remaining 10% are due to land rent, electric installation, consultancy and other minor costs²⁷.

As the wind turbines signify the most important slice of the pie, we assumed the Capex per MW, for EDPR’s future wind projects, to follow the trend in wind turbine prices. As one may see on the chart 1, wind turbines prices have been declining consistently since reaching a peak in June 2009 and wind turbines delivered on the second half of 2011 met the historical minimum of €0,94m/MW. According to data gathered by Bloomberg New Energy Finance (BNEF) on contracts already signed, downward pressure over wind turbine prices is set to continue. Unfortunately for wind manufactures, the decline in prices is only partially explained by increased efficiency. The rough macroeconomic conditions, the unclear regulatory framework in some of the most developed markets, particularly US and EU, as well as the grid deficit in China are responsible for lower demand levels, leading to overcapacity. Furthermore, as demand is coming mainly for emerging countries, the Chinese manufactures competition on orders is tremendous.

After 2013 we assume turbine prices should continue to decrease at least until 2015, assuming technology improvements and increased competition, which will effectively raise operators’ bargaining power. The investment per MW should follow proportionally the decline in turbine prices.

Table 5 : Evolution of Capex per MW installed (€m)²⁸

	2010	2011	2012	2013	2014	2015	2016
Capex /MW	1,59	1,32	1,28	1,23	1,22	1,20	1,19

Source: Nova Analyst Estimates

Given that wind turbine manufactures operate globally, it is our perception that investment costs per MW installed should not vary considerably across different countries. Hence, we assumed the same capex per MW for all EDPR’s markets. Also this capex should be depreciated over 25 years, in line with wind farms’ useful life.

²⁷ According to Vestas “Wind power in Romania: Potential, Benefits, Barriers”

²⁸ We assumed 1 year delay of wind turbine prices over the index because we considered new wind parks should be constructed in equal parts between year t and year t+1

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Operating Costs (Opex)

As far as operating costs are concerned, we assumed a target value for 2015 to which operating costs tend, for all markets, which follows inflation thereafter. This target value is based on a efficiency metric set by EDPR under the strategic plan 2012-15, OPEX per average MW should not have increased more than 0,9% by 2015, relatively to 2011 standards, that is €43,6/ MW. We opted to convert this metric into target opex per MWh as it takes into account costs per each unit of energy generated, thereby considering the different load factors in each different market.

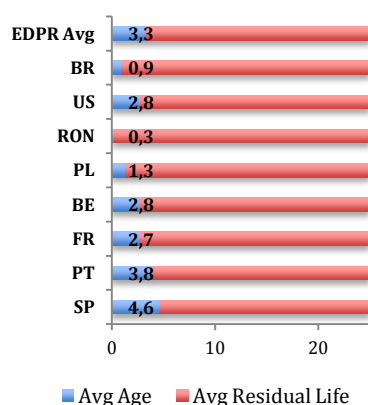
Table 6: Opex per unit produced 2011 vs Target Strategic Plan (€/MWh)

	PT	SP	RoE	RON	PL	U.S	BR	Total
2011	20,0	18,4	24,2	24,2	24,2	15,8	37,5	19,0
2015	18,5	19,7	21,2	23,9	20,4	15,8	17,9	18,0

Source: EDPR Reports; Nova Analyst Estimates

Market Prices

Chart 7: EDPR Assets' Average Age (Years)



Source: EDPR Report

For EDPR markets, whose remuneration systems oblige for exposure to market prices, the case of GC systems, premiums (e.g. Spain) or end of long term PPA's²⁹; we relied on power exchange futures from each market to determine future power generation prices, after which we considered to evolve according to local inflations.

Table 7: Power Energy Futures in EDPR's Markets (shadowed in grey)

	2012	2013	2014	2015
Spain (€/ MWh)	54,2	50,1	49,3	50,2
Poland (PLN / MWh)	201,9	211,2	217,1	222,5
Romania (€/ MWh)	49,0	50,5	52,0	53,6
France (€/ MWh)	50,7	49,7	50,8	52,5
Belgium (€/ MWh)	50,0	50,8	51,4	52,3
Italy (€/ MWh)	73,4	71,3	72,7	74,2
US (\$/ MWh)	34,3	39,7	40,3	42,6

Source: Bloomberg and data gathered from several Power Exchange Indexes³⁰

²⁹ We assume after Power purchase agreements (PPA) expire, energy generated is sold at market prices

³⁰ Following the order, OMIP Iberian Energy derivatives Exchange; Polish Power Exchange (POLPX); Romanian Power Market Operator (OPCOM); European Energy Exchange (EEX) and Endex European Energy derivatives; OTC Energy Composite

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For US, we considered a weighted average of the six indexes where EDPR NA's generated energy is traded, based on wind-installed capacity comprehended on geographical extent of each index.

Table 8: Power Energy Futures in each Market EDPR NA operates (\$/ MWh)

	2012	2013	2014	2015	2016	2017
SPP	31,3	35,0	34,8	36,3	37,5	39,5
PJM	40,6	48,6	46,8	49,3	51,5	53,2
ERCOT	40,2	46,0	49,2	52,5	53,4	54,3
MISO	23,0	25,6	28,0	30,0	32,7	33,8
NY	36,0	36,7	39,0	41,0	42,2	42,9
WECC	23,4	29,6	32,9	35,4	37,8	40,2
Average	34,3	39,7	40,3	42,6	44,5	46,0

Source: Bloomberg; Nova Analyst Estimates

Regulated remuneration is explained further ahead on the Regulation and markets section.

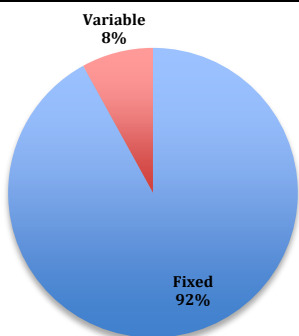
Financing

Regarding the financing of future investment activities, we reckon four forms of funding: Operating cash flow, the € 2,0 bn CTG investment in minority stakes, financial debt and Tax equity, in line with the strategic plan. The former two sources should play an important role until the end of the year, before losing importance to first two sources. We also take into account management goal to distribute 25% to 35% of net income in dividends. As we expect slower growth relatively to the strategic plan targets, we adopt the perspective EDPR should distribute 35% from 2013 onwards.

Financial Debt

At the end of 2011, the company had € 3,8 bn in financial debt, 78% of which was contracted along with EDP group, being the remaining 22% mainly associated with project finance agreements. 92% of the company debt had a fixed rate associated, average interest rate was 5,4% and the majority of debt has a post-2018 maturity (average time-to-maturity equals 7,2 years at the end of 2011)³¹. For 2012, we contemplate a moderate increase in the company's debt, perceived as necessary, as operating cash flow alone is not sufficient to cover all the capex needs for the year, and the first CTG's cash-in will only be available in May-2013. This increase in debt should have the non-recourse form (project finance) and the finance costs associated should suffer a moderate increase

Chart 8: EDPR Gross Financial debt breakdown per type of interest costs (2011)



Source: EDPR Report

³¹ Information gathered from EDPR 2011 company report

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relatively to the average interest rate (from 5,4% to 5,6%)³². After 2013, the deleveraging process must arise due to lower capex needs, higher operating cash flow generation and CTG cash-in.

Table 9: Evolution of Net Debt (€m) and Net Debt/ EBITDA ratio (X)

	2010	2011	2012	2013	2014	2015
Net Debt evolution	3.110	3.607	3.860	2.997	2.861	2.208
Net Debt/ EBITDA	4,36	4,50	3,96	2,88	2,50	1,88

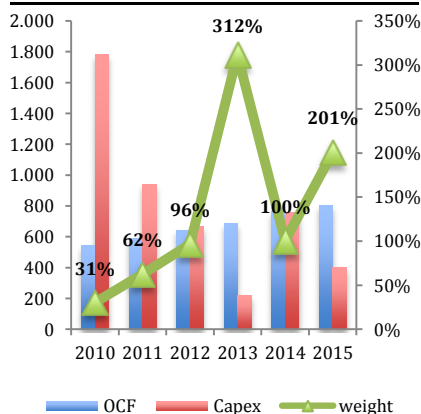
Source: Nova Analyst Estimates

Our net debt to EBITDA ratio surpasses the one proposed in the strategic plan, which was set at 2,0-2,2 x, due to our more restrictive growth assumptions.

Tax Equity

Institutional Partners have been important in funding operations in the US. In the end of 2011, EDPR had approximately €1,8 bn in Liabilities in its balance sheet correspondent to Institutional partners. On the Market and regulations' section we provide further detail about the current situation in the US in what concerns tax equity. We assume tax equity will increase in 2012 due to the construction of a 215 MW wind park. After that, given our perception that tax credit should not be extended, this type of financing will dry-out.

Chart 9: Forecast Evolution of OCF relatively to capex (€m)



Source: Nova Analyst Estimates

Operational Cash Flow

Due to the difficult conditions EDPR's core markets are inserted, capex needs for those markets have decreased dramatically. As EDPR invested heavily in the early years after the IPO, now the company is collecting the benefits, allowing for strong cash flow generation. According to our computations, Operating cash flow would be able to fund alone 141% of expected capex and 109% of total investment activities for the period 2012-15.

China Three Gorges minority stake deal

During the last Investor day, details related with CTG deal with EDPR were finally disclosed. The Chinese renewable giant is about to invest €2bn through 2015 in minority stakes totalling 1,5 GW. The first tranche of €800 million should be disbursed in May-2013 relating with 900 MW of already installed projects (mainly in Portugal, Spain and US). The second and third tranches are subject to the existence of new investment opportunities between 2014 and 2015, up to 1200 MW. For this projects, CTG is willing to invest additional €1,6 bn until 2014.

³² We used as benchmark a bond issued by EDP in 2008 with a 10% yield, similar to the yield implied on the cost of debt (WACC), coupon rate equal to 8,625%

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Nonetheless, given that at least until 2015, the most feasible projects investment are practically all covered by operational cash flow, we considered CTG should invest only €0,65 bn spread between 2014 (€0,4 bn) and 2015 (€0,25 bn). After that, CTG may purchase additional shares on new projects and the partnership may provide EDPR with good growth options and access to Chinese cheaper technology, particular in solar PV. However, we did not account for those benefits in our valuation.

We may conclude EDPR's capital needs are reduced and the company must develop a quick deleveraging process (as defined in the business plan), where 35% of net income should be distributed.

Recommendation

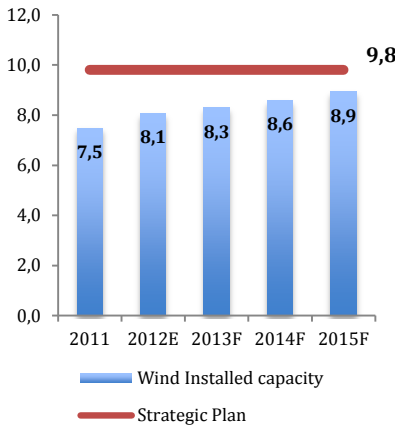
Table 10: EDPR SoTP Valuation

Markets	EV (€m)	% EV
Portugal	1.076	12%
Spain	2.439	27%
Poland	450	5%
Romania	499	6%
RoE	476	5%
US	2.388	26%
Brazil	153	2%
Terminal Value	1.538	17%
Total EV	9.018	100%
Market Value of Debt ¹	3.118	-
Tax Equity Investors	1.797	-
Financial Assets held for trade	10	-
Allocation of fair value	358	-
Minority Interests & Provisions	185	-
Equity Value	3.570	-
# Shares outstanding (m)	872,308	Probability
Base-case Scenario	4,09	75,0%
Pessimistic Scenario	1,36	15,0%
Optimistic Scenario	6,84	10,0%
Target Price	3,96	-
Current Price	2,84	-
Upside / Downside Potential	39,4%	-
Recommendation (Dec/ 2012)	Buy	-

Source: Nova Analyst Estimates

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Chart 10: Renewable Installed capacity forecasts vs Strategic plan goals (GW)



Source: Nova Analyst Estimates

Based on our valuation analysis, we provide a buy recommendation, as we sense that despite facing slower growth prospects in its core markets, and the current European financial distress can have serious impact on EDPR, we consider that the company is currently undervalued by the market.

Strategic plan vs Nova Forecasts

Table 11: Operating Data Forecasts

	2010	2011	2012E	2013F	2014F	2015F
GWh produced	14.352	16.800	18.626	19.133	20.834	21.590
Avg Load factor (%)	29,5%	29,5%	29,6%	29,4%	29,3%	29,4%
Rev. / MWh (€)	58,4	57,7	63,2	65,7	66,9	66,7
Opex/ MWh (€)	16,6	19,0	17,1	17,6	17,9	18,0
EBITDA Margin (%)	75,0%	74,9%	75,3%	75,6%	75,4%	75,1%
EBIT Margin (%)	30,5%	32,5%	41,4%	43,1%	43,7%	44,1%

A

Source: Nova Analyst Estimates

Above one may find our predictions on the most relevant operating information, from which we shall compare with EDPR's strategic plan targets.

Regarding wind installed capacity evolution, we assume no additional capacity after 2012 in US nor we predict any solar investment at least until 2015, opposing to EDPR forecasts to install 0,6 GW between 2014-15. Also, we are conservative than EDPR on the remaining markets, as we forecast less 300 MW than EDPR does by 2015. Our load factors are in line with company's information; so we do not diverge on this factor.

Taking into account that EDPR intends to have an average selling price above €70/ MWh, using our generation revenue as proxy, our expectations are once again below the company's ones. In what concerns, goals related to profitability and cash flows, only the net income target should be achieved according to our estimates. Furthermore, the lower boundary of the efficiency target EBITDA over MW installed, EDPR should only reach €131 thousand per MW by 2015.

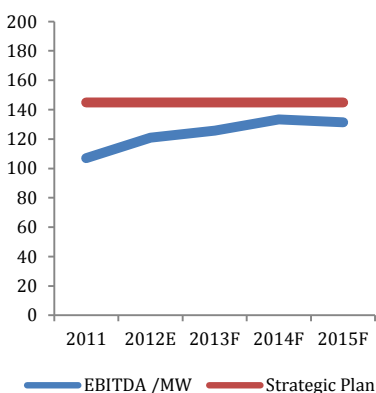
The EBITDA margin varies only marginally, reflecting the nature of the business and the EBIT margin increases substantially in 2012, reflecting the accounting change in useful life of wind farms (from 20 to 25 years) and afterwards it improves gradually until 2015. Consequently, company's ROIC (excluding investment in goodwill) is expected to rise to 5,2% in 2015, against the 3,5% registered in 2011.

Table 12: Nova vs EDPR targets (€ bn)

	Nova	EDPR
EBITDA	1.172	1,35-1,55
NI	0,275	> 0,266
OCF	0,8	1,1-1,2

Source: Nova Analyst Estimates

Chart 11: EBITDA/ MW evolution forecasts vs Strategic plan goals (€k)



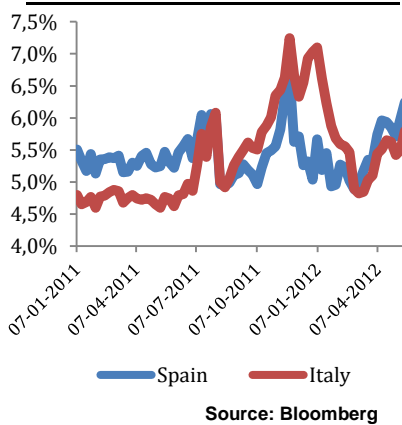
Source: Nova Analyst Estimates

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The Sector

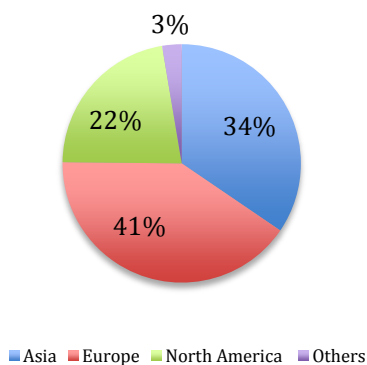
Global Recovery Stalls

Chart 12: Spanish and Italian 10-year yield



In Macroeconomic terms, the correction of structural imbalances will slow down the global economic growth in 2012, presenting a 3,3% increase (versus 3,8% in 2011), before rising again to 3,9% in 2013. The emerging and developing countries will be the main responsible for the global recovery, presenting 5,4% and 5,9% growth rates in 2012 and 2013, respectively, boosted by China, India and developing Asia. Regarding the advanced economies, the GDP will grow by 1,2% and 1,9% during the following two years. This small growth figure is mainly explained by the European debt crisis, which will push the Euro area into a recession in 2012 (-0,5%), before slowly recovering in 2013 (0,8%)³³. The fact some countries in the Euro Area reached unsustainable levels of debt, resulted in the rise in sovereign yields, banks deleveraging with natural consequences for financing the real economy and oblige countries additional harsh austerity measures towards fiscal consolidation. Currently, there are increasing concerns towards the Greece situation, as the country failed to form a government during the last general elections held on May 6th. Given the social and political instability installed in Greece, many European leaders spoke openly on the possibility of Greece leaving the single currency. Greece new elections are schedule for June 17th and the leftist Syriza bloc, which defend renegotiation of the bailout terms, are considered the favorites³⁴. There is no negotiation option for European leaders, so the results of the next elections can dictate Greece departure from the Euro-zone. In this case, the pressure over peripheral countries such like Portugal Spain or Italy should increase, possibly leading to a Spanish bailout and the systemic risk contagion could affect all the euro-zone.

Chart 13: Global Wind Installed Capacity Geographical Breakdown (2011)



Industry Analysis

Wind energy industry is nowadays a global industry, which has increased 10-fold during the last 10 years in terms of installed capacity, having started practically from scratch in 1996. The scarcity of fossil fuel resources and global warming has increased countries' awareness towards investing in renewable energy. In that sense, national governments created incentives through multiple forms of regulatory support for renewable energy development. For instance, US created the Production Tax Credit (PTC) and the issuing of REC³⁵, and EU implemented several incentives schemes, highlighted by the feed-in tariff and green

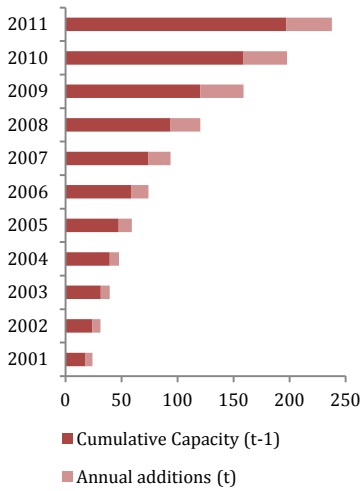
³³ Information gathered on IMF macroeconomic update from January

³⁴ According to recent polls

³⁵ Renewable Energy Credit; only applicable for some US local States

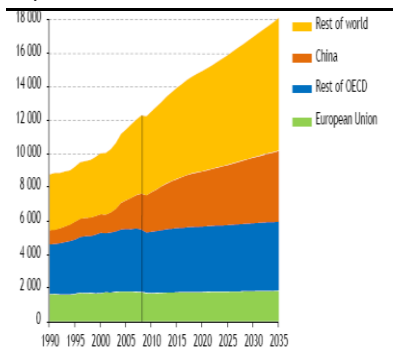
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Chart 14: Global Cumulative Wind Installed Capacity (GW)



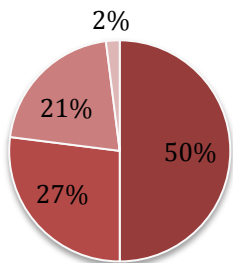
Source: GWEC

Chart 15: World Energy Demand (million toe)



Source: IEA World Energy Outlook

Chart 16: Breakdown of typical wind project total costs (%)



Source: BPI Study

certificates system. These types of incentives help explaining why EU and US are, along with China, the main responsible for the current global wind installed capacity figure. Going into the future, the growth in renewable energy should slow down in the dominant countries (so far), at least for upcoming years. This is due to the current economic conjecture in Europe, where the fiscal consolidation and the lower energy demand forecasts have put investment in renewables on hold; due to the low gas prices on US and the high deficit, which made rethink the economical viability of renewable energy, and also due to the grid deficit on China.

2011 marked a year of change in tendency as for the first time non-OECD countries contributed more for the growth in installed capacity than OECD countries did³⁶. According to Bloomberg New Energy Finance, in 2011, global clean energy investment reached a new record of \$260 billion, a 5% growth relatively to 2010 despite being considerably lower than the growth registered in 2010 (YoY) of 31%. However, the level of investment in 2011 is almost 5 times the one presented in 2004 (\$ 54 Billion), emphasising the increasing awareness towards a more sustainable global economy. With the increasing world demand for energy, boosted by emerging companies, which is projected to increase by two thirds until 2035, International Energy Agency (IEA) expects \$ 38 trillion investment in natural gas and renewables (2010-35).

To conclude our analysis on this regulated industry, we will focus on the wind farm operators segment relying on the widely recognised Porter's Five Forces³⁷ approach, used to determine the intensity of competition within a given Industry.

Threat of new entry

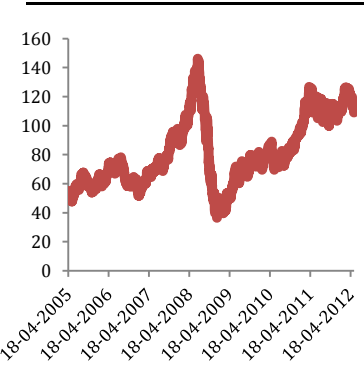
Wind energy development is characterized as a highly capital intensive industry. As one may see on Chart 16, initial investment and financial costs represent over 75% of total costs in a typical wind project. This factor may represent a serious barrier to entry, where ease to credit access and project efficiency play a really important role. During the renewable energy take-off period, particularly in EU, access to credit was quite easy as investing in renewable energy projects was seen as low risk investment, given the government support in form of subsidies which provided stable cash flow visibility. This is no longer the case, as the current credit constraints lead to relatively low threat of new entrants.

³⁶ According to GWEC

³⁷ Published by Michael Porter on "Competitive Strategy" in 1980

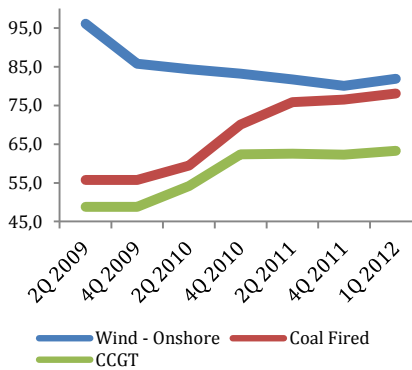
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Chart 17: Brent price Evolution (\$/bbl)



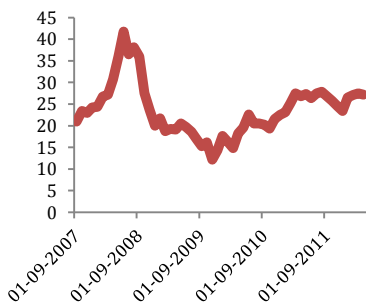
Source: Bloomberg

Chart 18: Base-case Levelized Cost of Energy (\$/MWh)



Source: Bloomberg

Chart 19: Natural Gas price Evolution (\$/Mwh)



Source: Bloomberg

Pressure from substitute sources³⁸

Wind energy consists in capturing the kinetic energy contained in wind to generate mechanical energy, which is then turned into electricity by an electric generator. So, we would say substitutes for wind energy are all the other sources responsible for electricity generated, being those renewable or non-renewable sources. One may state that the pressure is high as wind energy is still not economically sustainable on its own. However, wind has been able to close the gap with the most common non-renewable sources of energy, such as coal and natural gas, which have become more costly, contrarily to what has been happening with wind. The difference between wind and fossil fuel energy sources lies on the structure of costs as the former have much lower investment costs, despite having higher variable costs³⁹ (import of primary energy). The problem with wind energy is its intermittent nature (range between 1900-3000 in annual hours), which means we may not have electricity when there is demand for it and vice-versa. Due to the high storage costs, we cannot always count on wind energy. Thus, we should have always-alternative sources⁴⁰ to meet periods of peak demand. Nonetheless, wind energy is currently the most efficient renewable energy source (behind large hydro) and has been one of the main drivers in meeting the Kyoto protocol targets. In 2008, wind contributed for the saving of 157 million ton of CO2 emissions, representing 16% of the Kyoto target for that year⁴¹. The great threat for wind development is natural gas, which is still cheaper, more efficient and also not as pollutant as coal. Although it is still uncertain if the Kyoto protocol will be extended⁴², we believe there is still room for wind development, given the technology improvements, the expected increase in energy demand, the increasing prices of fossil-fuel and the fact wind energy helps reducing energy dependency from the exterior. Thus, due to the current macroeconomic scenario, we assume the pressure from alternative sources is medium.

Bargaining power of Buyers

The bargaining power of buyers depends on the different countries. Although, there is some negotiation involved in long-term contracts in some markets, the various forms of government support, most times provide mandatory purchase of

³⁸ Since electricity is an undifferentiated product and there is no substitute product which satisfies the same needs, we adjusted Porter's model switching products by sources
³⁹ Coal and Natural gas investment cost weight 18% and 7%, (respectively) on total project costs, based on BPI study "O sector eléctrico em Portugal"
⁴⁰ CCGT (Combined Cycle Gas turbine) and Coal fired plants work until 7.490 hour/ year (capacity factor = 85,5%); Source: BPI Study
⁴¹ According to GWEC; assuming 600g of CO2 emissions saved per kwh
⁴² In 2011, the decision to renew or not the Kyoto Protocol shall be decided until the end of 2012

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all renewable energy. Also, energy prices when not regulated are mostly determined by market prices. Hence, bargaining power of buyer is low.

Bargaining power of Suppliers

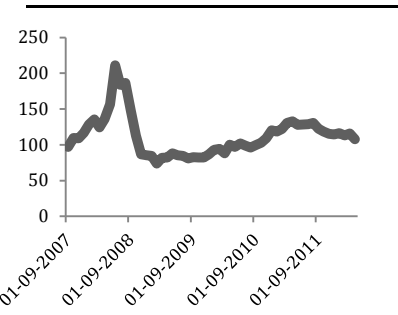
Suppliers of wind energy operators are basically the wind turbine manufactures. As explained on capex, due to the current credit strains and the reduced regulatory stability in the more matured markets, turbine demand levels are quite low. The downward pressure on prices was further aggravated by the Chinese competition on orders. As a matter of fact, bargaining power of suppliers has been decreasing over time because the industry became globally integrated and competition on orders enlarged. Nonetheless, players that deliver equipment offering higher load factors may charge a premium on prices. We would classify bargaining power of suppliers going into the future as medium/ low.

Competitive rivalry between the Wind developers & Analysis of EDPR's competitive advantages

In the industry context, as stated previously, EDPR is one of the most important players. However, if we take into account other renewable energy sources, EDPR's share becomes tinier. In order to evaluate what drives the creation of value, within the wind energy and the generic renewable energy industry, and to assess EDPR's competitive advantages relatively to sector peers, we shall use the ROIC's simplified approach⁴³.

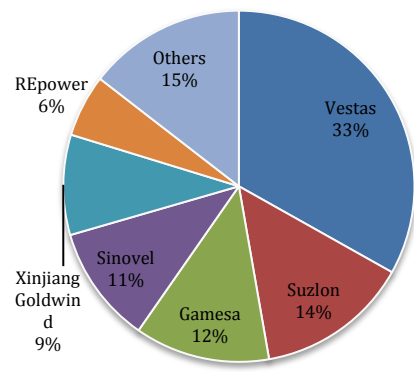
For EDPR' peers we picked three companies⁴⁴, which we found to be the most similar to EDPR in our criteria (principal markets, sources of renewable energy and installed capacity figures). Even though, we could not find pure wind players such like EDPR, which can distress somehow some of the rubrics, we can have a better perspective over EDPR among other renewable energy players.

Chart 20: Coal price Evolution (\$/ton)



Source: Bloomberg

Chart 21: Market share of public traded wind turbine manufactures' Revenues (2010)



Source: Bloomberg

Table 13: EDPR's and peers' operational data (2011)

	EBITDA margin	EBIT margin	Revenue/ MWh	Opex/ MWh	Load factor wind	Avg IC/ Mwh	ROIC
Peers' avg	69,3%	34,5%	90,8	27,9	26%	608	7,8%
EDPR	74,9%	32,5%	67,0	19,0	29%	514	7,0%

Source: Companies' presentations and Nova Analyst's estimates

⁴³ Valuation (McKinsey) approach - _____; t is the tax rate (25%), units are MWh and we used PPE as proxy for Invested Capital; rev includes other operating income

⁴⁴ The peer companies selected were Enel Green Power, Acciona and Iberdrola. On the last two we picked info from its respective renewable energy segments

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Revenue per unit

Renewable energy companies are generally price-takers, as prices are usually set either by the government (e.g feed-in tariff) or by electricity markets (e.g market price plus GC). For these reasons, it is hard to differentiate on the revenue side within the same market. It is up for the companies to look for the most rentable markets and technologies. The reason for EDPR’s lower revenue per MWh, is the fact its comparable companies have higher exposure to less matured technologies, which deliver higher tariffs (or incentives) on a per unit basis, contrarily to EDPR’s solely wind energy. Nevertheless, EDPR has low exposure to market prices, which diminishes the volatility of revenues risk and ensures long-term visibility of cash flows.

EDPR’s holder, EDP, is first utility company in Portugal and the third in Iberia, a fact that guarantees EDPR’s interests are properly defended given the negotiation power EDP holds in government relations. Additionally, EDPR has strong and well-diversified portfolio of projects in pipeline and has entered markets in early stages of development, taking the first mover’s advantage.

Operating expenditures per unit

Being price-takers, green energy companies have to focus on cost and capital efficiency. The most important costs are the personnel costs, maintenance and repair, leases & rents, specialized costs (Advisory, legal fees) and insurance. At start cost of maintenance and repair are low but tend to increase towards the end of wind farms’ useful life. Personnel costs and rents are somehow stable per MWh as the more wind farms are installed and the more energy produced, the more people and land you have to produce new energy. Yet, large operators have advantages over small ones, as they can deploy economies of scale. They can arrange better terms on O&M, advisory and insurance contracts as they have higher bargaining power. In the current economical panorama, where the incentives have consistently decreased over the recent years, the operational efficacy has become critical. Particularly, when the wind licences are attributed trough national auctions, a common phenomenon these days. Under this picture, just like Darwin theory would state, the least efficient shall not survive.

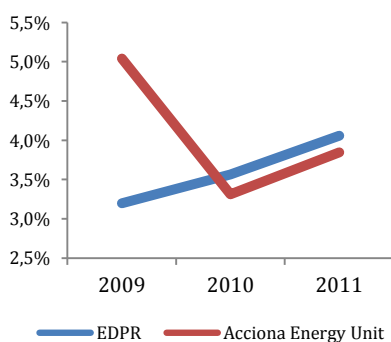
In terms of operating efficiency, EDPR is doing better than its peer companies, representing a competitive advantage.

Table 14: Breakdown by remuneration type (2011)

	Acciona	EDPR
Forward Sale/ PPA	41%	37%
Regulated framework	40%	53%
Spot	19%	10%

Source: EDPR & Acciona Reports

Chart 22: EDPR vs Acciona ROIC Evolution



Source: Bloomberg

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Chart 23: European 2020 renewable binding targets on EDPR's markets

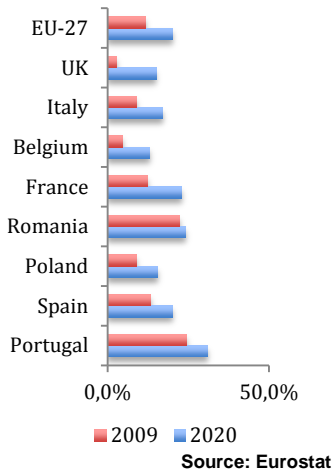


Chart 24: Wind Installed capacity evolution vs NREAP target (GW)

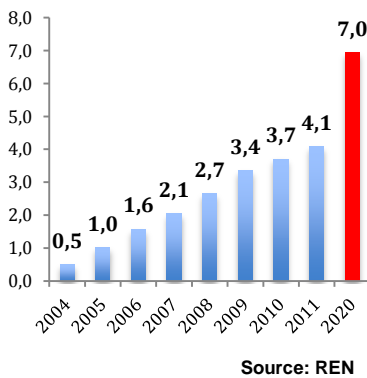
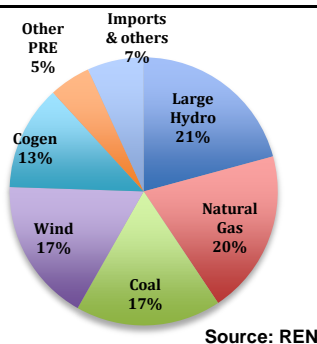


Chart 25: Breakdown Energy Production (2011)



Invested Capital per unit

Despite the fact that investment capital per technology varies substantially, on a MW basis, in the globalized wind turbine market, large players like EDPR, Iberdrola or Enel G.P should have similar negotiation power over turbine manufactures. In that sense, all in all, these main players should have access to wind turbines practically in the same conditions, taking benefits from technology improvements in equal manner. What boosts capital efficiency is the quantity of energy those turbines are able to produce. On this chapter, EDPR is an example, having provided premium load factors above the market. This allows EDPR to display a lower Invested capital on a per MWh basis. This is due to the company's highly detailed site selection process and innovative layout of wind farms, representing an innovation hard to replicate, improving EDPR's ability to differentiate itself from competitors.

Markets & Regulation

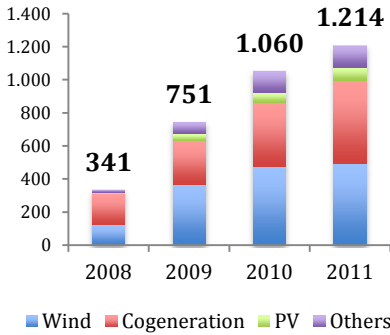
Portugal

Portugal is historically a country with considerable low levels of energy autonomy, having in 2008 only 17,7% of its primary energy consumption covered by national production, ranking the country in 5th worse position in EU⁴⁵. This is translated into an energy deficit, which, at the end of 2010, represented practically 50% of the balance of goods and services⁴⁶. Being so, Portugal, under NREAP, assumed one of the most ambitious targets among its European peers (31% of consumption). Thus, Portugal became one of the leading countries in Europe in terms of renewable energy penetration, reaching 25,4% of total consumption by 2011⁴⁷. A significant share from this achievement was due to wind energy investment, as installed capacity increased 8 times between 2004 and 2011. 2020's NREAP target for wind installed capacity was set on 6.950 MW, below the 7.500 MW assumed by APREN. Also, in order to increase Portuguese low levels of energy efficiency⁴⁸, incentives were created to invest in cogeneration, an efficiency optimizer. At the end of 2011, both cogeneration and wind energy accounted for 31% out the of the total special regime producers' (PRE) 36% share.

⁴⁵ Based on collected data from Eurostat; Energy autonomy equals primary energy production over gross primary energy consumption
⁴⁶ According to BPI study
⁴⁷ REN information
⁴⁸ According to Eurostat, by 2010, Portugal's economical energy intensity was 179 kgoe below the EU-27 average of 168,0 kgoe

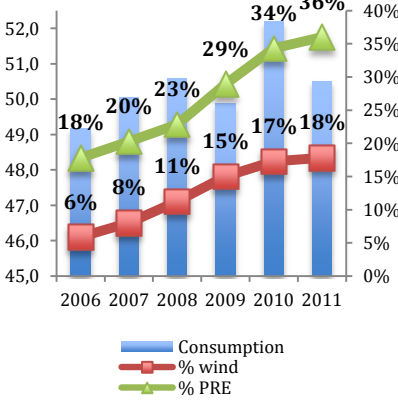
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Chart 26: Evolution of PRE's Extraordinary costs (€m)



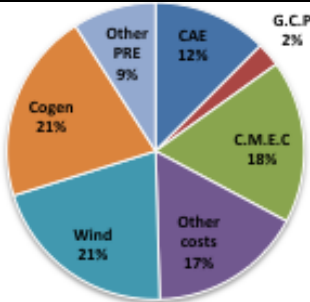
Source: REN

Chart 27: Evolution of consumption (TWh) and wind & total PRE's correspondent share



Source: ERSE

Chart 28: Breakdown of Electric system extraordinary costs



Source: ERSE

Subsidies provided to special regime producers have the feed-in tariff⁴⁹ form, being the former set by the government and indexed to inflation. Also, the last resort buyer (EDP SU) has the obligation to purchase all PRE's energy generated. For wind-generated energy, there are two distinct remuneration systems. One is applicable to all wind parks licensed prior to the competitive tender (higher tariffs) and the other applicable to wind farms during the competitive tender, as summarized in the table below. The competitive tender was held in three phases (A, B and C), and EDPR, under the consortium Eólicas de Portugal (ENEOP), obtained the right to install 480 MW⁵⁰ (against the 1200 MW from the total consortium) in phase A and 6 MW on Phase C. Since the competitive tender, there were not additional wind licenses attributed.

Table 15: Portugal's Wind energy Remuneration

	Before DL 33A/ 2005	After DL 33A/ 2005
Applicability	Wind farms licensed prior to the competitive tender (2006)	Wind farms whose licences were attributed during the competitive tender (2006)
Duration	15 years (since publication of DL 33A/2005); market prices + green certificates thereafter (if applicable) ⁵¹	Minimum between 33 GWh or 15 years (since operation starts); market prices + green certificates thereafter, if applicable
EDPR installed capacity (MW)	613 MW	Phase A: 326 MW attributed under the ENEOP consortium + 154 MW under construction; Phase C: 6 MW (under construction)
Feed-in tariff (€/ MWh)	98,7	70,3
Avg. ROIC⁵²	8,2%	8,1%

Source: Company's Reports; Nova Analyst Estimates

Going forward, renewable energy development does not look bright, as last year's IMF bailout forced Portuguese government to hard fiscal consolidation measures, one of which was to suspend remuneration on new installations. Actually, the increase in PRE' production raised its extraordinary costs⁵³ almost 4 times during the last four years, contributing to an increase in the overall costs of the electric system. These costs are commonly paid by the generality of consumers through the global usage system tariff. Nonetheless, as these costs

⁴⁹ Feed-in tariff is based on investment costs, avoided energy and CO2 costs

⁵⁰ EDPR holds 35,96% stake on ENEOP; Installed capacity starts being consolidated in 2014

⁵¹ If at the 15th year, a green certificate market does not exist the government must set a new tariff

⁵² Using Simplified ROIC approach for 1 MW benchmark remunerated at the respective feed-in tariff for the first 15 years and 10 at the new tariff (€55); in the older regime it assumes only 10 more year of feed in tariff as the average portfolio age has only that remaining period

⁵³ Additional cost over the market price (pool price) per each MWh produced by special regime producers (PRE); See chart

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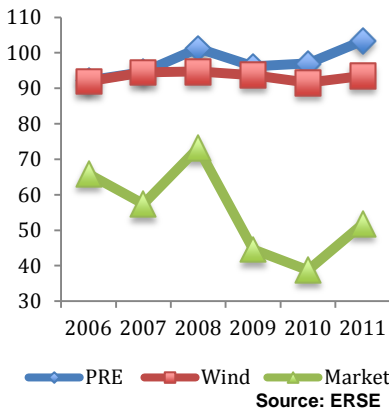
Table 16: Government perception on annual rents

	Excessive rents (€m)	Expected cut (€m)
CMEC	165	13
Wind	54	13-26
Cogen	42	78-100
Mini-hydro	3	33
CAE	21	19

Source: Energy Secretary State report through "Jornal de Negócios"

become unsustainable a tariff deficit was created. Troika has demanded some corrections on excessive costs of the system and the Portuguese government has already started correcting some imbalances, having uncovered some rents considered to be excessive. During May, two ordinances from the Portuguese parliament approved a cogeneration's remuneration cut and the suspension of the guaranteed capacity payment (G.C.P) to CCGT power plants. With these measures, the government expects €160 million in yearly savings. This has only a marginal impact on total extraordinary costs of the system, as in 2011, total costs were €2.406 million⁵⁴. So, more cuts should be put into practice. Therefore, Economy minister recently announced additional cuts across the generality of producers, in which wind energy is included. His goal is to cut €1,8 billion until 2020.

Chart 29: Evolution of Average cost per MWh vs Market reference price (€/MWh)



There are negotiations on-going with EDPR (and other operators) in order to slow down the system costs. Portuguese government hopes developers, whose parks are licensed prior to the DL 33A/2005, compensate the electricity system through 2020, in exchange for higher regulatory visibility, once the fixed tariff period is over⁵⁵. That is, on average, in ten years time, wind farms licensed by the old regime should be in the market, if and only if there is a parallel GC market, otherwise the Government should set a tariff for the consequent years. Given that the government does not have the interest in developing this market, it has threatened developers in setting a low tariff, for 2020 onwards if they do not contribute for system cost savings. Taking into account that about 3,3 GW are remunerated under the old regime, developers should contribute with €6 thousand per MW, yearly, assuming €20 million/year in costs savings (intermediate value) until 2020. In our opinion, negotiations between wind industry and Portugal's government should reach a safe harbour, given that incentives are aliened and negotiation power is well distributed⁵⁶. On EDPR's side, fixed tariff for five additional years guarantees regulatory stability and no exposure to market prices, whereas the financial contribution is not that significant. On government's side, it allows for cost reduction until 2020 (by the time the tariff's debt should be integrally paid), and thus, decreasing pressure over potential tariff increases to final consumers. In that sense, we perceive equilibrium between financial contribution and the tariff applicable shall be found,

⁵⁴ According to ERSE

⁵⁵ Remuneration remains the same

⁵⁶ The Government has interest to cut costs now, not later and EDPR has interest in safeguarding future income

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after the 33A/ 2005 feed-in tariff expires⁵⁷. Regarding the installed capacity under the new regime, as it was obtained under a competitive tender and the remuneration is much lower, on a per MWh basis, we assumed no contribution what so ever.

Given the difficult macroeconomic conditions Portugal faces, with poor economic growth prospects, we do not expect any further investment in wind at least until 2015. Also, we expect the electricity consumption to grow at a much slower pace than the NREAP plan forecasted. According to our expectations, with the already licensed wind farms, installed capacity must reach 5,3 GW.

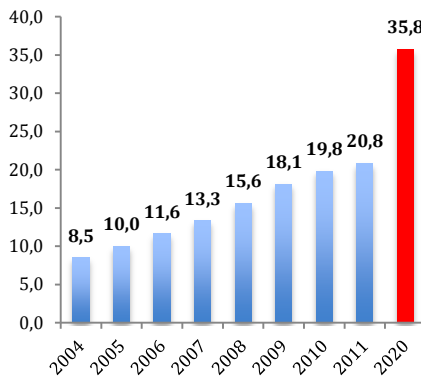
Currently, EDPR is the second player⁵⁸ (behind Iberwind), in terms of attributable installed capacity, but, the first, if we consider the ENEOP correspondent installations, with 23% market share. It is our perception that EDPR will install the remaining 154 MW under ENEOP consortium, 2 MW under construction, the 6 MW correspondents to the phase C tender and 20 MW of extra equipment out of the 30 MW option given the lower tariff. Hence, at the end of 2015, there should be 1.121 MW of installed capacity.

Spain

The Spanish market is one of the most matured countries in terms of renewable energy development. Under the 2009/28/EC directive, Spain committed to have 20% of its primary energy consumption coming from renewable energy sources, by 2020. On the proposed NREAP, wind would be one of the catalysers to achieve this goal, setting a target of 35 GW for onshore and 3 GW for offshore wind installed capacity (this last figure was then adjusted to 0,75 GW on the new plans for the 2011-20 period). At the end of 2011, the Spanish electric system (*Red Eléctrica de España*) had 20,8 GW (21% of total power⁵⁹) connected to the grid, representing a CAGR of 17% between 2004 and 2011. According to GWEC, Spain's wind installed capacity at the year-end was close to 21,7 GW, making it the 4th larger country in the world.

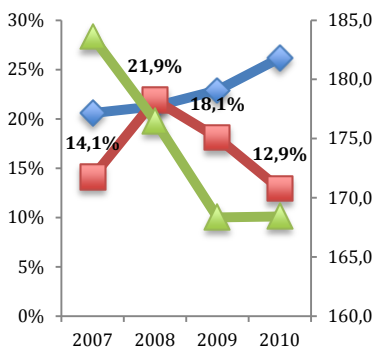
So far, the strategic move towards achieving EU 2020 binding targets has been to penetrate renewable energy into the electricity system. This strategy has paid dividends in terms of increased efficiency and levels of energetic independence, given the growth in special regime (SR) electricity producers (led by wind energy and cogeneration). At the end of 2011, special regime generation accounted for

Chart 30: Evolution of Spain's wind installed capacity vs NREAP target (GW)



Source: Red Eléctrica De España

Chart 31: Evolution of Spain's Energy autonomy and intensity relatively to growth in special regime producers



Source: Eurostat

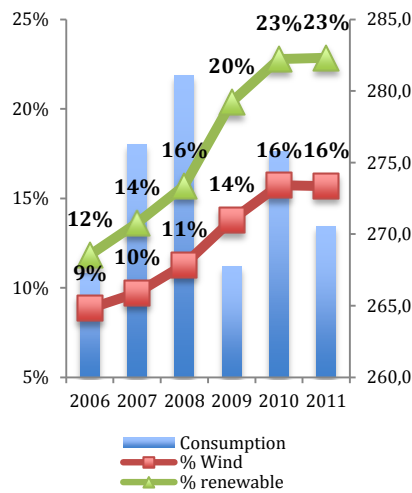
⁵⁷ In our valuation, we assume contribution to be 6 thousand times 613 MW under old regime and tariff to be €55/MWh indexed to inflation (from 2021 onwards)

⁵⁸ Based on data collected

⁵⁹ According to data collected from Red Eléctrica de España

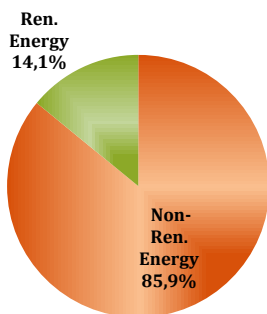
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Chart 32: Evolution of Spanish consumption satisfied by wind energy (TWh)



Source: Red Eléctrica De Españã

Chart 33: Breakdown of primary energy production (2011)



Source: Red Eléctrica De Españã

33,4% of total electricity production versus 19,7% at the end of 2007. Renewable electricity has consistently raised its weight on total consumption, boosted by wind energy. At the end of 2011, electricity generated by renewable energy sources, accounted for 7,5%⁶⁰ out of the total 14,1% of renewable energy weight on total primary energy consumption, 5,9% short of 2020 targets.

EDPR took advantage of wind market growth momentum since its early stages, from 266 MW of wind-installed capacity in 2005 to 2.201 MW at the end of 2011. This makes EDPR the third player (10,2% market share), only followed by Iberdrola and Acciona.

Currently, for wind power set on operations, there are two different remuneration frameworks: the transitory regime and the RD 661/2007. The first one resulted from RD 436/ 2004 and will expire at the end of the present year. Then, the assets should shift to the RD 661/ 2007 regime, which conceives two options. Operators are allowed to choose which of the options they prefer at the beginning of each year. Going forward, we assumed EDPR, will choose the variable tariff option over 60%, as it provides higher Profitability. However, given the lower risk profile of the fixed tariff option (no exposure to market prices), we sense EDPR should not discard this possibility. Until the year-end, this regime is going through a temporary 35% cut in premium (variable option) due to the RD 1614/ 2010 update. From 2012 on, the remuneration goes back to normal. All tariffs, premiums, caps and floors are linked to an inflation-related index⁶¹ and have guaranteed purchase. The present-day picture in Spain is surely not a bed of roses. Spain is one of the countries most affected by the existing sovereign debt crisis and is being watched closely by the "EU family". The country presents 23,1% of unemployment, the highest among its peers and a government deficit of 8,5%, the third higher of the EU⁶². The country's economy is expected to contract 1,7% in 2012 and 0,3%, in 2013⁶³. Hence, Spain is under strong scrutiny by financial markets and the upcoming years are projected to be harsh, with fiscal consolidation as the dominant note. In 2012, the new appointed government cut its budget by € 27 billion, in which there was included a sharp decline of 62% in energy⁶⁴. Spanish electric system faces imbalances analogous to the Portuguese case, but in a much larger scale. The fact special regime producers receive a premium regulated remuneration (above market prices) generates an extra cost

⁶⁰ According to APPA – *Boletín Mensual Nov. 2011*; data from Dec/ 2010 to Nov/ 2011; Total primary energy consumption equal to 93.309 ktoe

⁶¹ CPI minus efficiency factor (x); until 2012 equals 25 bps; 50 bps thereafter

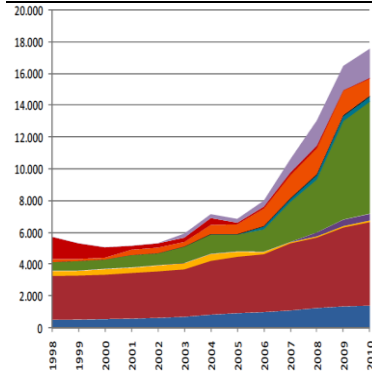
⁶² Based on Eurostat information

⁶³ IMF forecasts

⁶⁴ According to press release from the *Ministerio de Industria, Energía y Turismo*

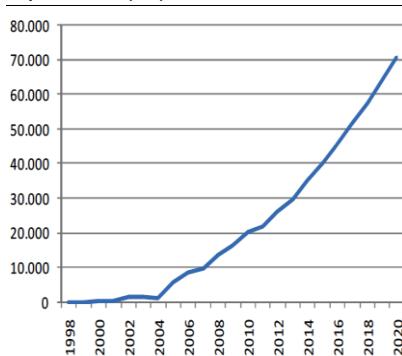
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Chart 34: Evolution of total Electricity access costs (in green special regime related costs-€m)



Source: CNE

Chart 35: Forecasted Evolution of the cumulative tariff deficit if measures are not implemented (€m)



Source: CNE

Table 17 : Costs vs weight on production among distinct technologies

	Extra costs (€/MWh)	% Energy
Cogeneration	5,4	9,2%
Solar PV	38,9	2,3%
Solar CSP	24,0	0,6%
Wind	4,1	16,1%
Hydric	3,9	2,2%
Biomass	7,4	1,4%
Residuals Res.	3,1	1,1%
Treatment	7,4	1,6%

Source: CNE

per each MWh produced. The increasing weight of special regime on total production guided to an unsustainable increase on the overall costs of the system (access costs), thereby creating a tariff deficit⁶⁵, that accumulated over the years reaching €21,8 billion in 2011.

Table 16: Spain's Wind energy Remuneration

	Transitory Regime	RD 661/ 2007 (updated by RD 1614/ 2010)
Applicability	Wind farms which started operations before 2008	All Wind farms which started operations after 2008; Applicable to the generality of wind farms from 2013 onwards.
Remuneration (€/ MWh)	Variable tariff: pool price + 38,3 (premium + incentive)	Fixed Tariff (<20 y): 79,1 or Variable tariff: 76,9 < pool price + 31 < 91,7 until the end of 2012 premium equals 20,1; Fixed tariff (> 20 y): 66,0
Duration	Expires at the end of 2012; All wind farms start to be remunerated at RD 661/ 2007 regime	No specified limit. We assume all wind farms aged over 20 years receive the respective fixed tariff; above 2.350 full load hours receive only the market price
EDPR installed capacity (MW)	1.153	1.048
Avg. ROIC	8,4%	Fixed tariff: 7,8%; Variable tariff: 8,0%

Source: Company's Reports; Nova Analyst Estimates

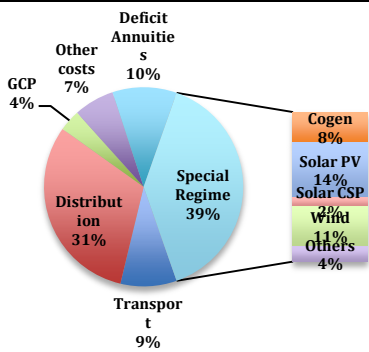
According, to CNE if new measures are not implemented, the cumulative tariff deficit could rise to more than €70 billion by 2020. It was under this context, of increasing system costs and lower demand prospects that the Government decided to put the remuneration for special regime new power capacity on hold for indefinite time, through RD 1/2012. This royal decree is valid for all new installations that were not signed-in in the pre-register at the time⁶⁶. In order to fight the tariff deficit, at the end of April, Spanish parliament approved a 7% increase in the final consumer's tariff (to increase revenues from the demand side) and announced €1,7billion in cuts across industry agents (without any further explanation). Spanish Prime Minister, Mariano Rajoy, promised equity in its measures.

⁶⁵ Tariff deficit results from insufficient access tariff revenues (charged to final consumers) to cover all its regulated costs

⁶⁶ EDPR has 110 MW sign-in in the pre-registers, which should be installed by the year-end

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Chart 36: Spanish total system costs breakdown (2011)

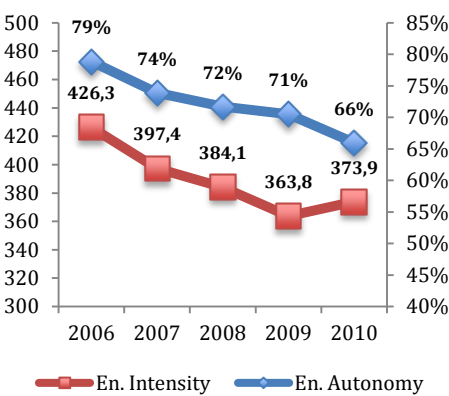


Source: CNE

We believe, under the contemporary reality, the risk of a retroactive cut in remuneration is high for special regime producers. Even though this could weaken Spanish credibility from investors' perspective, the opposite solution for the Spanish government is to increase even more the electricity price, which is among the highest in the EU⁶⁷, possibly compromising country's competitiveness and job creation. Nonetheless, we sense the most affected technologies will be the solar PV and CSP, which account for 16% of total system costs, while contributing for the insignificant 3% share of total consumption. Wind energy contributes with a lower share for total costs and a higher share of total consumption. Having large utilities and jobs behind wind energy will make negotiations harder for the government. Yet, if the cuts are transversal to all technologies, government's legitimacy increases.

In line with CNE's proposition for solving the tariff deficit issue, we assume on our valuation model an increase in the efficiency effect factor (x) from 50% to 75%, thereby decreasing the inflation related index. The ROIC for the overall Spanish business unit shifts from 8,3% to 8,1%, according to our calculations. For future installations, we do not expect any additional new installed capacity for EDPR, other than the one pre-assigned. According to CNE, there should not be more installed capacity at least until 2017, as the current capacity is enough to cover demand⁶⁸. If additional wind licences are attributed it should be in auction form, form in which EDPR would be well positioned to obtain additional growth.

Chart 37: Polish Energy autonomy and intensity (€1.000 kgoe)



Source: Eurostat

Poland

Poland, with its increasing exposure to capitalism and to western markets, is one of the countries in Europe, which has experienced stronger economical growth in recent years. For the following couple of years, the country is expected to continue growing at the same pace (3% GDP growth rates for 2012 and 2013)⁶⁹. Being the traditional markets reaching a certain degree of maturity allied with the high indebt levels of those countries, made shift the attentions towards eastern markets as far as foreign investment is concerned.

Being the largest hard coal producer in the EU, Poland has been traditionally one the countries with highest levels of energy independence and highest levels of energy inefficiency, resulting in prohibitive amounts of CO2 emissions (for EU standards). Following Poland's entrance in EU, the country committed to develop renewable energy, which represented only 7,2% of final energy

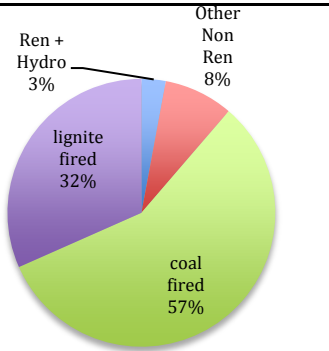
⁶⁷ According to Eurostat data

⁶⁸ Total power capacity installed over peak demand is 2,2 according to our calculations

⁶⁹ IMF forecasts

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Chart 38: Polish Power generation breakdown

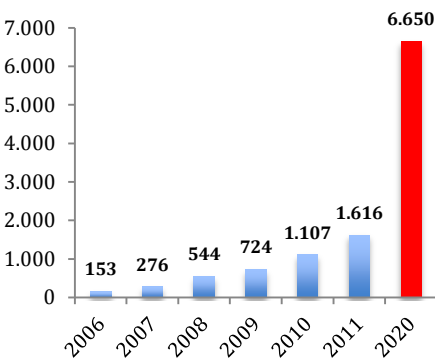


Source: PSE Operator

consumption in 2005⁷⁰. Years later, the target set for 2020 was 15,5%. In 2009, the weight had increased to 8,9%. Nonetheless, renewable energy penetration in the electricity sector is still rather insignificant, as the country relies mainly on the electricity generated from coal-fired sources.

Countries economical growth in recent years led to an increase in oil and natural gas imports, being responsible for the decrease in energetic autonomy. Given that Russia is the main supplier of those commodities, it increases public awareness for renewable energy investment as it guarantees security of supply. Regarding wind development, under NREAP, the country submitted its intention to install 6,7 GW by 2020, below the optimistic 10,5 GW set by the EWEA, which would contribute for 13,8% of consumption. Poland displays some nice features for wind expansion, as the country counts with high levels of arable land and the wind blows at an average speed of 5,5-7 m/s⁷¹, particularly suitable for large-scale wind farms. The downsides are the natural reserved areas, which have good wind potential (6% of area with best conditions) and the somewhat immature grid. Still, from 2013 on, wind operators may apply for structural and cohesion European funds provided for the development of infrastructures may be directed to wind energy development. This would surely help to boost wind energy's role on polish electric system. BNEF has classified Poland as the 11th most attractive market for wind development.

Chart 39: Polish Wind Installed capacity evolution vs NREAP target (MW)



Source: EWEA

The polish renewable energy remuneration is based on a green certificate system, where final consumer's electricity suppliers have to fulfil a specified quota of certificates issued by renewable energy operators. Otherwise, they must pay a substitute penalization fee. The former is used as a benchmark for GC trading, which can be exchanged either on bilateral contracts or on the Warsaw Commodity Exchange. According to the Polish Energy Law Act (2005), final user suppliers have the obligation to purchase all electricity generated by renewable sources. The fixed tariff option is not yet competitive, but the producer may opt between the two schemes at the beginning of each year. During the last January, Polish government presented a draft on renewable energy sources in which it specifies the length of the green certificate scheme (15 years) for the first time and it announces differentiation in incentives across different technologies (with out any further specification). Additionally, this draft provides government legitimacy to change incentives according to market conditions.

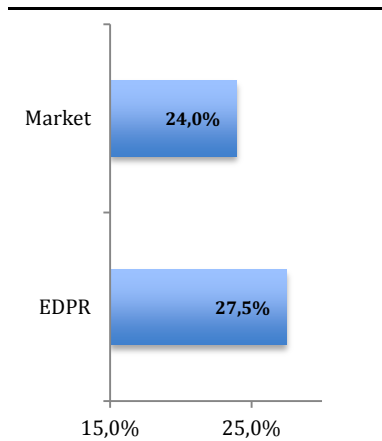
⁷⁰ According to the Renewable Energy Policy Review (EREC)

⁷¹ In some large areas at 50 meters high; GWEC's data

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We believe this draft brings some uncertainty to the sector and decreased regulatory stability. We perceive more matured technologies, like wind, should be undermined with this new renewable act. We estimate a GC for wind energy of 85% of the non-compliance penalty⁷² until 2015 and 60% thereafter⁷³, which affects all EDPR's assets. However, we consider that the profitability of projects under pipeline should not be compromise and thus, Poland should continue to be a growth market for EDPR.

Chart 40: EDPR's load factor in Poland vs Average load factor in that market



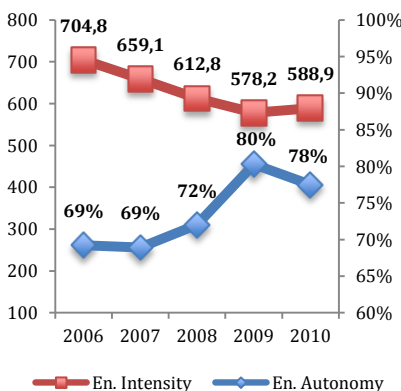
Source: EDPR's Reports vs NREAP assumed load factors

Table 18: Polish Wind Energy Remuneration

	Fixed Tariff	Green Certificate
Remuneration PLN/ MWh	198,9	Market price + GC;
(€/ MWh)	(46,7)	Non-compliance penalty: 286,7 (67,4); CPI adjusted
	CPI adjusted	Option to negotiate long-term PPA
Duration	No specified limit	15 years
EDPR installed capacity (MW)	0	190
Avg. ROIC	5,4%	10,5% (including our new draft assumptions)

Source: Company's Reports; Nova Analyst Estimates

Chart 41: Energy Intensity (kgoe/ €1.000) & Energy Autonomy (%) Evolution in Romania



Source: Eurostat

Romania

Romania is a nation where the democracy is still in a very immature stage, therefore perceived as a high-risk market. The country has the second lowest GDP per capita of the EU, 5,2% deficit, still high levels of inflation (6,4% in 2011) and where corruption still makes part of daily people's lives. Yet, the country has been attempting to converge its politics and economics with the rest of the EU. In that sense, Romania has made the promotion of renewable energy a national priority. In 2011, the country got back to economical growth after two years of recession and it is expected to remain on a growth pattern for the following years⁷⁴.

Despite having one of the highest levels of energy autonomy within the EU (78%), Romania's electric system is mainly dominated by fossil fuels (coal, gas & oil 51% of electricity produced) and also nuclear energy (19%). Thus, energy

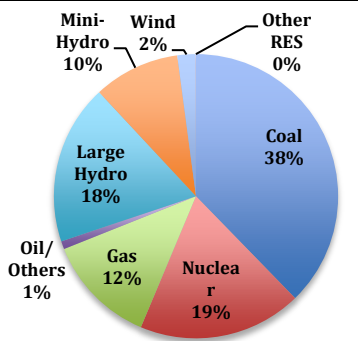
⁷² This assumption is based on the fact EDPR proposed to the polish government for wind to be entitled to receive 0,85 * GC

⁷³ As supply of GC increases, the market's liquidity should increase and thus its price should decrease

⁷⁴ Based on Eurostat and IMF information

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Chart 42: Power Generation breakdown



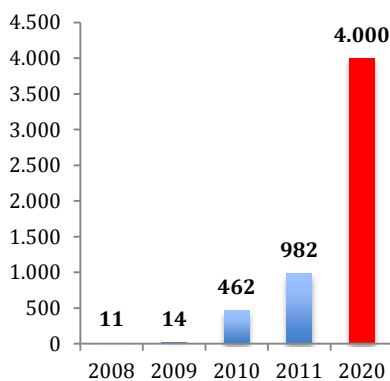
Source: ANRE

Table 19: Law 220/ 2008 RES Targets

2010	8,3%
2011	10,0%
2012	12,0%
2013	14,0%
2014	15,0%
2015	16,0%
2016	17,0%
2017	18,0%
2018	19,0%
2019	19,5%
2020	20,0%

Source: European Commission

Chart 43: Evolution of wind installed capacity in Romania (MW)



Source: GWEC & NREAP

intensity is among the highest in EU, translated into significant levels of CO2 emissions. Under the Directive 2009/28/EC, mandatory renewable energy target was set on 24% of final energy consumption for 2020. At national level, the Romanian energy strategy for 2007-2020 further reinforced its support for RES development, setting targets of 35% and 38% for renewable energy penetration on electricity consumption (including large hydro), on 2015 and 2020, respectively. However, Romania's renewable energy mix is still highly dependent on hydro sources and wind energy penetration is still low. In terms of wind-installed capacity, the country has grown practically from scratch in recent years and it expects to reach 4 GW of wind (NREAP target) by 2020. EWEA expects only 3 GW. According to Romania's Ministry of Economy report⁷⁵, the country has 23 TWh of yearly wind energy potential, being the average wind speed 6,3 m/s (at 60 m high) and escalating to 7m/s at 100m altitude⁷⁶.

The remuneration regime is based on the market price plus a GC system. Recently, in July 2011, the European Commission gave green light to the law 220/ 2008⁷⁷, thereby providing clearance to the double GC system until 2017. In each year, traditional electricity suppliers have the obligation to acquire GC's in the same proportion of the yearly mandatory renewable quota on electricity supplied to final consumers. Also, some amendments were made such like: only one GC during the trial period, validity period of GC reduced to 16 months and energy regulator (ANRE) can reduce incentives, every three years, if overcompensation happens (only for new wind farms). From 2018 onwards, each renewable MWh will have the right to receive only one GC and the wind energy installation have the right to sell GC's for 15 years, being on the market for then after.

Romania is currently, one of EDPR's markets, which provide better conditions in terms of remuneration. Yet, this market is not exempt of risk. For instance, the country's grid network system is fairly undeveloped creating some constraints in wind energy integration. The former may be mitigated by EU structural funds, which are going to be distributed in 2013 for investment in infrastructures. Additionally, Romanian political framework is still highly unstable, leading to increased regulatory risk. The country has a fiscal consolidation program under way, following the loan asked last year to IMF and EU to safeguard countries financial needs against the European sovereign-debt crisis. Since then, two

⁷⁵ Energy Strategy of Romania for 2007-2020

⁷⁶ GWEC information

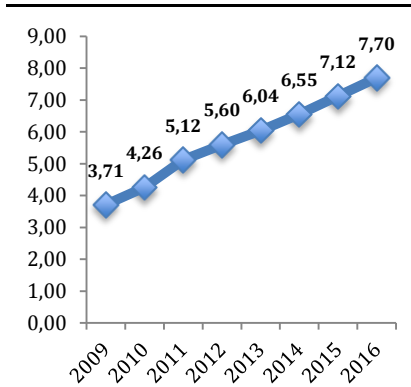
⁷⁷ Law 220/ 2008 regulates the GC system and sets yearly targets for RES production (excluding large hydro)

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governments fell and new elections shall be held in November. Nonetheless, this conjecture should not jeopardize new wind projects at least until the end of 2014, when ANRE dependent of market conditions may act. Given that the new legislation just came out and the fact the industry is still in a rather immature stage, it is of national interest to attract foreign investment to create jobs and to stimulate the economy. A regulation blow would undermine country's credibility. Moreover, we expect a higher growth in installed capacity during the next 3 years, as investors should intend to maximize the value creation taking the most of the time-limited two GC incentive scheme.

Until 2015, the GC price should reach its cap value due to high demand and low supply (penalty used as opportunity cost and hence as benchmark). Between 2015 and 2017, we assume the green certificate price should reach the lower boundary given the increased supply (more energy produced from renewable energy and thus higher abundance of GC's). From 2018 onwards, we assume an intermediate value between the cap and the floor set for the GC.

Chart 44: Evolution Forecast in Oil Imports (\$Bn)



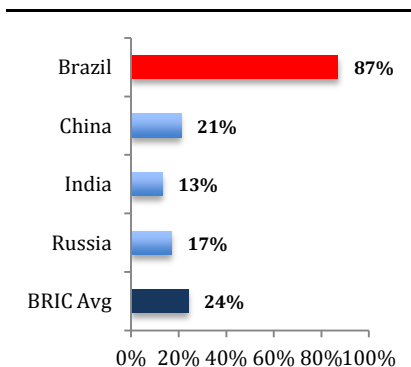
Source: IMF

Table 20: Romania Wind Energy Remuneration (2012)

	Green Certificate
Remuneration	Market price + 2 GC's until 2017
€/ MWh	Market price + GC's from 2018 on 28,2 < GC < 57,4 (adjusted to Euro inflation) Testing period: only one GC; Non-compliance penalty: 110
Duration	15 years Option to negotiate long-term PPA
EDPR installed capacity (MW)	285
Avg. ROIC	12,2%

Source: Company's Reports; Nova Analyst Estimates

Chart 45: BRIC's share of renewable sources in Generation 2010



Source: MME

Brazil

Brazil is one of EDPR's most promising markets. The country has been experiencing strong economic growth in recent years, consistently increasing electricity demand levels. Brazil is actually one of the leading countries in terms of renewable energy penetration on its electricity power generation mix, being the number one when compared with the BRIC counterparts. However, the country relies mostly on large hydro production, which are responsible for 70% and 92%,

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Table 21: Brazilian Power Generation Supply (TWh)

	2010	2020	Δ
Hydro	405	598	47,8%
Nuclear	15	24	65,1%
Natural Gas	31	40	28,5%
Coal	7	20	181,6%
Oil	15	9	-41,0%
Industrial gas	8	14	69,8%
Biomass	28	87	212,1%
Wind	2	37	1611,0%
Imports	34	38	11,2%
Total	545	867	59,2%

Source: Brazilian Energy Plan 2020

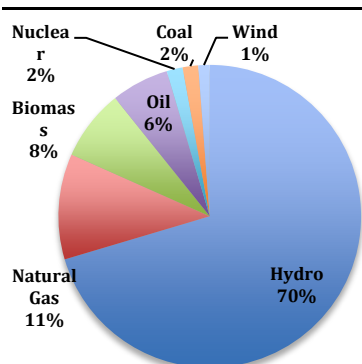
of total power installed capacity and of total electricity generated, respectively. For the 2010-20 period, MME⁷⁸ predicts an average GDP growth of 5%⁷⁹, which should foster electricity consumption up to 867,3 TWh (from 544,9 in 2010). Both the increasing electricity demand prospects and Brazilian excessive dependence on hydropower, made the federal government intend to diversify its power mix. Based on Brazilian Energy Plan 2020, to cover increased demand needs, MME plans R\$ 236 billion (€101,4 billion⁸⁰) investment in electricity infrastructure, from which R\$ 190 billion (€81,7 billion) correspond to generation facilities. The investment in small hydro, wind and biomass is expected to represent 36,4% of the generation infrastructure investment, only surpassed by large hydro (50,6%).

Regarding wind, Brazil presents very pleasant conditions for wind energy development. According to GWEC there is a 350 GW potential for wind development. Yet, wind's representativeness at a national electric system is still tiny. At the end of 2011, there were only 1.509 MW of wind installed, which generate 0,4% of total consumption. Under the 2010-20 Plan, Brazil expects to have 11,5 GW of wind install by 2020, meaning a 4,3% weight on total production by that year. Average load factor on current installed capacity varies from 26,9%, in the South region, to 30,7%, in the Northeast region⁸¹.

All the wind already installed is remunerated under the PROINFA programme, the first regulatory framework arranged for RES. The programme was set to promote renewable energy, to increase awareness over CO2 emissions and to diversify the energy mix. The target set was to install 3,3GW distributed between wind, biomass and small hydro. The projects approved have signed a 20-year PPA with Eletrobrás (Federal power holding company) and contractual revenues were fixed (may change according to production).

After the expiration of PROINFA (2011), the attribution of wind capacity is now based on 20-year PPA auctions, providing low risk profile and attractive wind resource. Between 2009 and 2011, there were awarded 7 GW to be put in operations until 2016. There are two types of auctions: the reserve tenders, which is set to guarantee security of supply and is bought by the government (output level reviewed every 4 years); and alternative energy tenders, which results in 20-year PPA base load contracts for winning bidders and are bought by national energy distributors. On the auctions, wind energy prices have

Chart 46: Brazilian Breakdown of Power Installed capacity in 2011 (117 GW)



Source: MME

⁷⁸ Ministry of Mines and Energy

⁷⁹ IMF expects an average 4,1% real growth rate for the period 2012-16

⁸⁰ Exchange rate R\$/€ = 2,327

⁸¹ Information gathered from MME electricity section monthly reports; The load factors presented are averages from the past three years

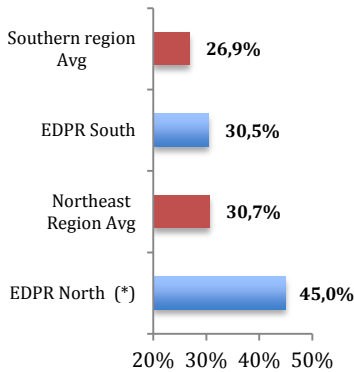
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consistently dropped and in an A-3⁸² energy auction (held in August 2011), it were awarded 1,9 GW with an average price of R\$99 (€42,5) per MWh, representing a new record low tariff⁸³.

EDPR's three wind parks (84 MW) are located on the southern region, are remunerated under PROINFA and mean a 5,6% in market share. Comparing with Brazilian south region average load factors, EDPR's installed capacity shows premium generation standards. During last December's A-5 auction, EDPR secured a 20-year PPA for 120 MW, with a tariff of R\$105 (€45,1) per MWh. This wind farm must start operations in 2015 and is located on the Northeast region. Such low tariffs are only possible due to the really high load factors⁸⁴ forecasted, much larger than the ones realized on the current installed capacity on that region.

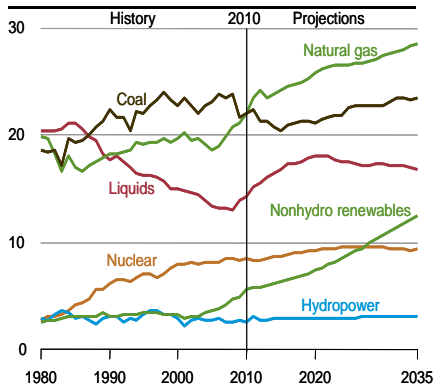
Given the excellent wind resources and the long-term stability of cash flows, the future of wind in Brazil looks promising. However, given the slow growth prospects in other markets and the nature of tenders, the competition is set to become more and more severe. Furthermore, given that 7 GW of wind were already attributed will leave the country short of the 2020 target. Being wind naturally a technology with low time-to-market, we believe in the case of an unexpected increase in demand, EDPR will have the opportunity to install additional MW. We do not expect, however, new installed capacity until 2015 other than the one already attributed.

Chart 47: EDPR vs Market Load Factor (average %)



Source: MME & EDPR's Reports

Chart 48: Energy production by Fuel (Quadrillion Btu)



Source: EIA

Table 22: Brazilian Wind Energy Remuneration

	PROINFA	Auctions
Remuneration R\$ /MWh (€ /MWh)	275,7 (112,7)	105 (€45,1) CPI adjusted
Duration	20-year PPA	20-year PPA
EDPR installed capacity (MW)	84	120 (to be set in operations by 2015)
Avg. ROIC	14,5%	8,7%

Source: Company's Reports; Nova Analyst Estimates

⁸² Auctions A-1, A-3 and A-5 mean time to market of 1 year, 3years and 5 years, respectively

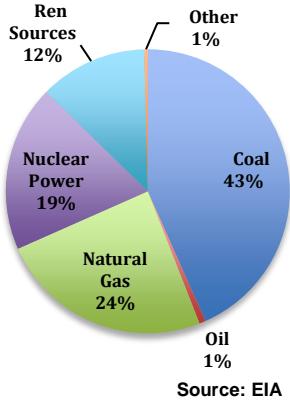
⁸³ Based in EDPR 2011 annual report

⁸⁴ Information provided by EDPR's Investor relations office

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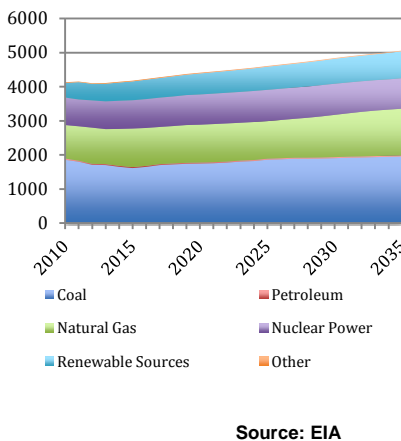
US

Chart 49: Total Electricity Generation (4.014 TWh) in 2011



US, at federal level, have never had a long-term strategy as far as renewable energy is concerned. The country is responsible for approximately 18% of the world's total CO2 emissions⁸⁵ and yet, it opted not to ratify the Kyoto Protocol, as it could damage national Interests. US are traditionally a major producer of coal, oil and natural gas. In that sense, energy autonomy was never an issue⁸⁶. Recent technology developments allowed for the exploration of shale gas, a commodity that US displays 482 trillion cubic feet in reserves, representing one fifth of total natural gas reserves⁸⁷. In 2008, the shale gas discovery allowed for a 35% increase in natural gas reserves, putting downward pressure on prices since. Thus, shale gas should enhance its relevance on US total energy production for the upcoming years and EIA predicts that, by 2035, Natural Gas should represent 30% of total energy production.

Chart 50: Evolution of total Electricity Generation (TWh) 2010-35



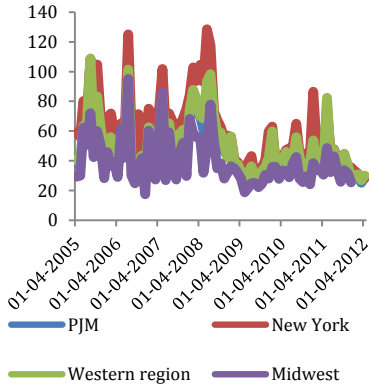
In terms of electricity generation, natural gas' role has also increase in recent years, partially thanks to shale gas breakthrough, a trend that is set to continue. Notwithstanding, in 2011, electricity generation relies mostly on coal, followed by natural gas and nuclear power. Renewable energy⁸⁸ accounts for 12% of total production. Going forward, natural gas and renewables should be the main responsible for the increasing demand⁸⁹, gaining relative importance at the expense of coal. Based on EIA forecasts, natural gas and renewable energy sources will signify 27% and 16% by 2020, respectively.

At the end of 2011, US had 133 GW of renewable power capacity installed, from which 46 GW are correspondent to wind. Nowadays, wind is responsible for 23% of renewable energy production, thereby avoiding 75 million tons of CO2 on an annual basis, and for the employment of 75.000 people⁹⁰. According to NREL⁹¹ 22% of US territory, which is not protected or urbanized, has over 30% load factors at 80m-high. This is translated into a theoretical generation potential of 38.500 TWh per year. The conditions are particularly windy in central states.

⁸⁵ Based on BNEF information (2009)
⁸⁶ According to EIA, energy autonomy by 2010 was 78%, a figure that is expected to improve to 87% by 2035
⁸⁷ Based on EIA information
⁸⁸ Includes large Hydro
⁸⁹ EIA expects total electricity generation to reach 5.056 TWh by 2035 in order to comply with the growing demand
⁹⁰ According to GWEC
⁹¹ National Renewable Energy Laboratory

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Chart 51: US Evolution on Day-ahead electricity price per region (\$/MWh)



Source: Bloomberg

Wind installed capacity grew tenfold over the past ten years and has been mainly pushed by both federal and local state policies.

Federal support to renewable energy has been mainly through tax incentives, even though some other forms emerged along the way (e.g. cash grants). These tax incentives are highlighted by the production tax credit⁹² (PTC), which provide a tax credit per each electricity unit generated, for a ten-year period (indexed to inflation). PTC has been the great catalyser for renewable energy development, in general, and for wind energy, in particular. Today, wind energy projects are entitled to receive \$22 per each MWh produced. Given that, wind operators' tax exposure is generally limited, financial institutions emerged as tax equity partners, who provide financing in exchange for tax credit pay-outs and other tax benefits (such like MACRS). After the financial crisis, IRR⁹³ required by tax equity providers leaped from 6%-6,5% to 8%-9% or higher as large financial institutions face enormous losses and tax credits were no longer necessary relatively to the pre-crisis. In 2009, as a response to lack of tax equity capital, under ARRA⁹⁴, US government launched a cash grant alternative, covering 30% of the initial project

At local state, incentives come mainly through the Renewable Portfolio Standards (RPS). The RPS consists in setting hard targets for renewable energy penetration in power generation. During the past year, ten states proposed the creation or an increase in local standards while five states opted to reduce or to eliminate such standards. In order to achieve these targets, Renewable Energy Certificates (REC) were created. Depending on each state's own RPS, state utility companies may either have a share of its electricity produced by green energy, or have the obligation to purchase REC, in the same proportion of RPS target for that year. Consequently, REC prices vary significantly across different markets. States, which are nearer to meet the targets, will tend to have lower REC prices as supply of renewable energy will be abundant; States with better wind conditions, for instance, will generate relatively more REC, thereby putting downward pressure on prices. Likewise, states diverged in which technologies should have the right to receive REC (some consider nuclear as renewable) and in what penalties to apply. All this has effect on REC prices.

At the moment, wind's situation is not promising. After ITC and Cash grants expire at the end of 2011, PTC is set to expire at the end of 2012 along with the MACRS tax benefit. Traditionally, Congress has extended PTC in 2-3 years time,

Table 23: RPS targets, Installed capacity per State & EDPR Market share

State	MW	Target	Year	Market share
New York	1.403	30%	2015	12%
Oregon	2.513	25%	2025	12%
Washington	2.573	15%	2020	4%
Iowa	4.322	-	-	9%
Minnesota	2.731	25%	2025	4%
Indiana	1.340	10%	2025	37%
Illinois	2.743	25%	2025	29%
Ohio	112	13%	2025	88%
Oklahoma	2.007	-	-	12%
Kansas	1.274	20%	2020	15%
Texas	10.337	-	-	4%

Source: AWEA & EDPR Information

⁹² Established by the 1992 Energy Policy Act
⁹³ Based on US Clean Energy-White Paper from BNEF
⁹⁴ American Recovery and Reinvestment Act

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Chart 52: US wind capacity Boom-bust cycle (MW)

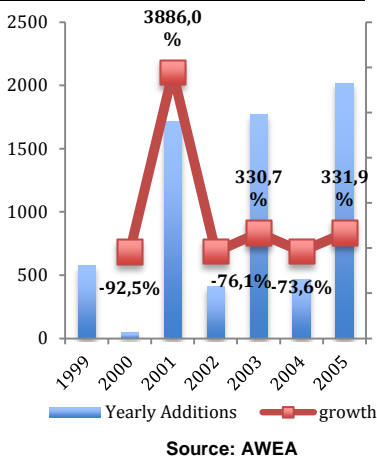
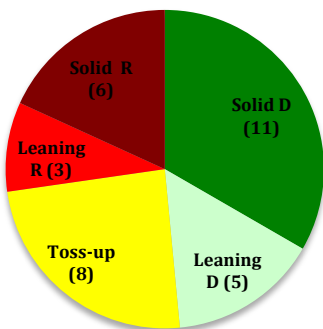


Table 24: Senate Composition (before elections)

	D	R	I
Fixed	28	38	1
Going for elections	21	10	2
Total	49	48	3

Source: The Green Papers & New York Times

Chart 53: Senate Elections - Polls



Source: New York Times

a short expiry date, which does not provide regulatory visibility, AWEA says. In fact, growth in wind-installed capacity has been characterised by boom-bust cycles. Every time the congress did not extend PTC (1999, 2001 & 2003) new installations nose-dived in following year, recovering with PTC extension. This fact, clearly states PTC's impact in decision making to whether or not to invest in wind.

In our view, the PTC should not be extended, at least in its present form. Senate's last voting on the subject, on March 14th, showed high disagreement between Democrats (D) and Republicans (R). 47 Democrats and 2 Independents (I) voted in favour, while 45 Republicans and 4 Democrats voted against the PTC extension. The minimum required to reach a qualified majority is 60 votes, so the results were insufficient. At the end of March, a new voting was performed, but the results were practically the same. Due to the senate elections, taking place on November 33 states will go for elections in order to select 33 new senators (the other 67 remain). Thus, 21 Democrats⁹⁵, 10 Republicans and 2 Independents will leave their seats. According to New York Times recent poll, 16 states are either leaning or solid democrats, while 9 states are either leaning or solid Republicans. The remaining 8 states are undecided. If we include the independent senator in the Pro-PTC extension group and exclude the democratic senator that voted against PTC, which remain, then democrats should win 31 new seats (out of the 33 going for elections) to attain a qualified majority in the congress after elections. Obviously, this outcome is highly unlikely.

Due to the pre-election pressures, where differences between parties tend to be stressed, we think a consensus prior to elections will be hard to reach. Generally speaking, Republicans have been arguing that current public deficit⁹⁶ does not give room to such type of tax incentives, while Democrats rely on the benefits of renewable energy and on the jobs it provides for American people. As the election results should probably lead to a balanced senate composition among democrats and republicans, without a qualified majority, we perceive the PTC should not be extended after the elections as well, at least at the present form.

Without the PTC, we assume EDPR will not install more wind energy for the upcoming years, other than the 215 MW⁹⁷ that will begin operations during 2012. At the moment, we recognize the difficulty of making a wind energy project

⁹⁵ Include three senators which voted against PTC extension during the last voting

⁹⁶ Based on IMF data-base, US's public deficit was 6,99% by 2010 and 6,35% by 2011, figures responsible for the first US rating downgrade in history (Aug 2011)

⁹⁷ We assume this 215 MW obtain PTC financing

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profitable only relying on REC and market prices. The large natural gas reserves, should result in higher utilization of this commodity on electricity generation, which will continue to drive prices down. Also, the lack of a clear national strategy for renewable energy may lead to the withdrawal of some state’s RPS, as the very much diverse renewable energy support among states, might lead to changes in relative competitiveness among them. Thus, without PTC, there would be an incentive to quit support. Under this scenario, long-term PPA’s will be much more difficult to close. As the exposure to the market and the REC’s price comprises too much risk, along with a low ROIC prospect, EDPR’s growth in US should stall.

ROE

ROE Wind Energy Remuneration

	France	Belgium (Wallonia)	Italy
Remuneration €/MWh	Feed-in tariff: 82, first 10 years; 82 descending to 28, depending on load factor	Market price + GC 65 < GC <100	Market + GC Feed-in from 2015 onwards
Duration	15 years	Long term PPA	Not specified
EDPR installed capacity (MW)	306	57	40 (under construction

Source: Company’s Reports; Nova Analyst Estimates

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Summary Table

Portugal	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	838	939	1.024	1.101	1.111	1.121
Load Factor (%)	29%	27%	27%	27%	28%	28%
Energy Output (GWh)	1.472	1.391	1.416	1.425	2.619	2.642
Generating Revenues (€m)	138	137	142	145	239	245
Opex (€/ MWh)	17	20	20	19	19	18
Ebitda Margin (%)	82,3%	79,9%	80,4%	81,1%	79,3%	80,0%
Ebit Margin (%)	58,2%	59,9%	65,0%	65,8%	61,1%	62,1%
Spain	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	2.050	2.201	2.311	2.311	2.311	2.311
Load Factor (%)	27%	25%	26%	26%	26%	26%
Energy Output (GWh)	4.355	4.584	4.977	5.062	5.087	5.112
Generating Revenues (€m)	344	378	401	409	411	418
Opex (€/ MWh)	17,3	18,4	18,7	19,1	19,4	19,7
Ebitda Margin (%)	77,7%	77,8%	76,7%	76,4%	76,0%	75,9%
Ebit Margin (%)	36,8%	42,6%	43,1%	43,7%	43,7%	44,5%
Poland	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	120	190	270	346	466	556
Load Factor (%)	28%	27%	27%	27%	27%	27%
Energy Output (GWh)	194	376	584	763	946	1.189
Generating Revenues (€m)	22	41	60	77	96	121
Opex (€/ MWh)	23,7	24,2	22,1	21,6	21,0	20,4
Ebitda Margin (%)	78,7%	77,8%	78,6%	78,6%	79,3%	80,0%
Ebit Margin (%)	53,6%	60,5%	60,0%	58,7%	62,4%	55,6%
Romania	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	90	285	339	339	459	549
Load Factor (%)	-	16%	24%	24%	24%	24%
Energy Output (GWh)	15	245	582	649	868	1.000
Generating Revenues (€m)	1	22	89	105	114	104
Opex (€/ MWh)	24,2	24,1	24,1	24,0	23,9	24,6
Ebitda Margin (%)	60,0%	72,8%	84,2%	85,1%	81,8%	77,0%
Ebit Margin (%)	-	5,8%	65,0%	68,9%	62,0%	53,9%
ROE	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	341	363	403	466	505	544
Load Factor (%)	23%	23%	23%	24%	24%	24%
Energy Output (GWh)	341	363	403	466	505	544
Generating Revenues (€m)	53	64	75	95	103	106
Opex (€/ MWh)	23,7	24,2	23,4	22,7	22,0	21,2
Ebitda Margin (%)	73,3%	73,1%	75,7%	77,0%	77,9%	77,7%
Ebit Margin (%)	52,5%	34,7%	36,2%	40,5%	40,0%	36,5%
US	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	3.223	3.421	3.637	3.637	3.637	3.637
Load Factor (%)	32%	33%	33%	33%	33%	33%
Energy Output (GWh)	7.689	9.328	10.061	10.043	10.043	10.043
Generating Revenues (€m)	276	306	384	401	403	408
Income from inst. partners (€m)	105,5	111,6	117,0	119,9	120,5	121,5
Opex (€/ MWh)	12,2	15,8	14,5	15,1	15,5	15,8
Ebitda Margin (%)	75%	65%	71%	71%	70%	70%
Ebit Margin (%)	19,9%	17,8%	26,9%	28,7%	29,7%	31,2%
Brazil	2010	2011	2012E	2013F	2014F	2015F
Installed Capacity (MW)	14	84	84	84	84	204
Load Factor (%)	25%	35%	32%	32%	32%	39%
Energy Output (GWh)	31	170	234	234	234	486
Generating Revenues (€m)	3	20	28	27	27	37
Opex (€/ MWh)	118,4	37,5	31,4	26,2	21,9	18,3
Ebitda Margin (%)	-13,3%	67,3%	73,3%	77,3%	81,0%	76,0%
Ebit Margin (%)	-55%	44%	54%	54%	46%	39%

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Financial Statements

Income Statement (€m)

	2010	2011	2012E	2013F	2014F	2015F
Revenues	951	1.069	1.295	1.378	1.514	1.561
Operating Costs	-238	-268	-319	-336	-372	-389
EBITDA	713	801	975	1.042	1.142	1.172
Depreciation, Amortization & others	-423	-453	-440	-447	-480	-484
EBIT	290	348	536	594	662	688
Financial income (expenses)	-169	-229	-243	-293	-257	-241
Pre-tax Profit	121	119	293	301	406	447
Income Taxes	-38	-28	-60	-58	-86	-96
Profit of the period	83	91	233	243	320	351
Minority interests	-3	-2	-5	-35	-61	-76
Net Income	80	89	228	209	259	275

Source: Nova Analyst Estimates

Balance Sheet (€m)

	2010	2011	2012E	2013F	2014F	2015F
Property, Plant and Equipment	9.982	10.455	10.667	10.425	10.978	10.877
Intangible assets & Goodwill	1.367	1.334	1.368	1.360	1.355	1.348
Other Fixed Assets	665	647	677	726	720	432
Total Fixed Assets	12.014	12.435	12.712	12.510	13.052	12.658
Operating Assets	357	353	420	426	435	415
Cash & Equivalents	424	219	200	433	451	437
Total Operating Assets	781	572	620	859	886	852
Total Assets	12.794	13.008	13.331	13.369	13.939	13.510
Equity	5.394	5.454	5.606	6.545	7.141	7.611
Financial Debt	3.534	3.826	4.060	3.430	3.313	2.645
Institutional Partnerships and Deferred Revenues	1.644	1.797	2.021	1.933	1.852	1.763
Other Fixed Liabilities	1.944	1.626	1.312	1.105	1.260	1.108
Operational liabilities	279	305	332	357	373	382
Total Liabilities	7.401	7.553	7.725	6.825	6.798	5.899
Total Equity and Liabilities	12.794	13.008	13.331	13.369	13.939	13.510

Source: Nova Analyst Estimates

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Table : Cash Flow Statement (€ m)

	2010	2011	2012E	2013F	2014F	2015F
Net Income	80	89	228	209	259	275
Depreciation	434	468	457	464	498	502
Change in Net Working Capital	29	30	-39	18	7	29
Cash Flow from Operating Activities	544	588	645	691	764	806
CAPEX	-1.781	-942	-669	-222	-760	-401
Change in other Fixed Assets	-212	51	-64	-41	-279	294
Change in other fixed Liabilities	293	-319	-313	-208	155	-152
Cash Flow from Investing Activities	-1.700	-1.209	-1.046	-471	-884	-259
Change in Equity	-14	-28	-76	730	337	196
Change in Debt	860	292	234	-630	-117	-668
Change in Institutional Partnerships & Deferred Revenues	290	153	224	-88	-81	-89
Cash Flow from Financing Activities	1.136	417	381	13	139	-560
Change in Cash	-20	-204	-20	233	18	-14

Source: Nova Analyst Estimates

Operating indicators and Ratios

	2010	2011	2012E	2013F	2014F	2015F
Wind Installed Capacity (MW)	6.676	7.483	8.067	8.283	8.572	8.921
Energy produced (GWh)	14.352	16.800	18.626	19.133	20.834	21.590
Average Load factor(%)	29,5%	29,5%	29,6%	29,4%	29,3%	29,4%
Generating Revenue/ MWh	58,4	57,7	63,2	65,7	66,9	66,7
Opex/ MWh	16,57	19,04	17,13	17,56	17,85	18,02
EBITDA margin	75,0%	74,9%	75,3%	75,6%	75,4%	75,1%
EBIT Margin	30,5%	32,5%	41,4%	43,1%	43,7%	44,1%
Growth ratios	2010	2011	2012E	2013F	2014F	2015F
Revenue Growth (%)	30,3%	12,4%	21,1%	6,4%	9,9%	3,1%
EBITDA growth	23,9%	31,4%	12,3%	21,8%	6,8%	9,7%
EBIT growth	25,6%	19,9%	54,1%	11,0%	11,4%	3,9%
Leverage ratios	2010	2011	2012E	2013F	2014F	2015F
Net Debt /Ebitda	4,4	4,50	3,96	2,88	2,50	1,89
Interest coverage ratio	1,74	1,83	2,50	2,19	2,88	3,10
Valuation ratios	2010	2011	2012E	2013F	2014F	2015F
EPS	0,09	0,10	0,26	0,24	0,30	0,31
P/E			15,16	16,56	13,34	12,57
EV/ EBITDA	12,65	11,26	9,25	8,66	7,89	7,69
EV / MW	1,35	1,21	1,12	1,09	1,05	1,01
Dividend Yield (%)			2,3%	2,1%	2,6%	2,8%
Profitability ratios	2010	2011	2012E	2013F	2014F	2015F
RoS	8%	8%	18%	15%	17%	18%
RoA	1%	1%	2%	2%	2%	2%
RoE	1%	2%	4%	3%	4%	4%
ROIC	3,2%	3,5%	4,6%	4,7%	5,0%	5,2%

Source: Nova Analyst Estimates

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Appendix

On the **pessimistic scenario**, we assumed, following Portuguese government default, EDP enter in financial distress and has no option but to sell some assets, among which EDPR is forced to sell 500MW in wind farms plus its North American business unit. Furthermore, feed-in tariffs are widely cut across the Iberian Peninsula, due to governments' incapability to continuing its support to renewables, meaning the wind turbines are on the market. We used the DCF and the SoTP method to value EDPR under this scenario. For the selling of wind farms⁹⁸ and EDPR NA we used a multiples approach. In order to value a possible EDPR NA deal, we used as comparable cases two transactions⁹⁹, held last year in North America, in the power generation industry. Then, we used the average Equity value to EBITDA, to assess current M&A appeal of the market.

Table: EDPR NA Comparable deals 2011

Type	Announced value (\$)	Equity value to Ebitda multiple
Company Takeover	4.737,72	5,01
Asset sale	1760,29	4,89
EDPR NA¹	2228,7	4,95

Source: Bloomberg

Table: EDPR Pessimistic Scenario SoTP Valuation

Markets	EV (€m)	% EV
Portugal	279	10%
Spain	1.305	46%
RoE	599	21%
US	0	0%
Brazil	147	5%
Terminal Value	481	17%
Total EV	2.810	100%
Market Value of Debt	2.871	-
Financial Assets held for trade	1.435	-
Minority Interests & Other	185	-
Equity Value	1.189	-
# Shares outstanding (m)	872,308	-
Pessimistic scenario Price	1,36	-

Source: Nova Analyst Estimates

⁹⁸ Based on data collection and taking into account the downward pressure on prices in a massive sell out, we assumed wind parks are sold at €1,3 million per MW

⁹⁹ The first one was a company take-over by Brookfield asset management and the second was an asset sale from Atlantic power

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On the **optimistic scenario**, we used two cases as benchmark for the possible acquisition of EDPR by EDP, which could be quite similar to this possibility. Those were the friendly acquisitions of Iberdrola Renovables and of EDF Nouvelles Energies, by their respective parent companies, Iberdrola and EDF. In both companies' valuations, there was a premium implied for their green shareholders. We perceive, EDP would follow a similar formula, for two reasons. First, EDPR initial investors paid €8 for each EDPR's share and now are valued almost 3 times less. In that sense, EDP's image could be affected if a premium was not provided. Secondly, this deal would allow EDP to capture some synergies. For simplicity reasons and for the fact, EDP should increase the burden over its subsidiary shareholders; the deal would be set in cash.

Table: EDPR Optimistic Scenario

	Announced value (€ m)	Equity value EBITDA multiple	Announced Premium
EDF Nouvelles Energies	5491,2	6,7	11,3%
Iberdrola Renovables	1602,3	5,5	13,8%
EDPR (Optimist Scenario)¹	5970,5	6,1	67%
# shares outstanding	872,308	-	-
Price Optimistic Scenario	6,84	-	-

Source: Nova Analyst Estimati

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SUMMARY OUTPUT SX5E on MXWO

<i>Regression Statistics</i>	
Multiple R	0,889001257
R Square	0,790323234
Adjusted R Square	0,789989354
Standard Error	0,015144216
Observations	630

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0,542884768	0,542884768	2367,086261	3,3151E-215
Residual	628	0,144030085	0,000229347		
Total	629	0,686914853			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-0,000961985	0,000603366	-1,594362794	0,111357923
X Variable 1	1,115280571	0,022923298	48,65271073	3,3151E-215

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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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