"EDP ENERGIAS DE PORTUGAL"

COMPANY REPORT

"ELECTRIC UTILITIES"

6 MAIO 2011

STUDENT: "ANA FERNANDES"

EDP – Back Foot

▪ EDP's regulated nature (electricity contracted generation, special regime, CMEC's, electricity and gas distribution, electricity supply of last resource and renewables regulation) allows the company to maintain stable and relatively predictable cash flows. Nevertheless, its exposure to changes in regulation is a risk factor in EDP's profile.

▪ Some of the areas operated by the company are only economically viable given the existing regulation (subsidies granted to renewable energies, special regime production, CMEC's). However, such regulation may translate into market inefficiencies and distortions.

▪ Its presence in Brazil is a strong growth driver, given the shortage of electric energy in this country, which will have to grow fast to meet the increasing demand and the economic development.

▪ The present economic scenario, namely the entry of the International Monetary Fund in Portugal, and the upcoming economic recovery measures may reduce incentives given to EDP's generation, specifically in wind and special regime production.

▪ Moreover, the company has suffered an increase in its cost of debt of 20% (from 4% in 2010 to 4.99% in May 2011 according to our calculations), due in part to a positive but not direct relation with the Portuguese Government Bond Yields (the 5-year maturity bond rose from 3.1% to 11.3% in the same period). To conclude, EDP´s Debt is around 10% of Portuguese GDP – about 168.1 Bn.

Company description

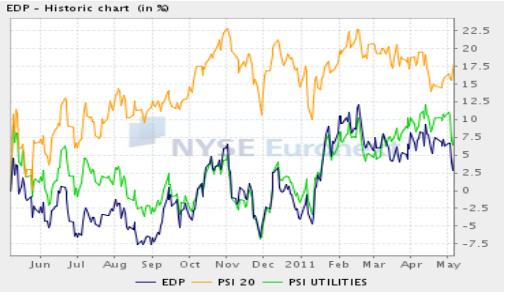
EDP Energias de Portugal is a Portuguese electricity and gas operator listed in the Lisbon Stock Exchange and present in the Iberia Peninsula. It also holds operations in the renewable energy sector in USA, Central Europe, Brazil and Iberian Peninsula. Moreover, with EDP Energias do Brasil it is now a player in the Brazilian electricity market. The markets where these operations take place are both regulated and liberalized.

Recommendation:	**BUY**
Price Target FY11:	**3.02 €**
Price (as of 6-Jun-11)	**2.56 €**

Reuters: EDP.LS, Bloomberg: EDP PL

52-week range (€)	2.38-2.92
Market Cap (€m)	9,945.78
Outstanding Shares (m)	3,656

Source: EDP website



Source: Euronext

(Values in € millions)	2010	2011E	2012E
Revenues	14,171	15,299	17,342
EBITDA	3,613	3,089	3,501
Net Profit	1,235	1,295	1,543
EPS	0.34	0.35	0.42

Source: Research Estimates

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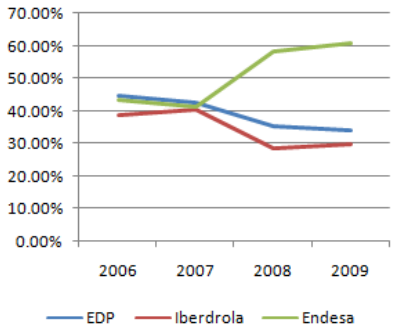
EDP's operations

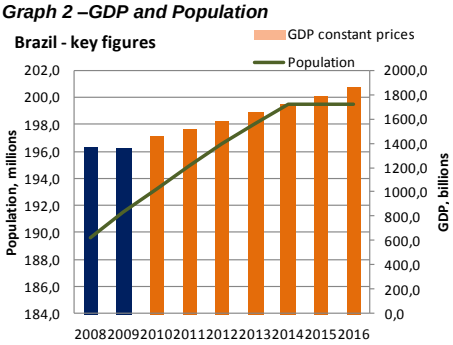
Graph 1 –Operating Expenses over Gross Profit for EDP and competitors



Source:EDP, Iberdrola and Endesa Annual Reports

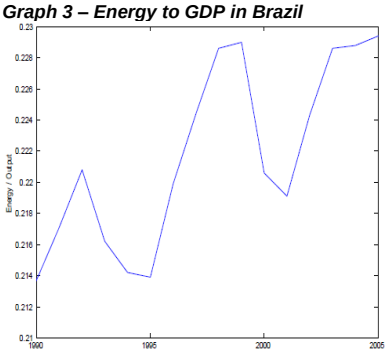
Strategic planning

Graph 2 –GDP and Population



Source:Energy International Agency

Graph 3 – Energy to GDP in Brazil



Source: Arbex and Perobelli, 2008

EDP Energias de Portugal is a Portuguese electric utility, listed in the Lisbon Stock exchange. It operates in the electricity generation, distribution and supply in Portugal, Spain and Brazil (through EdB Energias do Brasil), gas distribution and supply in Portugal and Spain and in the renewable sector, namely with its wind operator, EDP Renováveis, present in Portugal, Spain, Central Europe, Brazil and USA.

EDP's business strategy relies on three main pillars: focused growth: the company maintains a strong investment in hydro and wind, with a 3,5 GW hydro pipeline and several developing plants, which makes it the company with higher development in hydro in Europe, and ranking #3 in wind capacity worldwide; Moreover, the significant share of Brazilian operations in EDP's portfolio, gives it great exposure to a fast growing market; High efficiency: both in terms of operations and costs, given that EDP invests in longer useful life generating plants, with lower replacement and maintenance needs, and reduced CO2 emissions. More so, EDP's Opex plan aims at the reduction of operating expenses, with a target of Operating Expenses over Gross profit of 27% for 2012 (see Graph 1); Controlled risk: high reliance on regulated and stable cash flows (85% of EBITDA from regulated business segments or contracted activities), diversification of business and geographic areas and operations financially covered until 2012.

The economic scenario faced by EDP brings much challenge, as the Portuguese economy is now in a downturn. In fact, the national level of indebtness has reached historical levels and the political instability has brought the Portuguese state to ask for external help. The impact on EDP's cost of debt has already been felt, as in March 2011 the credit rating agency S&P downgraded the company to BBB. The Spanish economy presents the same problems, even though not as deep as in Portugal. The Spanish public debt also suffered a downgrade, as have 30 Spanish financial institutions (whose problem tightens with the lack of capital associated with these banks). However, there are also opportunities, for instances in Brazil, which is a fast growing market, with great potential for expansion (boost of population and strong and stable correlation between energy consumption and GDP growth increases the potential market – Graph 2, 3). The possible sale of up to 14% of EdB (EDP will maintain the control with 50.1% of the capital) should be seen as a way of reducing Net Debt, an opportunity to bring new and valuable shareholders (possibly Eletrobras and China Power

International) and a business opportunity (market expects a sale 35% above the current price).

For the valuation of EDP, we used a Sum Of The Parts model, to explore and study separately each of the company's businesses and their different profiles. Each business unit was valued through a Discounted Cash Flow model, resulting in a Free Cash Flow, which was discounted at a Weighted Average Cost of Capital (that takes the company's capital structure into account). The values obtained were then added up to achieve EDP's Enterprise Value, resulting in a target price for 2011 year end of 3.02€, which is translated in a 18% return, considering the current price per share.

Valuation

Sum Of The Parts

Why using the SOTP

EDP is composed by several business areas, which operate under very different conditions:

- subsidiaries separately listed;
- mature business segments with less risks associated with their cash flows;
- new investments;

For the valuation of EDP we have used a Sum Of The Parts valuation model, given the existence of several operational segments in this company, that are fairly different in terms of operations, regulation and risk profile. Considering this diversified nature of EDP, we studied each business area separately and summed up the Enterprise values of each one of them, considering annual Free Cash Flows up to 2016 and computing perpetuity afterwards. Note that, as we explore each area as one independent company, we also consider the different risk profile they assume, so we can adapt to the specificities of each business. For that reason, we have different risk measures for each business unit (betas) and not for EDP as a whole. The advantage of this model is that it enables one to assess the contribution of each segment to the company as a whole.

Furthermore, the valuation of each business area was achieved through a Discounted Cash Flow model, in which the time value of money is taken into account, and assuming that the company will continue to operate in the forecasted period, creating value. Through this approach, we forecasted the future cash (in and out) flows of each business area and added them up,

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discounting them to achieve each unit's Enterprise Value and then deducting Net Debt and minorities to obtain the Equity Value. We used real prices and rates and all Free Cash Flows are in Euro currency.

WACC

The discount rate used to discount the cash flows is the Weighted Average Cost of Capital. The cash flows obtained represent the Free Cash Flows to the Firm, as we used the cash flows before paying any interest (before considering the existence of debt in the company capital structure). For this reason, when discounting the cash flows, one needs to consider all the stakeholders of this cash flow to the firm. This usually includes debtholders and equityholders.

- ### Cost of debt

Cost of debt represents the opportunity cost that bondholders demand to be paid by EDP to have EDP´s debt at a certain moment in time. One way to determine EDP's cost of debt is to compute an average of the different current yields in each debt issue it has (for this, we equal the price of the bond in the market to their future cash flows discounted at the yield rate) and weight it with their respective nominal values. Taking EDP's debt nominal values, coupons (both bond issued and bank loans) and current yields we get a cost of debt of 5.42%.

Another way to determine this cost of debt is to take a risk free rate and add the default spread associated to a company with the same credit rating as EDP. According to S&P, the credit rating of EDP, BBB, has a default risk associated of 1.60%. Using as risk free rate the 5-year German bond (because it is default free and its maturity does not contain reinvestment risk) we get a debt cost of 4.56%.

Averaging the results obtained with both approaches we get a debt cost of 4.99%

- ### Cost of equity

The cost of equity of a given asset is the return on investment demanded by an investor for owning that asset. There are several ways of determining the cost of equity of an asset, for instances, through the capitalization model, using the Dividends per share for the next year, the current market value of the stock and the dividend growth rate. Another way of determining the cost of equity of a company is to use the Capital Asset Pricing Model (CAPM), which relates the return demanded by an investor on a stock as a compensation for time value and the level of risk of that stock. This model implies the use of a risk measure, the Beta, which relates the returns of a given asset with the returns of the market.

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We preferred this approach, as a way of also taking into account, the effect of macroeconomic variables.

In this case, to obtain EDP's beta (to measure how EDP's stock returns react to market variations), we ran regressions of several electric utilities sock returns to the market returns (we used the Eurostoxx 600 index to have a reasonable base for comparison of these companies), to figure the beta of each of those assets (table 1). We then performed beta shrinkage to reduce the estimation error, by using a weighted average of the betas obtained by the regressions and the market beta (which is 1). By doing this, we consider the fact that all agents operating in the market tend to react according to that market, in one way or another, which translates into the fact that the betas of the companies operating in the market tend to the market beta, in the long-run.

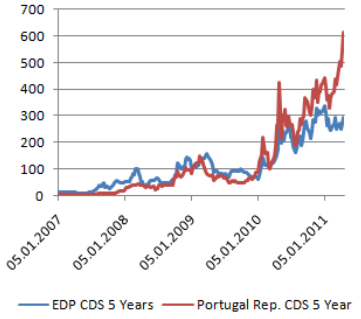
Table 1 – Industry Betas

Industry Betas	
EDP	0,66
EDPR	-0,06
Endesa	0,82
Iberdrola	1,04
Iberdrola Renovables	0,80
Enagás	0,64
Naturgas	0,83
Union Fenosa	0,25
REE	0,67
REN	0,47

Source:Research Estimates

For the risk free rate, we used the German Bund with a five-year maturity, because it is the one with less default risk associated and also because most of EDP´s cash flows are in Euros. Also, the maturity of 5-years was chosen since our chosen risk free has to be reinvestment risk free, meaning that if we used a short-term maturity, such as one month, there would be the risk of not being able to invest at the same rate after one month. A five-year maturity gives us more stability. Also, this valuation is assuming long term cash flows and therefore it would not make sense to use a short term risk free rate.

Graph 4 – 5 Year CDS Portugal and EDP



Source:Bloomberg

As for the market premiums, the historical standard interval is 4 to 6% and we assumed a value in between of 5% (even though a current implied Market Premium – forward looking rate considering current expected cash flows in all stocks - would be significantly lower). Still, the fact that EDP is a Portuguese based company brings additional risks, since Portugal now faces great political, economic and financial turmoil. This represents an additional risk for Portuguese companies (see graph 4 on the correlation of Portugal´s Republic CDS and EDP CDS values). Because of this, we added a country risk premium, calculated by subtracting the 5-year Portuguese Government Bond Yield to the German one (since the difference is assumed to be the default risk of that specific country).

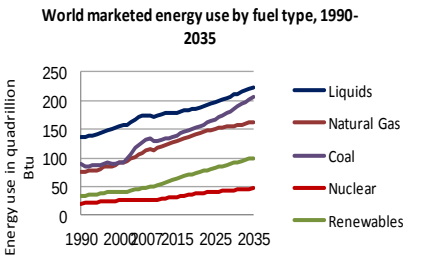
Energy Outlook

The world energy consumption tends to increase, as population grows fast and societies develop themselves with resource to energy. As population growth and society development are sharper in non-developed countries, it is expectable that

in those countries, energy consumption will grow faster, given the existence of a gap they have to overcome to reach the living standards of developed countries.

Furthermore, the share of each energy source in the contribution for energy generation will also evolve differently (graph 5). While social pressure towards a more sustainable and cleaner approach to energy production favours the political acceptance and investment in renewable sources, technical and economic issues (such as intermittence of production and high prices) will allow for an increase in energy generation from natural gas and coal (widely used in industry production).

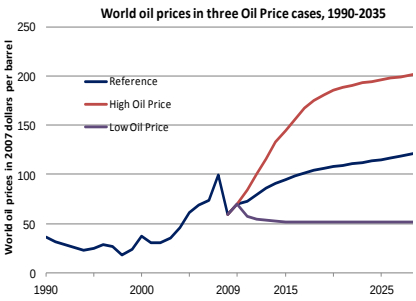
Graph 5 – World Traded Energy by source



Source:Energy International Agency

The recession that hit the world economy brought down the levels of energy consumption due to the slowdown on economic activity (production and consumption fell). Energy prices also went down, as the demand decreased. However, as the economy recovers, these levels start to pick up, and the natural trend is for energy demand to increase in the future, as well as energy prices (see graph 6).

Graph 6 – World Oil Prices Forecast



Source:Energy International Agency

The security of energy supply in the future may also trend in an opposite direction as the one of today, since China´s external politics of supporting corrupt governments in exchange for energy commodities easy access may boost intra country instability. Furthermore, the disaster of Fukushima may prevent public opinion of allowing more nuclear power plants centrals, which will in the long term, create more pressure on energy prices such as oil and coal. In the short term, nuclear energy shortage and Middle East political and social upward tensions (several oil companies, such as Shell in Libya were forced to cease their operations and BP is reassessing its expansion plans) have brought gas and oil prices to sudden increase due to fears of energy shortages.

In the case of Brazil, the country experiences a sharp population expansion and a much accelerated economic development. Such increases only come with a boosting demand for energy. However, the installed generation capacity is not enough to match this increasing demand, and the country experiences energy shortages. To overcome such shortages, the country's national energy agency (ANEEL) has proposed a tariff and consumption plan, in which for different hour consumptions, different prices are charged. This would smooth the consumption levels during the day and avoid blackouts. Such an approach may be an opportunity for electric utilities operating in this country, as they can easily smooth their electricity production along the day hours, avoiding generation pauses and picks.

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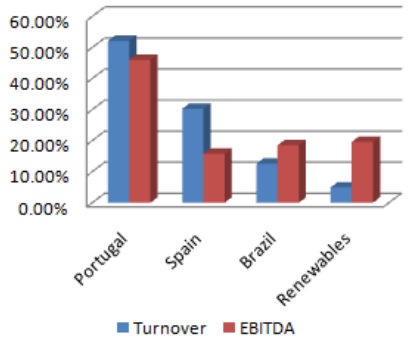
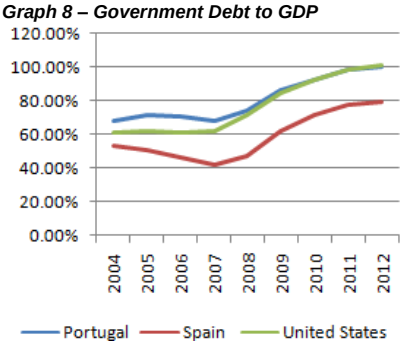
Economic Scenario

Graph 7 – Geographical Distribution of EDP



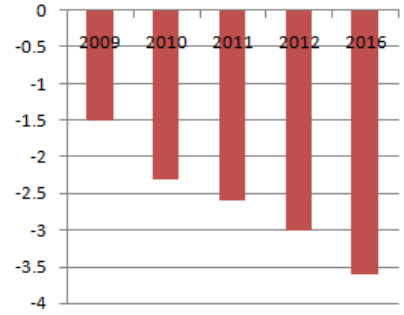
Source:EDP, Data for 2010

Graph 8 – Government Debt to GDP



Source: IMF Economic Outlook 2010

Graph 9 – Balance on Current Account Brazil



Source: IMF Economic Outlook 2010

As we can see in Graph 7, EDP has a geographical distribution strongly concentrated in Portugal, Spain, Brazil and the USA (where 51% of the Installed Capacity of EDPR is in). Therefore these countries' economic outlook is relevant for EDP. By analyzing Graph 8, we conclude for a significant deterioration of Public Finances after 2007. In Portugal, adding to the serious problem on Governmental Debt, we can see through table 2 that GDP forecasts are negative until 2012. The political and social instability has brought to the country a financial aid package lead by the IMF, which will strongly intervene in government expenses and social benefits but also promoting the privatization of several companies, mainly EDP in which the government has a share of 25.7%. Portugal is seeing its bond rates hedging higher and its rating dropping (example from A- to BBB by S&P). Spain suffers from similar structural economic problems as Portugal (such as lack of competitiveness); it has extremely high unemployment rates (above 20% until 2013) and has suffered a contagion effect (as we can see by its CDS on a 5-year maturity increasing to 216 bp in 05/01/11).

Brazil is an economy in clear expansion. The new president Rousseff has continued the policies of its predecessor, mainly to what concerns social programs for example in the global access to education or water and energy. The markets estimate a pressure on the Balance Current Account (graph 9).

Moreover, the USA will most likely have to proceed to a fiscal consolidation in the next years. Still, GDP growth will remain above Europe´s average. The 2012 elections may represent a risk for EDPR since in case a republican candidate wins, the government support through subsidies will most likely decrease. The economic projections for countries where EDP operates are as follows:

		2010	2011	2012	2013	2014	2015	2016
Portugal	Real GDP	1.40%	-1.50%	-0.50%	1.20%	1.20%	1.20%	1.20%
	Inflation	1.40%	2.40%	1.40%	1.80%	1.80%	1.80%	1.80%
Spain	Real GDP	–0.1%	0.80%	1.60%	1.70%	1.70%	1.70%	1.70%
	Inflation	2.00%	2.60%	1.50%	1.80%	1.80%	1.80%	1.80%
USA	Real GDP	2.80%	2.80%	2.90%	2.70%	2.70%	2.70%	2.70%
	Inflation	1.60%	2.20%	1.60%	2.00%	2.00%	2.00%	2.00%
Brazil	Real GDP	7.50%	4.50%	4.10%	4.20%	4.20%	4.20%	4.20%
	Inflation	.00%	6.30%	4.80%	4.50%	4.50%	4.50%	4.50%

Table 2 – World Economic Outlook, April 2011, IMF

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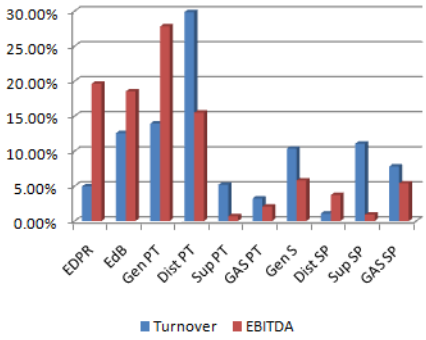
Company overview

Company description

EDP is an electric utility operating in the electricity generation, distribution and supply, and gas distribution and supply in Portugal and Spain. EDP operates both in the regulated and liberalized markets in Iberia, which are regulated by ERSE (Entidade Reguladora dos Serviços Energéticos) in Portugal and CNE (Comisíon Nacional de Energía) in Spain. It is listed in PSI 20 (weight of 13,3%), PSI Geral (weight of 16,2%), DJ Eurostoxx, DJ Eurostoxx Utilities, DJ Stoxx 600, Euronext Top 100, S&P Euro Utilities and MSCI EURO indexes, in the Lisbon Stock Exchange.

Moreover, EDP has activities in the renewable energies sector through its 77.5% participation in the wind operator EDP Renováveis, which is present in the Iberian Peninsula (Portugal and Spain), Brazil, Belgium, France, Italy, Poland, Romania, UK and USA, with Renewables Europe, Renewables Brazil and Renewables North America. It is listed on Dow Jones and PSI 20 indexes.

Graph 10 – Business Distribution of EDP



Source:EDP, Data for 2010

Furthermore, EDP has entered the Brazilian electricity market with its 64.8% participation in EdB Energias do Brazil, which performs electricity generation, distribution and supply activities in the states of Espírito Santo, Mato Grosso do Sul, Tocantins and Ceará (generation), São Paulo and Espírito Santo (distribution) and Santa Catarina, through its participation of 45% in EDPR Brazil. EdB Energias do Brasil is listed on the Bovespa in São Paulo Stock Exchange.

In graph 10, we can conclude for a low profitability of the distribution business in Portugal as opposed to EDPR, EdB and Generation in Portugal. Also, since 1976, the company has suffered several privatizations stages and nowadays, the Portuguese state participation in the company does not exceed 25%.

The operating environment in the Iberian Peninsula is highly regulated by the Portuguese and Spanish states through their regulating entities (ERSE and CNE), including the regulation of renewable energy generation and other types of energy such as mini-hydro. The creation of MIBEL, an Iberian electricity market, shows the regulators' goals of making it a more competitive market, with electricity prices set by supply and demand equilibrium. EDP's competitors are mainly Spanish companies Endesa and Iberdrola, which also have operations in electricity generation, distribution and supply, gas and renewable energies.

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	EBITDA (000 €)	TURNOVER (000 €)	P/E	ROA	3Yr Av Gr	ROE	3Yr Av Gr	Oper Marg	5Yr Av Gr	Dvd Yld	Assets/ Equity
EDP	3362948	12198183	8.53	2.77%	2.91%	11.67%	15.19%	16.13%	3.30%	6.55%	4.03
IBERDROLA	4509183	31340433	11.24	3.21%	3.18%	9.98%	10.43%	18.51%	-6.90%	3.65%	3.09
ENDESA	1775000	31847000	7.50	5.37%	8.20%	19.24%	36.81%	15.76%	-9.73%	4.39%	3.42
GAS NAT FEN	870000	19902000	10.23	2.65%	4.19%	10.89%	13.96%	7.46%	-	5.93%	3.91
ENAGAS	205800	975795	11.31	5.22%	5.54%	20.06%	19.67%	57.25%	2.26%	5.24%	3.97
GALP EN	830000	12008000	22.49	4.94%	4.40%	8.92%	14.00%	6.88%	-	1.37%	3.48
Average	**1925489**	**19252682**	**11.89**	**3.84%**	**4.80%**	**14.37%**	**19.21%**	**23.02%**	**-2.77%**	**5.15%**	**3.68**

Table 3 – Bloomberg (2009)

By analyzing table 3, we conclude for EDP being a medium size among its main competitors in terms of Turnover. Still, the company is the most financially leveraged. On the other hand, it presents a good operation margin, with a good annual growth. Also, EDP is the one with higher share of Brazil in its operations portfolio (19% of 2010 EBITDA and 1.7 GW installed capacity), which makes it the company with the largest presence in a fast-growth country. It is the single electricity distributor in Portugal, with a generation capacity of 9.9 GW. In Spain, EDP's installed capacity is 3.5 GW and it represents 16% of the EBITDA in 2010. EDPR is the 3rd world wind operator, with an installed capacity of 6.2 GW in 11 countries (Portugal, Spain, Belgium, Brazil, Poland, France, Italy, Romania, UK, USA, Canada).

Table 4 – EDP's current shareholder structure

Shareholder	No. Shares	% Capital	% Exercisable Votes
PARPÚBLICA - Participa	915.977.598	25,1%	24,1%
Iberdrola Energia S.A.U	248.437.516	6,8%	5,0%
CAJA DE AHORROS DE	183.257.513	5,0%	5,0%
JOSÉ DE MELLO - Soc.	176.340.958	4,8%	4,8%
Senfora SARL	148.431.999	4,1%	4,1%
Grupo BCP + FUNDO DI	123.241.223	3,4%	3,4%
BANCO ESPÍRITO SANT	99.173.971	2,7%	2,7%
SONATRACH	81.713.076	2,2%	2,2%
Norges Bank	97.247.888	2,7%	2,7%
AllianceBernstein L.P.	76.553.268	2,1%	2,1%
CAIXA GERAL DE DEPÓ	23.365.116	0,6%	0,6%
EDP (Acções próprias)	33.324.941	0,9%	-
Restantes Accionistas	1.449.472.648	39,6%	-
Total	3.656.537.715	100,0%	

Source:EDP

Shareholder structure

EDP´s current Shareholder Structure is presented on Table 4. More so, the following Table will show the several privatization stages that EDP has suffered:

YEAR	Stocks Sold	% of Capital	Price	Implicit Value (€)	Nº Shares (MM)
1997	179970000	29.99%	2.16	1.296.216.072	600
1998	Strategic Partnership between EDP and IBERDROLA; Possibility of acquiring 2.25% of the other company´s capital;				600
1998	97100000	16.20%	4.12	2.469.456.790	600
2000	600000000	20%	3.1	1.860.000.000	3000
2004	Capital Increase of 656537715 shares	18%	1.84	1.345.244.316	3656.54
2005	Bond Issue of EUR 572.8 million with exchange price of EUR 3.58; Price never achieved during the exercising period;				3656.54
2007	Bond Issue of EUR 1015 million with exchange option from 18/12/12 to 18/12/14 at EUR 6.70				3656.54

Table 5 – Source: EDP

EDP's shares are classified into shares of type A and shares of type B. Type A shares are shares with limited voting rights and are held by private investors,

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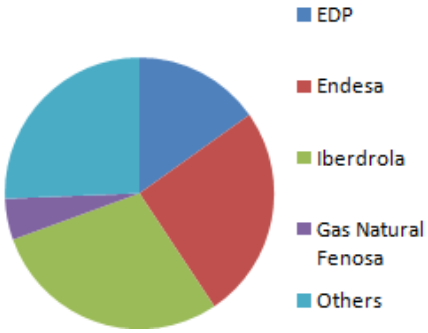
which means that any investor holding some share of EDP's capital cannot have more than 5% exercisable vote rights. Type B shares have no limited voting rights and these are held by the Portuguese state. Through its Parpública and Caixa Geral de Depósitos participations, the Portuguese state holds 25.7% of EDP's capital, with 24.7% voting rights. Given this, the state is the largest shareholder in EDP's shareholder structure. Because of EC legislation favoring a free and competitive market and also due to the requirements of the IMF/EFSM, the 8th stage of reprivatization of EDP may occur this year. Still, after the failure of December 2010, when Parpública failed to sell, through convertible bonds, 10% of EDP´s capital (in an operation valued around EUR 980 millions), it is likely that the solution may now be through the entrance of new strategic partners. EDP has 55% of its revenues coming from outside Portugal and this reinforces the idea of EDP´s CEO that the company does not require the state as a granter of stability as it did in the past. The focus is now on a larger base of long term stockholders and in particular, those with access to new markets. We project some difficulties in this process, mainly due to a negative market sentiment towards Portuguese Government Debt and its correlation with EDP´s risk.

Graph11- Market Share for Power Generation in Iberia 2009 (Installed Capacity)



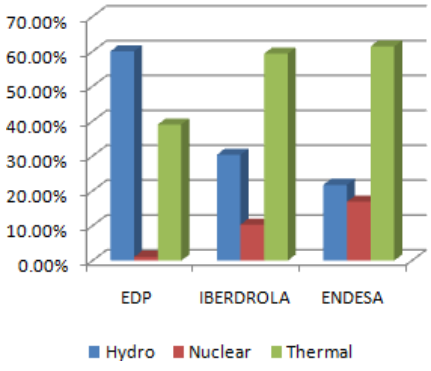
Source:EDP, Endesa, Iberdrola, Gas Natural Fensa

Iberian Operations

Generation

EDP holds operations in the electricity generation in the Iberia Peninsula. Its installed capacity was around 9,900 MW for Portugal and 3430 MW for Spain in end 2009. Electricity generation is operated by EDP Produção in Portugal and by Hidroeléctrica del Cantábrico in Spain and overall, it has seen an increase in market share since 2007 (graph 11). More so, EDP has power generation much more based in hydro than its competitors (Graph 12). The existence of CMEC´s (with 4095 MW of hydro plants against 3069 MW in thermal plants under CMEC), creates an artificial situation in which EDP is compensated above market remuneration. Hydro sources production volatility is significantly higher, since they are dependent on climacteric conditions (see graph 13 and 14).

Graph 12- Energy Sources (Installed Capacity) 2009



Source:EDP, Endesa, Iberdrola

According to Direcção Geral de Energia e Geologia, the total electricity consumption in Portugal in 2010 was 52.2 TWh, 4.7% higher than in 2009 and 3.2% higher than in 2008, having EDP generated around 34.3 TWh. In Spain, the electricity consumption totalized around 260 TWh, 3.2% higher than in 2009, having EDP generated 15.9 TWh.

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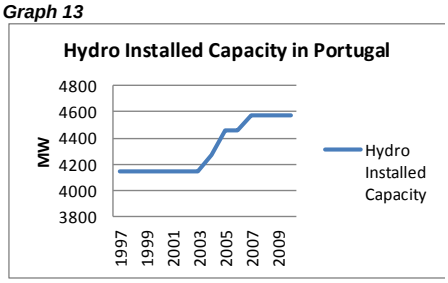
- Hydro

In Portugal, around 52.4% of EDP's installed capacity is thermal (coal-fired power, fuel and natural gas) and 47.6% is hydro power. Hydro power represents a clean energy source, as the level of carbon emissions produced during hydroelectricity generation is zero. Given the goals set by the European countries of increasing the use of clean sources of energy (20% less carbon emissions in 2020) and given the unused hydro potential in Portugal, this becomes an economic viable way to achieve European environmental goals. In fact, the Portuguese government approved in 2007 a national plan for hydro plants (8 new hydro power plants) to explore the unused hydro potential in Portugal (around 50%) and intends to increase this capacity to 8,600 MW in 2020.

Graph 13

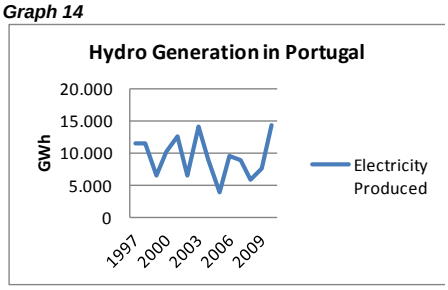


Source:EDP

Currently, EDP has 5,005 MW of hydro installed capacity, of which 4,579 MW in Portugal, distributed by 61 power plants.

These hydro power plants provide an important source of electricity generation, decreasing the national needs for energy imports (fuels). EDP uses these plants coordinated with wind power as way of smoothing the production of electricity, so that it matches the levels of consumption at any hour of the day (the levels of consumption are variable during the 24 hours day, for instances, during the night, the consumption drops). In periods of higher wind generation, the dam fills up with water, which is used to produce electricity during higher consumption hours.

Graph 14



Source:EDP

EDP aims at increasing its hydro installed capacity in 70% in Portugal and a total of 57% in the Iberian market, enhancing its efficiency in terms of carbon emissions and consequently reducing costs with CO2 emissions licenses. From the 8 hydro plants in the national plan for hydro power, EDP will be responsible for the operations of 3 of them, predicted to start operations in 2015 and 2016, while Endesa and Iberdrola will operate the other 5, starting operations in 2018. Foz Tua, Fridão and Alvito are the 3 power stations EDP will operate, representing 25% of the 2,913 MW of its new installed capacity at that time. The company has two more projects under construction, Baixo Sabor and Ribeiradio Ermida, which will start operations in 2015, and will have an installed capacity of 171 and 77 MW respectively. In addition, several power reinforcements are already being made, namely Picote II (2011), Bemposta II (2011), Alqueva II (2012), Venda Nova III (2015), Salamonde II (2015) and Paradela II (2017). The

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predicted installed capacity evolution is presented in the table 6 below:

Table 6 - EDP's Installed Capacity Evolution

Year	2010	2011E	2012E	2013E	2014E	2015E	2016E	2017E
Installed capacity MW	4,704	5,141	5,397	5,645	5,645	6,836	7,299	7,617

In total, EDP will have in 2017, 72 hydro power stations and a total of 7,617 MW of installed capacity in hydro power, (EDP predicts to invest 3,000 Million € in this 2,913 MW increase).

Overall, the electricity produced by hydro generation has increased with the increase in installed capacity. However, this type of generation highly depends on the level of rainfall in a given year. Portugal is a country with moderate level of rainfall which is a driver to the increase of hydroelectricity generation.

Hydro generation costs are generally lower than other types of generation, as costs such as CO2 emissions costs are eliminated as well as combustibles. In the case of conventional regime production, the production is sold in the retail Iberian market and all electricity sources are remunerated with the price established in the Iberian Market, which are determined according to supply and demand laws, resulting in the equilibrium price. The average price in 2010 was 37.33€/MWh, according to OMEL. Considering the load factor, the number of hours per day, and the number of days per year and the installed capacity of each plant, we obtain the electricity generated in one year. Taking the product of the average price operated by EDP (price in the Iberian market and price of bilateral contracts) and the electricity generation in one year; we achieve the turnover corresponding to each type generation.

- Thermal

Thermal energy is the one generated from heat. EDP's thermal generation includes coal-fired plants, fuel oil, natural gas and nuclear. These technologies have an efficiency of 35% to 40%, or 45% to 55% in the case of combined cycle gas turbine (CCGT). The equipment used has an average lifetime of 30 years, except for nuclear plants, which can reach 45 years. The latter type of plants does not have any carbon emissions, which reduces the costs with carbon emissions licenses, however, the costs with operation and maintenance are higher (6 to 10€/MWh against a maximum of 3€/MWh in the other types of thermal generation. The lowest cost type of generation is natural gas electricity generation, with 0.5 to 1€/MWh. Tables 7 and 8 show the distribution of EDP's

Table 7 - EDP's Thermal Power Plants in Portugal

Coal	Natural Gas
Sines(1256MW)	Energin(43,7MW)
	Ribatejo(1200MW)
Fueloil	Carregado(750MW)
Setúbal(1000MW)	Carriço(30MW)
Carregado(750MW)	Soporgen(67,4MW)
	Mortágua(9MW)
Diesel	Lares(862MW)
Tunes(199,2MW)	Fisigen(24MW)
Cogeneration	**Biomass**
Energin(43,7MW)	Rodão(13MW)
Carriço(30MW)	Mortágua(9MW)
Soporgen(67,4MW)	Constância(13MW)
Fisigen(24MW)	Figueira da Foz(30MW)

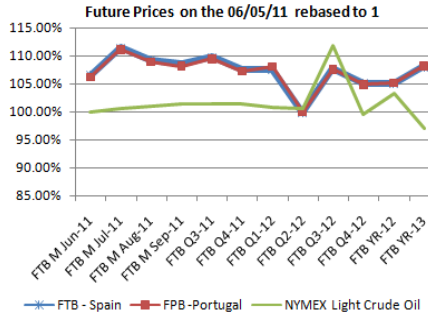
Source:Research Estimates

Table 8 - EDP's Thermal Power Plants in Spain

Power Plant	Source	MW
Aboño I	Thermal	342
Aboño II	Thermal	536
Caño	Thermal	1
Castejón I	Thermal	425
Castejón III	Thermal	418
La Barca	Thermal	56
La Florida	Thermal	8
La Malva	Thermal	9
La Ribera	Thermal	8
Laviana	Thermal	1
Miranda	Thermal	65
Priañes	Thermal	19
Proaza	Thermal	48
Salime	Thermal	79
San Isidro	Thermal	3
Soto de Ribera I	Thermal	0
Soto de Ribera II	Thermal	236
Soto de Ribera III	Thermal	346
Soto IV	Thermal	426
Soto V	Thermal	428
Tanes	Hydro	130
Trillo (1.100MW)	Nuclear	156
Total		3.740

Source:Research Estimates

Graph 15 – Evolution of Oil and Iberian Electricity Prices (Baseload Power)



Source:OMIP

thermal power plants and their installed capacities, in Portugal and Spain (where EDP is present with Hidroeléctrica del Cantábrico), respectively.

Thermal energy sources use fossil fuels as an input to electricity generation. In result, this type of generation is especially exposed to oil markets, resulting in a high correlation between the oil prices and the electricity prices. The operating prices in oil markets are now stabilizing, according to reports published by ERSE and oil futures, consequently leading to the stabilization of electricity prices (at 45€/MWh, according to ERSE) (refer to graph 15).

According to Graph 16 and 17, thermal installed capacity has been increasing while electricity generation has been decreasing. The strong investment in cleaner sources such as wind power (1,690 and 1,232 million Euros in 2009 and 2010) or hydro may explain this. Because the production of energy through wind power (and at a lower extent hydro) suffers from lack of continuity, there is a necessity of availability of traditional sources such as cogeneration centrals. This brings usage factors down (decreasing thermal electricity generation), while the necessity for installed capacity remains. With HC generation capacity, EDP generation in Spain in 2010 was as shown in table 9.

The electricity generation activities remuneration scheme includes:

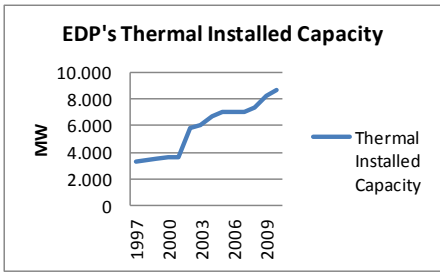
- CMEC's (only in Portugal)
- Special Regime Production
- Conventional Regime Production.

  - CMEC's

Before the liberalization of the electricity Iberian market, some power plants in Portugal were operated under Power Purchase Agreements (PPA or CAE – Contracto de Aquisição de Energia). These plants were part of projects financed by loans obtained from banks, which funded specific projects (Project Finance) and not EDP itself. These initiatives were part of an attempt of the Portuguese government to develop the national electric system, and as a protective measure of this initiative, the electric national system was obligated to buy the electricity produced by these plants, and EDP was obligated to feed the national electric system with the electricity generated in these plants.

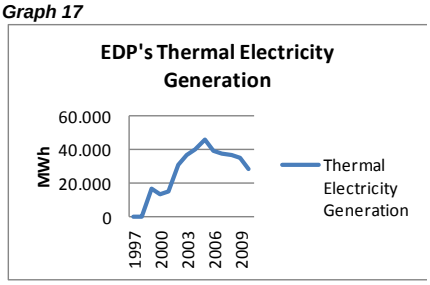
However, as the electricity market became more competitive, more liberalized and more in sync with the Spanish market (creation of MIBEL in 2004 joining the two markets into one single Iberian market), the existence of such a binding

Graph 16



Source:EDP

Graph 17



Source:EDP

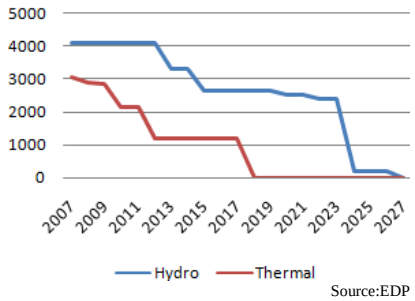
Table 9 - EDP Generation in Spain

Power Plant	Regime	Source	GWh 2010
Aboño I	Conventional	Thermal	1.069
Aboño II	Conventional	Thermal	2.327
Castejón I	Conventional	Thermal	1.423
Castejón III	Conventional	Thermal	1.316
Centrais Hídricas HC	Conventional	Hydro	1.038
Cogeradores HC (Industriais)	Special	Thermal	356
Parques eólicos EDPR	Special	Wind	4.355
Pequena Hídrica	Special	Hydro	7
Resíduos HC	Special	Thermal	553
Soto de Ribera I	Conventional	Thermal	213
Soto de Ribera II	Conventional	Thermal	634
Soto de Ribera III	Conventional	Thermal	1.384
Soto de Ribera IV	Conventional	Thermal	64
Trillo (1.100MW)	Conventional	Nuclear	1.190
Total			15.930

Source:EDP

relation in the Portuguese market ceased to make sense and these PPA's were terminated in July 2007. Nevertheless, the loans to the banks still existed, and to repay these loans, CMEC's were created, as a way of preserving the value of the PPA's (as an example, in 2007 the forecasted compensation was of 833 million Euros), adding to the NPV of the gross profit in the market segment, and at the end, significantly reducing market exposure. This compensation is achieved through a fee, charged to the consumers in their electricity bills, whether they are EDP's clients or not, for as long as CMEC's remain (we can see the evolution in MW under this contracts in Graph 18). In case the prices practiced in the market are higher than what they should be (the pool price is assumed to be 50€/MW rebased to 2007 prices) to obtain the NPV of the PPA contracts, the consumers should be paid the difference. In practical terms, only until 2011 the old PPA´s gross profit was above the gross profit of the CMEC contracts, having those difference been hedged in the financial markets

Graph 18 - EDP Plants under PPA/CMEC contracts and its evolution (in MW)

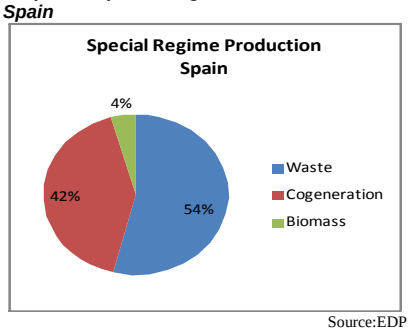


Source:EDP

- Special Regime Production

With the goal of increasing national electricity production to decrease the energy dependency (on fuels and fuel derivates), and increasing the share of energy generated from renewable sources to enhance generation efficiency in terms of CO2 emissions, the Portuguese government created the Special Regime Production, similar to the Spanish special regime. According to the Portuguese regulation (Decreto-Lei 189/88, de 27 de Maio), electricity producers may sell their electricity to the Last Resource Supplier, which is obligated to buy this electricity. The projects under Special Regime Production benefit from special regulation and better tariffs and include wind, mini-hydro and heat and electricity combined cogeneration technologies. EDP operates the in Special Regime Production in Portugal, with a 200 MW capacity distributed as shown in graph 19.

Graph 19 -Special Regime Production in Spain



Source:EDP

In Spain, the government has implemented the special regime production, as in Portugal, with the goal of incentivizing the reduction of electricity imports and the development of clean energy sources (renewable sources) and of the Spanish electric system itself. The power plants included in this regime are the ones with installed capacity under 50 MW and powered by cogeneration or renewable sources. For power stations operating with biomass or biogas and with an installed capacity over the special regime production limit, the regulation sets a premium added to the price of the electricity generated in these plants, as a way of incentivizing the production from these sources. The total Special Regime Production is 896 MW, while EDP operates only around 155 MW.

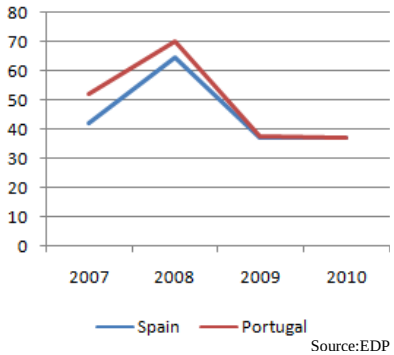
This special regime pressures energy production costs in cogeneration centrals, since, while priority is given to the special regime production, the necessity of availability of traditional sources such as cogeneration centrals is not reducing, mainly due to the lack of regularity on the wind power energy production. This brings the usage factors of cogeneration downwards.

When under special regime production, the producer may choose to operate with fix tariffs applied to this regime, or with the market prices. This means, that the producer whether sells the electricity to the Spanish electric system (to last resource supplier) at a fix regulated tariff (regulated market) or operates under market conditions in the Spanish electricity pool (liberalized market). In the latter case, the price has a cap price and a floor price, to reduce the volatility patent in the electricity market. This is a way of protecting the producer from the impact of price changes for instance in oil international markets, which are not directly connected to the renewable energy costs (Real Decreto 661/2007).

- Conventional Regime Production

In Portugal, the generation of electricity is based on licenses granted by the Portuguese state, but fully operated by private companies. The electricity related activities are operated under free market principles, and the state only intervenes to ensure the electricity supply to all consumers. The electricity generated may be either sold in the retail market or under special regime production. The tariffs paid for the electricity sold in the market are the prices set by equilibrium of the demand and supply, according to the order of entry of the electricity in the system, being the lowest price generation the one going in first (except for special regime production and renewable energies).

Graph 20 -Annual Historical Electricity Price



Source:EDP

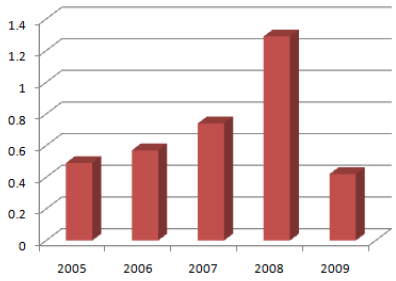
In Spain, the electric system is characterized by the existence of a "retail" market, where all the market agents operate in (producers, distributors, suppliers, etc). Electricity producers are included either in the Special Regime Production or in the Conventional Regime Production. In the latter case, the producers sell their electricity in the market at prices defined by supply and demand equilibrium. The daily electricity market is regulated by OMEL (management of the Spanish market), but producers can also sell their electricity to specific consumers or suppliers through bilateral contracts (the price is negotiated between the two parts). Given the limit of the interconnection between the two countries' grids, when the network is saturated there is a market splitting, resulting in two price zones. Consequently, the annual historical prices for Portugal are slightly above the Spanish ones as shown in Graph 20. We can see that in 2008, due to higher

equivalent interruption time in the grid, the difference between prices was more significant (Graph 21).

- MIBEL

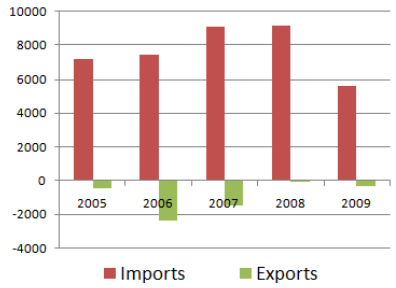
The existence of a fully liberalized and Iberian market was the aim behind the creation of MIBEL. In such a market, electricity supply and demand would set the final price of the electricity and the quantity sold, without the intervention of more regulatory mechanisms other than the market agents, operating in the market. However, some obstacles appear in the way of that goal. For instances, the overflow of electricity in the transport grid sometimes blocks the passage of electricity from one country to another (usually Portugal is the importing country as we can see in Graph 22) and this causes a market split, which means that, temporarily and depending on the magnitude of the effect of the saturation in the interconnection, two price zones appear. These market splits would be mitigated if this interconnection capacity was higher and this capacity depends on the electricity transport operator (REN in the case of Portugal).

Graph 21 - Equivalent Interruption Time



Source:REN

Graph 22 – Imports and Exports in PT (GWh)



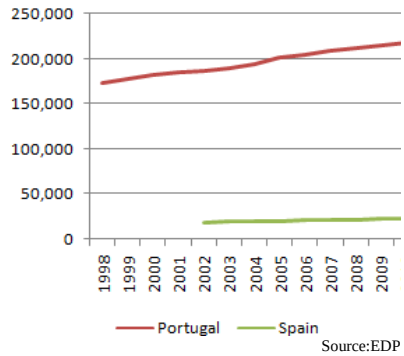
Source:REN

Distribution

Electricity distribution is the activity which ensures that the electricity generated in the power plants reaches the transportation grid (operated by *Rede Nacional de Transporte* in Portugal and by *Red Eléctrica de España* in Spain) and from the transportation grid to the consumer centres. This electricity is traded between the electricity suppliers and the electricity producers, and the electricity distributors are paid for the access to their distribution networks (which adds to the final tariff to the consumer), allowing the electricity to flow from one centre to another. This sector is regulated by ERSE in Portugal and by CNE in Spain, as well as the tariffs paid to the distributors for each regulatory period of 3 years.

In Portugal, EDP Distribuição is the national operator for the electricity distribution, with an exclusive concession granted by the Portuguese state, for the national distribution grid (medium and high voltage network). The low voltage network operates under concession granted through public agreements under the responsibility of local municipalities. In Spain, EDP also operates in the electricity distribution with HC Energía Distribuicíon. The evolution of the distribution network in Portugal and Spain is show in graph 23.

Graph 23 – Historical Distribution Network in Kms for Portugal and Spain



Source:EDP

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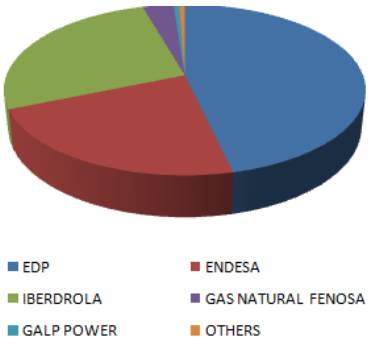
Supply

Electricity supply is the activity which operates the trade of electricity between the electricity producer and the final consumer. In Portugal and Spain, this sector has both regulated and liberalized segments. Regulated markets are operated by the last resource supplier, which is obligated to buy the electricity generated in special regime. The tariff applied to the consumers under regulated conditions is a fixed price set by the regulator (ERSE in Portugal and CNE in Spain) and it should cover the main costs incurred by the supplier (electricity purchase, transport and distribution), but should also translate into the lowest possible amount for the consumer, to maintain the equilibrium in the electricity system and ensure the supply of all consumers. EDP operates in the regulated market with EDP Serviço Universal in Portugal and HC Energía in Spain.

In the liberalized market, suppliers buy electricity in the Iberian market at market set prices, daily or in bilateral contracts. The electricity is then sold to final consumers that choose to be supplied in the liberalized market, with prices negotiated between supplier and consumer. EDP operates in the liberalized market with EDP Comercial in Portugal and HC Energía and Naturgas Comercializacíon in Spain. Both in Portugal and Spain, consumers are allowed to choose whether to be supplied in the regulated or liberalized market and their electricity supplier having EDP in Portugal a large market share, even though this share decreased from 65% in 2009 to 51% in 2010 (see graph 24), while in Spain in slightly went up from 11% to 12%. The distribution of clients supplied by EDP in both markets is shown in table 9.

In the mean time, also the market share for last resource supply in Portugal decreased from 82% in 2009 to 64% in 2010. To conclude, there is a clear trend for the passage of clients from the regulated to the liberalized market (see graph 25). More so, EDP seems to be decreasing market share (graph 26), so that the prospects of consolidation as a strong player in the future unique supply market (assuming the trend of increased share of liberalized market, as it is the will of government regulators ERSE and CNE) are clearly affected, negatively impacting future cash flows in this sub-sector of EDP´s performance.

Graph 24 –Supply in the Liberalized Market Portugal (MWh) - 2010



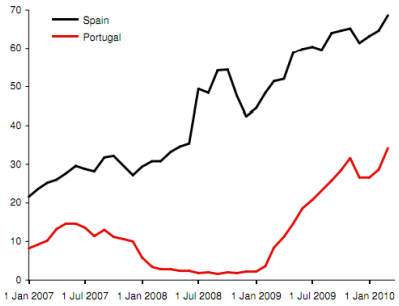
Source:EDP

Table 9 -Distribution of Clients

	Portugal	Spain
Regulated Market	5.791.683	359145
Liberalized Market	357363	291856

Source:EDP

Graph 25 –Share of Liberalized Retail Business in Portugal and Spain



Source:EDP

Graph 26 – EDP´S Market Share in the Liberalized Market in Iberia

Source:EDP

Gas

In Portugal, the natural gas market is divided into several activities which are:

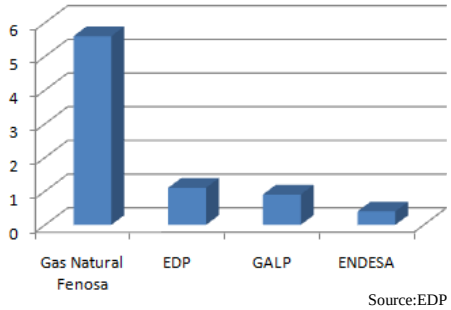
- reception, storage and regasification of LNG
- underground storage
- transportation
- distribution
- supply
- market operation
- logistic operations for switching suppliers.

The reception, storage and regasification of Liquified Natural Gas (LNG) are made in Sines natural gas plant, which receives LNG coming from the Maghreb pipeline and methan vessels. The gas import is based on bilateral contracts. The supply and transportation activities cannot be operated by the same market agent, they must be separated. The latter one is operated exclusively by REN Gasodutos, concession attributed by the Portuguese government. Distribution activities are regulated by ERSE, which determines the tariffs applicable to all customers. Distributors are obliged to give access to the national natural gas grid to any agent in the market, which consists in the low and medium pressure network. The supply activity is done by the last resource supplier, which is obligated to supply natural gas to clients that prefer to be supplied under regulated tariffs. However, as the market becomes more liberalized, clients may choose their supplier, according to their preferences and consumer profile. To consumers over 10,000 m3, the last resource tariff is no longer applicable.

EDP operates in the natural gas distribution and supply (both last resource and liberalized) through its subsidiary, EDP Gás. Around 60% of its supplied natural gas goes to industrial clients. The 6 distribution concessions granted by the Portuguese state to EDP's operations will last until 2048, a 40-year concession attributed to EDP in 2008. EDP operated the primary distribution grid which takes the natural gas from the transmission grid until the secondary grid.

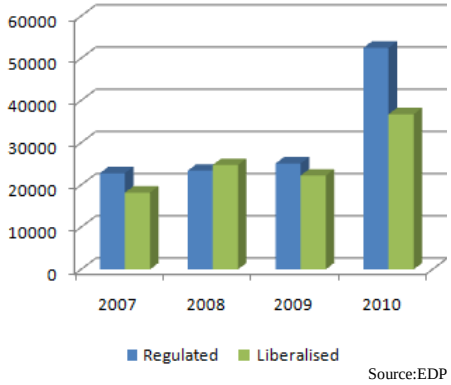
If we analyze the Iberian Supply market, we conclude for a strong concentration in 4 players and mainly, in Gas Natural Fenosa (see Graph 27). EDP presents itself as the second Iberian player due to an increase in the participation in Naturgas by the EDP´s subsidiary HC Energia. In Spain, the trend of reduction of the regulated market space is in a more advanced phase than Portuguese, reason why EDP´s market size started diminishing in 2009 (end of tariffs started

Graph 27 –Iberian Supply Market (MM Costumers)



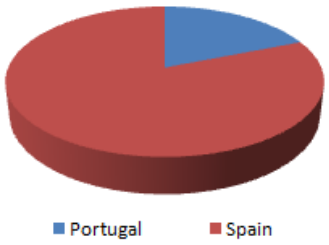
Source:EDP

Graph 28 –EDP´s evolution (MWh)



Source:EDP

Graph 29 – Supply in the Liberalized Market 2010



Source:EDP

in Spain in 2008). Still, the consolidation of Naturgas in the EDP Group numbers has caused a strong increase in supply of Gas in 2010 (see graph 28).

From 2009 to 2010, EDP consolidated his position as a player in the liberalized, both en Portugal as in Spain. Also, it is important to mention that the main portion of the liberalized market of EDP is in Spain (see graph 29). As we can see through table 10, the gross margins in the liberalized market suffered a strong downward pressure. This was mainly due to the pressure of higher cost of Gas that is indexed to the cost of oil.

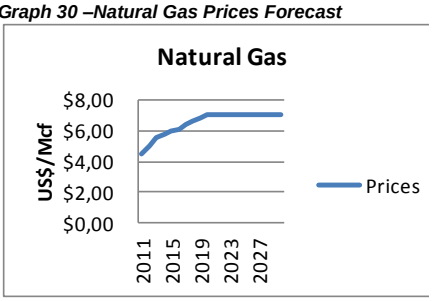
Table 10 – Liberalized Market of Gas Supply

Market Share	2009	2010
Portugal	18%	28%
Spain	8.80%	11%
Gross Margin (€/MWh)	2.4	0.8

Source:EDP

In the long term, because of the correlation between Natural Gas and oil, the forecasts are for an increase in Natural Gas price which may cause downward pressures on the gross margins, hence reducing profitability. On graph 30, we can see the forecast of Natural Gas prices over the long term. In fact, this price is indexed with the price of oil which is also set to increase in the long term (as seen previously).

Graph 30 –Natural Gas Prices Forecast



Source:Petroleum Consultants

Concerning the capacity of adjusting in the short term to a lower consumption of Gas, EDP has in my opinion some flexibility (table 11 we can see the different sources to serve gas liberalized clients and CCGT´s). First, the acquisition of a gas supply portfolio in Cantabria and Murcia with no gas attached acts as buffer for lower demand. Also, several LT contracts are being negotiated and there are forecasts of an increase in gas supply to final clients both in Portugal and Spain.

Just as in the electricity market, Portuguese and Spanish agents aim at the creation of a single Iberian natural gas market MIBGAS (the fourth largest market in natural gas in Europe, according with ERSE). The goal of such a unified market is the increase of number of participants in this market, creating competition, and simpler regulation in this segment. The regulator entities are the Portuguese and Spanish energy market regulators, ERSE and CNE, which are responsible for determining the operating rules for this market. In these rules are also included the tariffs applied to all consumers (Portuguese and Spanish), to avoid discrimination between domestic and international flow.

Table 11 – EDP Sourcing

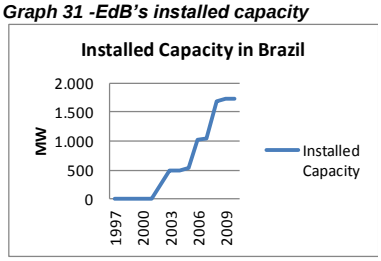
Sources	
Sonatrach	17%
ENI	15%
Galp	31%
Gas Natural	12%
Atlantic LNG	25%
LT Contracts	100%

Source:EDP

EdB Energias do Brasil

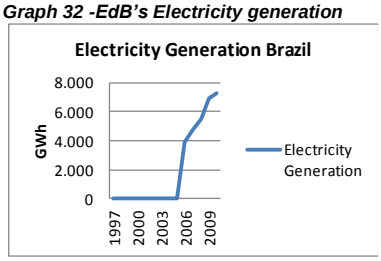
In Brazil, the growth of electricity consumption jeopardizes the supply of all the population with electricity (EDB reported an increase from 2009 to 2010 of 25.3% on the number of electrical shortages and unexpected shortages). To overcome such energy shortage, the Brazilian government and ANEEL (Agência Naional de Energia Eléctrica) have implemented the new electricity law, which focus on

Graph 31 -EdB's installed capacity



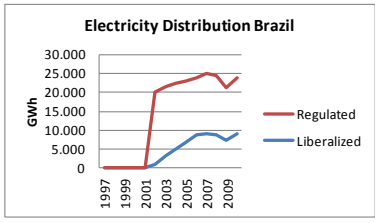
Source:EDP

Graph 32 -EdB's Electricity generation



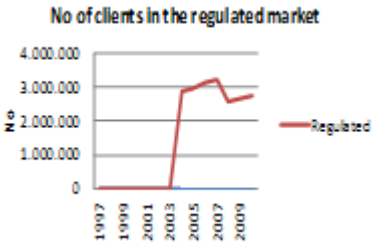
Source:EDP

Graph 33 - EDP's Electricity Distribution in Brazil



Source:EDP

Graph 34 – Clients supplied by EDP in Brazil



Source:EDP

Table 12 –EdB 2009-2010 Variations

	2009-2010 Change
Gross Profit	10.34%
Generation Volume	4.00%
Distribution	
Liberalized	21.70%
Regulated	5.80%
Supply	2.90%

Source:EDP

efficient energy consumption (for instances, and as previously noted, by shifting the consumption into lower electricity traffic hours, as a way of softening the daily electricity consumption and avoid blackouts).

The electricity generation system operates under concessions granted by the Brazilian government to electricity producers with respect to the power plant installed capacity. The producers granted with a generation concession have higher priority when selling their generation to the regulated market. The trading of energy is performed essentially in auctions, where producers realize contracts with the suppliers to the sale of their electricity. The suppliers then use the distribution networks to transmit the electricity from the generation centres to the consumer centres, being the tariffs to the distributors set by ANEEL. The supply of electricity belongs to the liberalized market, being the price set freely in the market (agreement between supplier and customer).

EdB Energias do Brasil is EDP's electricity operator in Brazil. It operates mainly in electricity generation (45.7% of EBITDA), distribution (52.9%) and supply (1.4%). Electricity generation has an installed capacity of 1,727.20 MW, with an extra 410MW under construction, in the states of Ceará, Espírito Santo, Mato Grosso do Sul, Rio Grande do Sul e Tocantins. The evolution of installed capacity and electricity generated in Brazil is depicted in graphs 31 and 32.

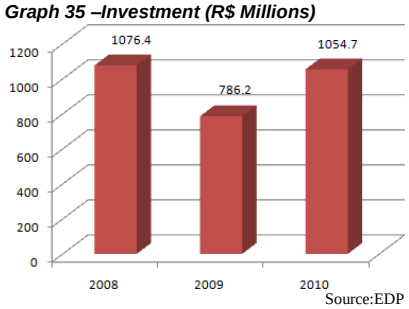
EDP Energias do Brasil also holds a 45% share of EDP Renováveis Brazil. The new wind installed capacity is already under a 20-year PPA, with an average selling price of R$ 204/MW. The new installed capacity of PCH Fazenda already obtained a concession until 2038, to sell its electricity generation to the regulated market.

When it comes to electricity distribution, EDP has two operators in this sector. EDP Bandeirante operates in the public service distribution, with a 30-years concession, granted in 1998. It distributes electricity in the state of São Paulo, a state with industries of aviation and paper, covering around 1.5 million consumers. EDP Escelsa operates in the state of Espírito Santo, reaching around 90% of this state's area and 94% of its population, around 1.2 million consumers. This area includes industries such as iron, paper, oil and gas. This subsidiary holds operating concession until 2025, which can be renewed for an extra 30 years. Graph 33 shows the evolution of electricity distributed by EDP.

Regarding the electricity supply, EDP operates with Enertrade which operates both in and outside the generation concession areas. The evolution of the number of clients supplied by EDP in Brazil is depicted in graph 34 (the supply of

electricity through the liberalized market represents 35% of the total electricity market and from those 35%, EdB has a market share of 7.21% in 2010).

Graph 35 –Investment (R$ Millions)

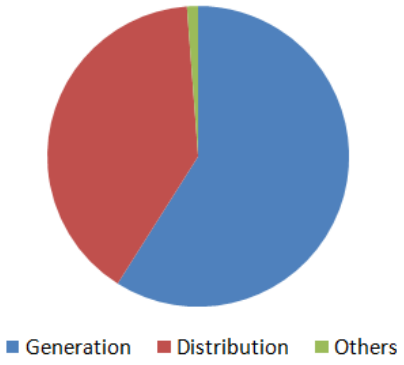


Source:EDP

Analyzing the last year trends, we conclude for a continuous and strong increase in Gross Profit, via product quantity (see table 12), since the markets of generation and distribution (the ones in which EdB mostly operates) have tariffs decided by ANEEL and at the same time, the energetic necessities increase (due to a strong correlation with GDP Growth, see graph 3) in the country. To support these demand requirements, also the investment levels have increased (see graph 35 and 36)

ForEx Impact

Graph 36 –Investment per Area



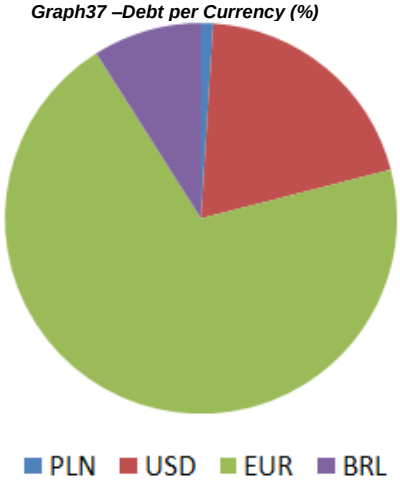
Source:EDP

The way Brazilian Real and US Dollars will fluctuate in the following years will impact EDP´s cash flow through different forms, mainly costs, revenues and payment of existing Debt. The next table shows us the market estimations (we consider best to market estimation as opposed to Forward Rates due to the low correlation between actual rates in the future and forward rates) for Euro, US Dollar and Brazilian Real.

Forecast	Spot	Q3 11	Q4 11	Q1 12	Q2 12	2013	2014	2015
EURUSD	1.449	1.410	1.400	1.380	1.350	1.380	1.350	1.380
USDBRL	1.575	1.600	1.620	1.630	1.630	1.650	1.670	1.680
EURBRL	2.283	2.256	2.268	2.249	2.201	2.277	2.255	2.318

Table 13; Source: Bloomberg

Graph37 –Debt per Currency (%)



Source:EDP

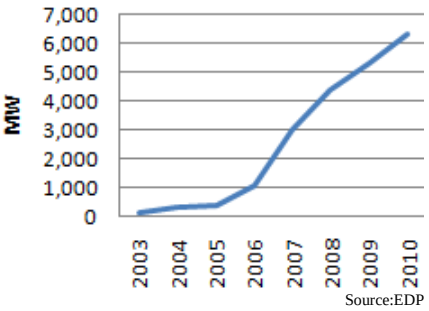
High Governmental debt and less concern by the FED about inflation seem to be the main drivers of the Dollar depreciation, while in the case of Brazil, it's the expectations of a higher deficit of the current account. In the case of Real, the depreciation seems less significant (1.5% estimated change) also due to a smaller amount of debt issued in Brazilian Real. On the other hand, the debt level is more significant in US Dollars (see graph 40). Still, the exposure to US Dollars makes sense since it is the financial support to large investments in the USA, where the consequent revenues (of that investment) will also be in USD.

EDP Renováveis

Wind is an energy source that has several advantages against conventional energy sources. Wind electricity generation is a clean generation, CO_2 emissions free; it does not include the use of any type of fuels, which reduces the

dependency of the producing companies from fuels. It also takes advantage of an inexhaustible source of energy, the wind, which means that it is not a scarce resource and there are no restrictions when it comes to wind electricity consumption. Furthermore, as environmental concerns increase, new goals appear, considering the energy consumption of each country and this will benefit wind operators. In fact, the European Union goal for 2020 is for 20% of energy consumption to be generated from renewable sources and to reduce 20% of carbon emissions based on 1990 values. Such an ambitious goal implies that operations in the renewable sector will have to develop fast, in a more economically viable way, so that these energies are able to compete with traditional energies if regulatory incentives ceased to exist.

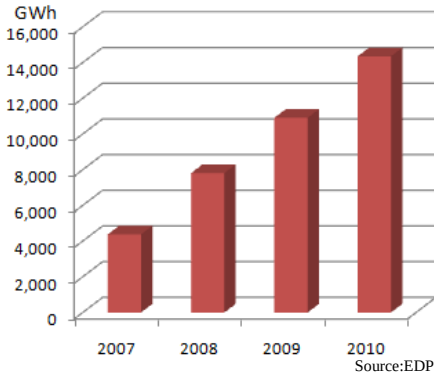
Graph 38 - EDPR's installed capacity



Source:EDP

EDPR is EDP's wind operator, present in Portugal, Spain, USA, Central Europe (Belgium, France, Poland, Italy, and Romania) and Brazil. The aforementioned goals and concerns have triggered a boosting increase in the global wind installed capacity and electricity generation, since associated with them came, protective regulation and tax advantages. In the case of EDP, the evolution of installed capacity and generation has developed as shown in graphs 38 and 39 respectively.

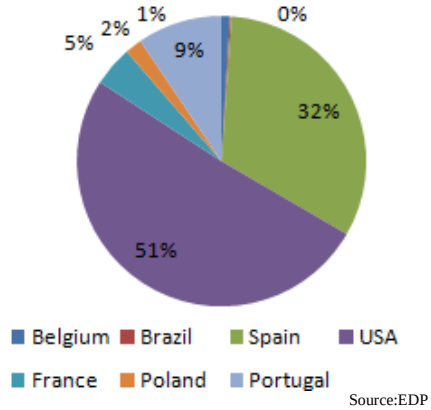
Graph 39 - EDPR's electricity generation



Source:EDP

The installed capacity and electricity generation are distributed as in graph 40 and 41. As shown in the graphs, 51% of EDPR's installed capacity is in USA (54% of electricity production) and 32% in Spain (30% of electricity production), while Portugal has 10% of electricity produced with 9% of installed capacity. The load factor for these countries was, respectively, 29%, 27% and 32% in 2010 for Portugal, Spain and USA, according to EDPR. EDPR's total installed capacity is 6,348 MW. Also, 83% of EDPR output is covered under some sort of mechanism to avoid price volatility (table 14). EDPR 2010 availability of power stations averaged 97%.

Graph 40 - EDPR Installed Capacity



Source:EDP

In the Iberian electricity market, the regulation adopted protects renewable energies. This type of generation is operated under special regime production, which means that the electricity produced has priority when entering the electric system, and the national Portuguese and Spanish systems are obliged to buy the electricity coming from these sources. Moreover, under special regime production, renewable operators have access to special, favorable tariffs, which are determined by each country electric system regulator (respectively, ERSE and CNE). This reduces the risk of exposure to market price volatility. These tariffs are determined in such a way, that costs with production from renewable

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sources are covered (essentially financial costs from initial investments, has abovementioned, this type of generation does not use any inputs except for wind). In Portugal the current legislation provides a feed-in-tariff of 74 €/MWh until 2021, while in Spain (instead of a fixed price like in Portugal), the regulators determine a prime over the price achieved in the market. As we can see in table 15, this premium is expected to be between 31€ and 38€ in this and the following year, according to scheme of production.

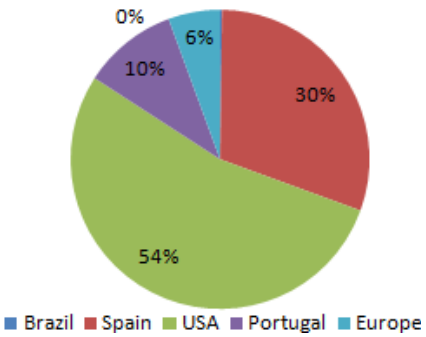
However, the Real Decreto 1614/2010 has established the reduction of 35% of the reference premium attributable to special regime production, but only for increases in installed capacity in 2011 and 2012 (which represent 14.63% of current installed capacity). The amendment of this premium will only affect installed capacity increases after 2012. Such measures ensure some stability and predictability for the sector.

Other support mechanisms exist in Europe, mainly feed-in-tariffs in France (87€/MWh) and green certificates offers (tradable commodity proving that certain electricity is generated using renewable energy sources) in Romania, Italy, UK off-shore and Poland (correspondent prices are 100€, 152€, 124£ and 59€).

In USA, the wind power generation is operated under commercial PPA's, which almost completely eliminate the exposure to market price volatility (the price is negotiated between two parties). More so, it exists a number of taxes favorable at the disposal of EDPR. The Investment Tax Credit allows for the reimbursement of up to 30% of the operating costs ("1603 Treasure Grant Program"). A second solution is the production tax credit, allowing companies to deduct 100% of the costs incurred with renewable projects, for projects that start operations until end-2011 and 50% of these costs for projects starting operations until end-2012. In both cases, MACRS (Modified Accelerated Cost Recovery System) are offered as a way of monetize the investments done.

On the costs side, we see that there has been a reduction of operating expenses per MWh produced and an increase in the EBITDA mg (see table 16). If we compare the operational expenses per regional area with the average price practiced in those same areas (see table 17, mainly 84.2€/MWh for Europe and $47.7/MWh), we conclude for a strong profitability, to which we can add stability against market price volatility, since, as previously said, around 83% of the power generation is under some contract such as PPA´s. These conditions will remain stable for the next 13 years, according to EDPR annual reports. The increase in revenues will then come from increase in EDPR installed capacity, translated into

Graph 41– EDPR Electricity Generation



Source:EDPR

Table 14 – EDPR Output Breakdown

	1Q10	4Q10	1Q11
Regulated Frameworks	51%	45%	45%
Long-Term Contracts	35%	35%	38%
Spot&Short-Term Hedges	14%	20%	17%

Source:EDPR

Table 15 – Spain Production Breakdown

2010	2011	Type	Market Price (€/MWh)	Fixed Premium (€/MWh)
20%	24%	Semi Merchant	Spot Price	38
42%	28%	Hedged	43.5	38
38%	47%	Floor Mechanism	44	31

Source:EDPR

Table 16 – EDPR Profitability

Profitability		OpEx/MWh	EBITDA mg
EU	2006	23.0 €	75%
	2009	17.0 €	80%
USA	2006	$ 31	50%
	2009	$ 17	75%

Source:EDP

an increase in electricity generation (which may or not be under PPA agreements). The investments made in the last two years are shown in table 18.

Food for Though

Table 17 – Average Price by EDPR

Tariff	2010	2009	Δ%
Portugal	93,8	94,5	-1%
Spain	79,1	84,0	-6%
France	83,9	86,6	-3%
Belgium	112,0	103,1	9%
Poland	111,5	0,0	0%
Romania	59,3	0,0	0%
EDPR EU (€/MWh)	84,2	87,2	-3%
EDPR NA ($/MWh)	47,7	48,2	-1%
EDPR BR (R$/MWh)	254,4	262,5	-3%
EDPR (€/MWh)	58,4	58,8	-1%
EDPR (€/MWh)	58,4	58,8	-1%

Source:EDP

Table 18 – Investment in new capacity

Capex (€M)	2010	2009	Δ%
Europe	539	1.014	-47%
USA	783	826	-5%
Brazil	72	2	0%
Other	7	4	59%
Total	1.401	1.846	-24%

Source:EDP

The existence of protective measures for renewable energies is a necessary condition for the sustainability of our environment. However, the creation of a special regime production in Portugal that pays a tariff (average 93€) that is twice the price obtained in the market (average 45€) leads to some distortions. Firstly, electricity production under special regime is mandatorily bought by the electric system. This means that even if the electric system is long on electricity, it will still have to buy the electricity produced. Secondly, whereas the ordinary regime production adapts its generation to the hourly consumption (notice that electricity cannot be stored and that consumption level is not constant during the say), the special regime production generates energy constantly. Consequently, during low consumption hours, the electricity is bought by the system from the producer, but has no use in the final consumption end. This electricity is sold to the market pool, often at zero prices, given the market being closed at zero (overnight periods). The exporting balance is high in terms of quantities but not in terms of revenues.

The increase of hydro installed capacity with pumping provides a solution for the use of the wind electricity produced during the night. When the consumption is almost zero (during the night), the electricity produced from wind is used to pump the water back to the dam so that, in higher consumption hours, the dam is full and the water runs out of it producing hydro electricity. However, this solution is not viable, because the revenue obtained from special regime production (including wind) is paid as an extra fee by the final consumers.

The entry of the IMF in Portugal will have significant implications on the above mentioned market inefficiencies. It is the will of the IMF that the regulated market of Gas and Electricity are eliminated until the first quarter of 2013 and the Iberian markets are completely integrated. Associated with these goals, appear more concrete goals with clear negative effect on EDP´s future cash flows, starting by the renegotiation or downward revision of both CMEC´s and existing PPA´s (recall in page 16 financial impact of CMEC´S/PPA´s). On the Renewable part, IMF declared the necessity of lowering feed-in-tariffs for future projects and the renegotiation of the existing ones. Still, this seems to have lower impact on future cash-flows of the entire group, since only 10% of the energy output of EDPR is

achieved on Portuguese soil and this rate may decrease with further investment in USA and other European countries. The obligation of increasing the VAT rate (currently at 6%) will probably have an effect, via less consumption (recall that when it come to energetic products, consumers tend to be less price sensitive than in other markets).

Sum Of The Parts

Applying the remuneration schemes described in the several EDP business units, according to the "quantity" of each service, we were able to reach the Free Cash Flow of each business unit. Discounting these cash flows, as abovementioned, to the weighted average cost of capital estimated for EDP, the result is the "enterprise value" of each business area. As shown in table #, one can observe that Energias do Brazil and EDPR weight, respectively, 18.9% and 20.9% in the EDP's enterprise value. Comparing the values obtained through the Discounted Cash Flow Model with their market capitalization (2.642M€ and 4.230€ correspondingly) and their long-term debt (1.722M€ and 3.534M€) we observe that our estimation for Energias do Brazil is above its market value and the estimation for EDP Renováveis is under its current market value.

EDP	Thousand €	€/share	% EV
Generation PT	7.893.671	2,16	27,3%
Generation SP	823.516	0,23	2,9%
Supply PT	1.287.622	0,35	4,5%
Supply SP	914.729	0,25	3,2%
Distribution PT	5.307.871	1,45	18,4%
Distribution SP	2.015.325	0,55	7,0%
Gas PT	1.163.486	0,32	4,0%
Gas SP	2.276.099	0,62	7,9%
Brazil	5.460.284	1,49	18,9%
EDPR	6.039.856	1,65	20,9%
Δ Receivables	2.329.491		8,1%
Financial Investments	443.965	0,12	1,5%
Δ Payables	7.087.060		24,5%
Total EDP EV	28.868.855	7,90	100,0%
Net Debt 2010	14.887.195	4,07	
Minorities 2010	2.930.401	0,80	
Equity Value	11.051.259	3,02	
#shares	3.656.538		
Price per share	3,02		

Table19

Adding up these enterprise values and deducting the value of debt at the end of 2010, as well as other assets, liabilities or equity items defined only for the Group and not for the subareas of the company, the result is the equity value of the firm. With a number of shares of 3.656.537.715, the achieved price per share is 3.02€.

It is then our opinion that, with a return of 18% that EDP is a good investment, even though some market distortions may increase its market at the moment. Our estimations were made with the assumption that some of these distortions will cease to exist (special regime tariffs and CMEC's).

Financials

Ratios	2010	2011E	2012E
Gross Profit	5.404.331	4.980.954	5.381.856
EBITDA	3.612.810	3.088.777	3.501.014
Net Income	1.234.601	1.294.935	1.543.088
EPS	0,34	0,35	0,42
ROE	0,11	0,12	0,14
Net Debt/EBITDA	4,12	4,12	4,00
Net Debt/EV	0,58	0,53	0,56
EV/EBITDA	7,11	7,71	7,17
EV/EBIT	4,73	5,30	4,46

Table 20

Appendix

Financial Statements

Income Statement (000 €)	2009	2010	2011	2012	2013	2014	2015	2016
Turnover	**12.198.183**	**14.170.742**	**15.299.457**	**17.341.501**	**16.202.217**	**16.301.816**	**16.735.007**	**16.615.426**
COGS	7.092.870	8.766.411	10.318.502	11.959.645	11.038.715	11.043.996	11.219.306	11.102.040
Gross Profit	**5.105.313**	**5.404.331**	**4.980.954**	**5.381.856**	**5.163.501**	**5.257.820**	**5.515.701**	**5.513.387**
Operating Expenses	1.742.365	1.791.521	1.892.177	1.880.843	1.534.086	1.526.562	1.519.230	1.512.091
EBITDA	**3.362.948**	**3.612.810**	**3.088.777**	**3.501.014**	**3.629.415**	**3.731.258**	**3.996.471**	**4.001.296**
Provisions	74.685	103.578	969.110	1.037.581	793.209	816.905	843.608	869.372
Amortizations	1.393.381	1.550.301	1.195.613	1.250.130	1.295.792	1.291.964	1.288.463	1.285.265
EBIT	**1.969.567**	**2.062.509**	**1.893.165**	**2.250.884**	**2.333.624**	**2.439.294**	**2.708.007**	**2.716.031**
Gain from the sale of financial assets	59.703	60.821	61.660	61.660	61.660	61.660	61.660	61.660
Other financial income	743.130	621.581	58.592	58.592	58.592	58.592	58.592	58.592
Interest revenue	293.244	199.163	58.592	58.592	58.592	58.592	58.592	58.592
Other financial expenses	945.943	750.887	62.851	62.851	62.851	62.851	62.851	62.851
Interest expense	577.141	554.824	763.546	840.243	871.060	850.727	839.259	840.272
Share of profit of associates	25.151	23.470	16.652	16.652	16.652	16.652	16.652	16.652
Profit before tax	**1.567.712**	**1.661.833**	**1.893.165**	**2.250.884**	**2.333.624**	**2.439.294**	**2.708.007**	**2.716.031**
Income tax expense	399.765	427.232	598.230	707.796	736.298	774.750	860.057	858.684
Net profit	**1.167.947**	**1.234.601**	**1.294.935**	**1.543.088**	**1.597.326**	**1.664.545**	**1.847.951**	**1.857.347**
Equity holders of EDP	1.023.845	1.078.925	1.171.747	1.383.679	1.433.527	1.490.719	1.666.091	1.697.634
Minority interest	144.102	155.676	123.188	159.408	163.799	173.826	181.860	159.713

Table 21

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Balance Sheet (000 €)	2009	2010	2011	2012	2013	2014	2015	2016
Assets								
Property, plant and equipment	24.093.738	20.323.583	21.098.370	21.948.240	21.910.449	21.876.485	21.846.022	21.818.757
Intangible assets + Goodwill	5.966.546	9.963.318	8.904.375	8.947.573	8.991.498	9.036.162	9.081.578	9.127.760
Investments in associates	175.272	146.871	91.173	146.477	146.416	94.763	95.993	97.239
Available for sale investments	443.117	443.965	435.086	426.384	417.856	409.499	401.309	393.283
Deferred Tax Assets	661.335	515.332	555.402	538.407	637.016	589.039	612.052	679.445
Trade Receivables	114.821	117.442	104.231	106.241	104.231	104.231	104.231	102.231
Debtors and Other Assets	1.942.970	1.696.717	1.835.935	2.080.980	1.944.266	1.956.218	2.008.201	1.993.851
Current assets	6.863.758	7.281.625	7.352.013	7.223.164	7.595.085	7.567.787	7.641.277	7.615.566
Total Assets	**40.261.557**	**40.488.853**	**40.376.584**	**41.417.467**	**41.746.817**	**41.634.183**	**41.790.662**	**41.828.131**
Equity								
Equity and minority interest	9.978.688	10.784.959	11.093.189	11.114.589	11.136.096	11.157.710	11.179.433	11.201.264
Shareholders Equity	7.291.151	7.854.558	8.098.028	8.113.650	8.129.350	8.145.128	8.160.986	8.176.923
Minority Interests	2.687.537	2.930.401	2.995.161	3.000.939	3.006.746	3.012.582	3.018.447	3.024.341
Total Equity	**9.978.688**	**10.784.959**	**11.093.189**	**11.114.589**	**11.136.096**	**11.157.710**	**11.179.433**	**11.201.264**
Liabilities								
Medium and long term financial	13.486.499	14.887.195	12.725.763	14.004.056	14.517.662	14.178.781	13.987.647	14.004.535
Employee benefits	1.879.704	1.904.879	1.941.743	1.921.743	1.951.743	1.968.431	1.940.879	1.993.751
Provisions	342.755	431.194	443.684	502.904	469.864	472.753	485.315	481.847
Hydrological correction account	112.631	75.098	94.350	94.350	94.350	94.350	94.350	94.350
Deferred tax liabilities	758.893	856.072	898.876	943.819	991.010	994.483	991.010	999.010
Trade and other payables	4.674.269	3.819.817	4.283.848	4.855.620	4.536.621	4.564.509	4.685.802	4.652.319
Current liabilities	9.028.118	7.729.639	8.895.131	7.980.387	8.049.472	8.203.166	8.426.226	8.401.055
Total Liabilities	**30.282.869**	**29.703.894**	**29.283.395**	**30.302.879**	**30.610.722**	**30.476.473**	**30.611.230**	**30.626.868**
Total Equity + Liabilities	**40.261.557**	**40.488.853**	**40.376.584**	**41.417.467**	**41.746.817**	**41.634.183**	**41.790.662**	**41.828.131**

Table 22

Cash Flow Statement (000 €)	2009	2010	2011	2012	2013	2014	2015	2016
Net Operating Profit	2.144.853	2.216.657	2.025.809	2.383.528	2.466.268	2.571.939	2.840.652	2.848.675
t	25%	26%	32%	31%	32%	32%	32%	32%
Adjusted Taxes	546.935	569.869	640.145	749.507	778.150	816.879	902.184	900.620
NOPLAT	1.597.917	1.646.788	1.385.664	1.634.022	1.688.119	1.755.060	1.938.468	1.948.055
Amortizations	1.393.381	1.550.301	1.195.613	1.250.130	1.295.792	1.291.964	1.288.463	1.285.265
OCF	2.991.298	3.197.089	2.581.277	2.884.152	2.983.910	3.047.024	3.226.931	3.233.320
Capex	4.488.321	1.748.517	855.758	2.198.503	1.301.863	1.251.011	1.304.646	1.305.429
Δ NWC	1.277.090	1.716.346	-1.095.104	785.895	302.837	-180.993	-149.569	-540
Δ Receivables	-478.269	-388.787	157.197	221.360	-48.643	-44.383	66.806	43.017
Δ Payables	-150.206	-681.192	575.441	655.936	-274.848	50.937	102.831	23.922
FCF	-2.446.050	-560.179	3.238.867	334.329	1.153.005	2.072.326	2.107.879	1.909.336

Table 23

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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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