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MERGERS AND ACQUISITIONS

AN INTEGRATION IN ENERGY SYSTEMS:

THE CASE OF EDP RENOVÁVEIS AND MARTIFER GROUP

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ABSTRACT

The recent advent of privatization of one of the main actors in the Energy Industry Sector, in Portugal, made the whole segment to be under the spotlight. The liberalization of the energy segment in Portugal, the vicissitudes in the regulation and the increasing importance of the renewable segment conducted to an amplified interest in studying a possible deal with this industry.

Furthermore, when assessing the companies and its potential in terms of performing a deal, the criteria were not only the likelihood of becoming real, but also the existence of an added-value analysis. The possibility of creating a trend in the industry, integrating businesses so far separated enhanced the research and demanded a detailed overview of more than one sector.

In fact, consolidation, liberalization and regulation are generic concepts that cover a large spectrum of situations. However, all of them are attributable to the Energy Industry nowadays. Hence, such a wide segment facing several challenges brought up the possibility of a vertical integration of EDP Renováveis (EDP R) with a company in the energy systems segment as a key-movement. Consequently, Martifer Group SGPS (Martifer) came as an obvious partner. Tacking fiercer competition (consolidation and liberalization), and uncertainty in the mature markets towards renewable energy production subsidization (regulation) due to the hazy economic environment, with decreasing costs by integrating a downstream company may be a valuable comparative advantage. Both companies are quoted in the Portuguese Stock Market, with a worldwide scope though - increasing the benefit of merging.

This dissertation will, then, focuses on analyzing the previously referred companies, being Martifer the target of EDP R in the attempt to integrate the business segments, not only in the wind segment, but also diversify through the solar one. Additionally there is potential of evolving in the best practices developed and improve management. In order to do so a careful industry analysis was developed, covering in total five industries: metallic constructions, wind and solar energy systems production and project development; and electricity production from both renewable sources: wind and solar.

EDP R and Martifer are, as of 31st of December 2012, according to the valuation performed, undervalued companies, with considerable upside values. Moreover, the latent synergies were esteemed and represent a 40% premium over Martifer's average market capitalization of 2012.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF GRAPHS

LIST OF FIGURES

LIST OF ABBREVIATIONS

APV	Adjusted Present Value
CAGR	Compound Annual Growth Rate
CAPM	Capital Asset Pricing Model
CAPEX	Capital Expenditures
CCC	Cash Conversion Cycle
CFD	Cost of Financial Distress
CMVM	Comissão do Mercado de Valores Mobiliários (Portuguese Securities Market Commission)
Δ	Variation (*Delta*)
DCF	Discounted Cash-Flow
Tc	Corporate Tax Rate
Rd	Cost of Debt
Re	Cost of Levered Equity
Ru	Cost of Unlevered Equity
P(D)	Default Probability
DCF	Discounted Cash-Flows
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EDP	Energias de Portugal
EDP R	EDP Renováveis
EMEA	Europe, Middle East and Africa
∏	EBIT Margin
EV	Enterprise Value
E	Equity (Market Value)
Vu	Firm Value Unlevered
FCFE	Free Cash-Flow to Equity
FCFF	Free Cash-Flow to the Firm
IMF	International Monetary Fund
LCOE	Levelized Cost Of Energy
M&A	Mergers & Acquisitions
NWC	Net Working Capital
%SynC	Percentage Cost Synergies
%P	Percentage Premium
%SynR	Percentage Revenue Synergies
PVTS	Present Value of Tax Shields
P/Book	Price-to-Book value
P/E	Price-to-Earnings ratio
ROE	Return on Equity
ROIC	Return on Invested Capital

SynC	Cost Synergies
SynR	Revenue Synergies
Rf	Risk-free Rate
SGPS	Sociedade Gestora de Participações Sociais (Holding Company)
SVR	Shareholders' Value at Risk
TGR	Terminal Growth Rate
WACC	Weighted Average Cost of Capital
YoY	Year over Year

INTRODUCTION

The present dissertation is subject to the Mergers & Acquisitions (M&A) theme. Therefore, its objective is to assess the potential of two companies merging operations in order to improve strategically and financially. The proposed deal is performed by EDP R over Martifer, both companies with strong roots in Portugal and a remarkable position in their sectors of activity.

Firstly, the literature review considers the main topics on valuation and M&A. Through discussing the various assumptions theories, according to each case, it is assured that the best practice is applied when required. A specific chapter on synergies valuation was developed so that the potential of the deal is carefully assessed and justified.

After, information about the industries where both companies are inserted in is developed in a comprehensive manner. The understanding of a possible vertical integration and diversification - the consolidation of the synergies, basically - in general, is consistent with the reality is then backed-up by the industry and company research. Besides, the standalone valuation of each firm also lays on this information since it should reflect the present and future performance of each market.

Thirdly, the valuation of the two companies is performed separately and combined but without accounting for its potential of merging. The operational forecast and the risk assumptions are crucial to define an accurate analysis. Both valuations are part of the final equation when defining the synergies value and consequently, the offering price.

In conclusion, the integration of the two companies is covered in one chapter that is followed by a section that details the approach of the offer and the deal execution. There was a deep preoccupation in defining all the variables, from the negotiation to the finalization of the deal, in order to actually explain the issues that may arise in an M&A transaction.

The extensiveness of the analysis is a result of the large number of industries (related with the involvement of a portfolio company) and the complexity of those in terms of regulation and operations. Even though a deeper analysis could have been performed, the focus on materiality and impact was maintained as criteria in the information treatment.

LITERATURE REVIEW

"Price is what you pay. Value is what you get."
Warren Buffet

The *cliché* of starting by referring one of the most respectful actors in the Mergers & Acquisition (M&A) world is unavoidable if in the myriad of quotes there is one that explains the all theory of a transaction and its pricing – thus justification made.

Among time different authors stated the close relationship between an M&A transaction and valuation techniques (Hitchner, 2006; Luehrman, 1997). As in project and trade finance, buyouts, joint ventures and alliances, valuation is on the basis of any M&A case.
There is exhaustive work on valuation so that the strategic value added of such transaction is properly assessed. It accounts for information about the industry, from business to competitors' performance and the company itself like the quality of the products, and the need of flexibility of the terms (Luherman, 1998). Hence those will be the issues addressed in this literature review.

A. VALUATION OVERVIEW

The price and the value of a company are concepts often confused as being the same. According to Fetter (1992) price is the amount exchanged when the transaction occurs. The value can change widely from acquirer to acquirer and within targets, obviously (Fernández, 2007).

The approaches of a company's equity valuation to be further developed can be divided in various perspectives. Vernimmen (2009) states the existence of direct and indirect models: the firsts generate the equity value straight; and the seconds' output is how worth the enterprise, to which is then deducted the financial debt and other liabilities.

When analyzing the models there is a second wing, about the functional reasoning rather than the output. Young M. et al. (1999) refers to the existence of three different approaches in terms of philosophy of the methodology. The cash flow based outputs either the equity or the asset value of the company, discounting the future cash flows it will produce by a cost of capital implied. Dynamic ROE and EVA are examples of returns-based models where the principle lays "on the capital stock and the spread between the return and the cost of capital". The multiples approach is a very simple one, where by defining a group of comparables, and selecting a variables ratio it is possible to achieve a proxy-based value of the company.

Finally, there is a fourth model referred by other authors such as Luehrman (1997) and Froot (1997) that is based in valuing an option as for companies under bankruptcy risk or a project with known probability of failure.

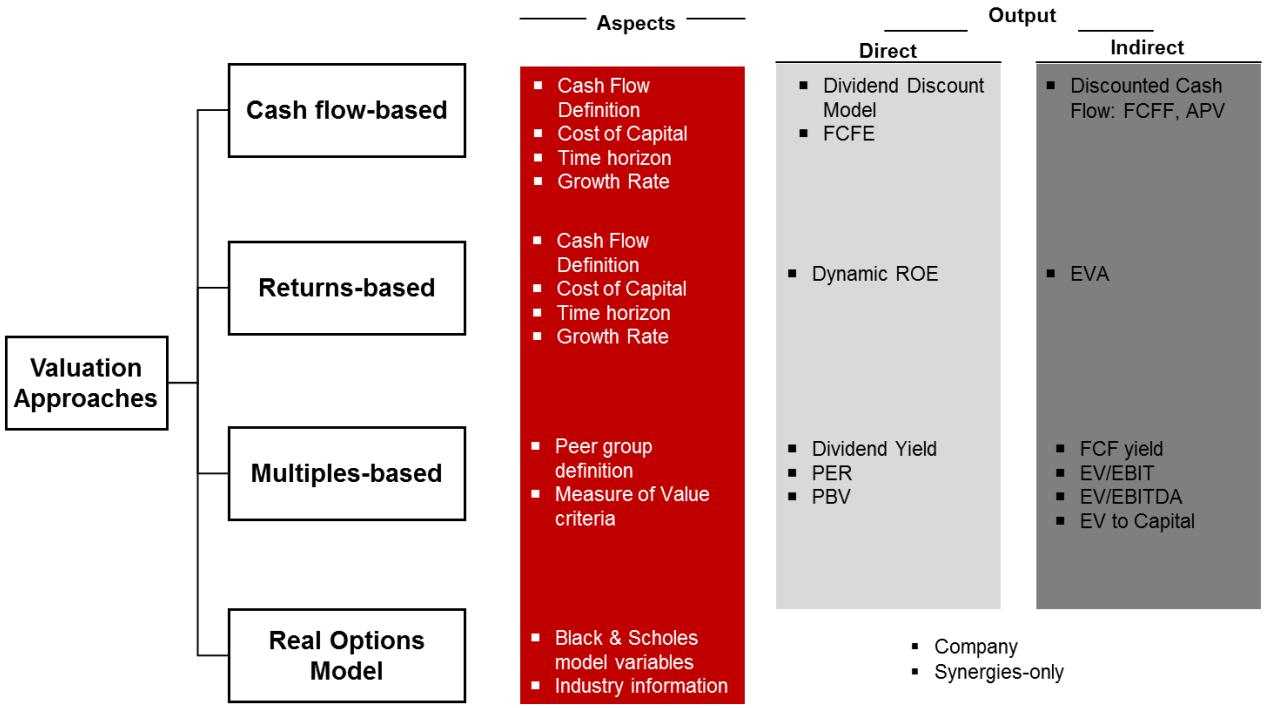


Figure 1 Methodologies considered for valuation

Source: based on Damodaran (2006), Young M. et al. (1999)

The choice of a specific valuation method intends to approach estimations of the real value of the assets object of such study. As a matter of fact, the discounted cash flow forecasts tend to give a reasonable prediction since the relationship with the real value is considered to be strong. Under empirical studies, DCF methods outperformed when compared with multiple-based methods. Nevertheless, the usage of both in a hybrid estimation approach was, in the end, the most reliable one (Kaplan & Ruback, 1996).

1. Cash Flow based Models

The models based on cash flow that are going to be presented in detail later on are WACC and APV, as well as the DDM. The ones presented include the process of defining the cash flow itself, the rates involved in and the time horizon to include. Therefore it will be developed the types of cash flows whose inputs may be different as well as the different variables of each model practice that lay on generic conditions to be further developed.

1.1. Generic Aspects

Nowadays with the advent of internet and Bloomberg, it is also important to select the criteria for data collection about the company's performance. According to Fisher (1966), the preferred method and the one to be used later in this thesis lays on monthly stock prices. It allows generally more in-depth studies. Daily data can suffer from the also known Fisher effect, meaning that the closing price does not represent the day as whole since it is the last trade. Weekly results can suffer from distortions which derive from the day of the week selected for closing prices, since Mondays and Fridays have specific tendency on performing poorer and better, respectively, on the stock market (Cross, 1973).

Actually, using daily or weekly data generates issues when the company's stock is rarely traded since a constant performance will generate a downward bias because it is an illiquid asset (Koller et al., 2010). Damodaran (2010) confirms that specifically for the beta regression and any analysis including the market's performance creates a problem since assets do not trade on a continuous basis or with a significant volume all the time (actually this is bolder in the case of Martifer).

The solution is based on longer return intervals: "quarterly and annual returns result in too few observations in the regression, but monthly returns should provide sufficient observations for firms listed for more than three years. Betas estimated using daily or even weekly returns are likely to have a significant bias due to the non-trading problem, with illiquid firms reporting lower betas than they really should have and liquid firms reporting higher betas than is justified."

The use of arithmetic mean ignores estimation errors and serial correlation in returns. In the estimation of the capital asset pricing model (CAPM), the cases studied by Cooper (1996), the "corrected discount rates are closer to the ones that used arithmetic than the geometric mean", however the historical returns are usually calculated based on geometric average, since the arithmetic reflects an unbiased estimation determining the expected return it was the approached developed.

Applying corporate finance theory under the cash flow techniques scope carries the exposition of certain variables that have crucial impact on the output, such as the discount rate, the cash flows accounting, the timing and taxes.

1.1.1. Discount Rate

Independently of the DCF model to be chosen, all of them fall in the reasoning of the need of a discount rate. It may account for a company as it was all-equity financed or a mix of its position in equity and debt implying different weights and costs. Above all, it should compensate the investor for the opportunity cost of investing in this specific project instead of another under the same risk (Copeland, T. et al., 2000) and time conditions (Luherman, 1997). Ariel (1998) states and proves that costs are "neither more nor less intrinsically riskier than revenues" as they compare to *long* and *short* portfolio positions, therefore the discount rate should be applied accurately to the cash flows to be calculated.

1.1.1.1. Cost of Equity

The acceptance of a cost of equity can be based on firm specific information, industry or the market in general (Kaplan, 1996). Koller et al.. (2005) points out the existence of three models to estimate the cost of capital: Capital Asset Pricing Model (CAPM), Fama-French Three-Factor Model and Arbitrage Pricing Theory (APT).

CAPM is the most well-known and regularly run-through in defining the cost of equity (Sharpe, 1964; Lintner, 1965; Mossin, 1966). It is based on Harry Markwotitz (1952) modern portfolio theory since it relies on the rationality of an equity risk-premium (Rm-Rf) multiplied by β, summed up with a risk free rate (Rf), yielding an expected and/or required return on equity. Thus it means that the presence of a specific investment within a portfolio only implies exposure to undiversifiable risk. It was pointed out by Fama (1976) and Roll (1997) that the CAPM's condition of "in market equilibrium, the value-weight of the portfolio, M, is mean-variance efficient" (Fama and French, 1996) assumes that β by itself explains the expected return risk and it has an expected premium for this β risk with positive value.

The cost of debt will be deeply approached later in this literature review. However it is reasonable to assume that the fact that a company is going through a mix of debt and equity to finance its activity and assets, has implications in the likelihood of the shareholders getting their equity return so that there is a risk of bankruptcy and a debt seniority in the hierarchy. Hence it is crucial to consider, respectively, two formulas of CAPM equation: the levered (WACC methods) and unlevered return (APV reasoning).

$$R_e = R_f + \beta_{lev}\left(R_m - R_f\right)$$
$$R_u = R_f + \beta_{unlev}\left(R_m - R_f\right)$$

The risk free component is accounting for the return if the investment was in a risk-free asset; the latter referred product is the specific risk part as it corresponds to the risk premium of the asset considered.

Although many found that β is not sufficient to explain the expected return, through CAPM it is indeed considered as being a more intuitive tool: "simple and attractive" (Fama & French, 1996). Additionally Fernández (2009) found out that CAPM is "explicitly recommended to be used to calculate the required return to equity" in 79,(3)% of the books publicized in the corporate finance field. For the sample used by Kaplan (1996), the results favored CAPM-based approaches to calculating discount rates over those based on size or book-to-market ratios. Therefore the other models will not be developed, and CAPM will be the method developed in this literature review.

a) Risk Free (Rf)

A risk free investment requires that there is neither default nor reinvestment risks. Before the best response to those two conditions were treasury bonds of any country. According to Damodaran (2008b, 2010b) the financial tools able to fulfill the best such requirements are government securities because countries are run better than corporations and they control the printing of currency, however those conditions may not be always held. Moreover, "even a 5-year treasury bond is not risk free, since the coupons on the bond will be reinvested at rates that cannot be predicted today". For practical terms, the approach towards risk free is long term government bond rates: default-free zero coupon, matched up in terms of timing of the

cash flows occurrence. The currency and the real or nominal terms need to be consistent with the last referred inputs of the valuation model.

By now with the sovereign-debt crisis, it became harder to define a good proxy for such value. Nevertheless, Damodaran (2010b) gives an updated answer to the situation with three different possible solutions: forward rate calculation, adjustments to government bonds and a buildup approach for the real rate: "Since the risk free rate in any currency can be written as the sum of expected inflation in that currency and the expected real rate". The concept that addresses it with adjusting the government bond rate yields the proper risk free rate on that currency by discounting to the current market interest the default spread. Fitch, Standard & Poors and Moody's publish regularly the ratings to each country sovereign debt that refer to a specific default spread. On the other hand it is possible to calculate it by discounting the same time-based US Treasury bond, which difference will be the default spread. Considering the Portuguese case, the most suitable approach would be the German government bond (as a proxy of a reliable risk free in the European scenery), adding up the default risk premium related with the rating of the country by the time of the valuation.

b) Beta: Levered and Unlevered (β)

The CAPM formula comprehends the usage of a variable that represents the stock's risk added up to the diversified portfolio performance (Brealey and Meyers, 2003; Koller et al., 2010). Beta for the unlevered firm represents its systematic risk whose estimation may be processed based on the firm's stock performance, industry or market based data. Koller et al. (2005) defines the practical calculation of any beta through a regression that confronts the company stock return with a diversified portfolio, for example the S&P 500.

Although there are studies that approach the beta as being possibly negative, an extreme case (Cloninger et al., 2004), it will be assumed that equity is always risky so that the correlation between a stock and a market, and the beta is always positive. The calculation of the beta is defined by Ross (1978) as the covariance of the investment returns and the market performance, normalized by the variance of the market return.

The way a company is financing itself of course affects its beta structure of an asset, this way Modigliani and Miller (1963) enhanced under the Proposition II the possible relationship between the unleveraged and leveraged beta. Actually, under certain models, it is logical to apply an unlevered Beta that accounts only for the operating risks so that the debt side of the company is not incorporated. In order to get the unlevered beta it is possible to with the following formula

$$\beta_{Lev} = \beta_{unlev}(1 + \frac{D}{E}\ (1 - \text{Tax rate}))$$

Betas can be unlevered and relevered to add sensitivity to a specific capital structure. Therefore it is possible to produce an accurate beta for a firm from an adjusting industry or peer betas, suiting a company's specific debt level. Nevertheless, it is defined by Kaplan and Peterson (1998) that taking into consideration more than one company for the beta regression provides more accurate results and therefore the betas must be unlevered and calculate the median of the relevered at the specific values of the analyzed company. This last step of unlevered is related with the capital structure of a company changing over time so that it should be corrected by cleaning the impact of debt level (Copeland et al., 1990).

Industry based relies on a value-weighted portfolio of companies that acts under the same activity instead of just comparing the value of the firm itself. Finally the market-based measure of systematic risk for all sample firms equals the risk of the assets of the market. The MAEs (mean absolute error) of the valuation errors (comparison performed between the value achieved through APV and the real value of the transaction) was smaller by 5 p.p. for market and industry based betas than the MAE of firm-based betas. Additionally, the MAEs of the industry and market based APV methods were significantly smaller than the MAE of the comparable company method (Kaplan, 1996). Concluding, the used methodology will be based on the Kaplan & Peterson (1998), confirmed by Kaplan empirical studies (1996).

The usage of an adjusted beta (Bloomberg) may be required since due to information or business-specific issues it may not have direct peer comparables (Clarkson & Thompson, 1990). It considers only 67,(7)% of the company's beta and the reminiscent is the market beta, which is one.

$$\beta_{adj} = \frac{2}{3}\beta_{equity} + \frac{1}{3}\beta_{market}$$

c) Equity Risk Premium

Market risk premium is the excess return one receives, greater than the risk free rate, compared with an investment in a diversified market portfolio. The perspective of right approach to this piece of CAPM has changed over time. Goetzmann and Ibbotson (2005) defined it as being the risk free investment discounted from the market performance in the past, meaning based on historical data. However, before, in 1976, Ibbotson and Sinquefield concluded that this strategy revealed a too large premium by introducing data from 1926 to 1976 (S&P 500 to US Treasury bond returns) that later was proved as matching the average return on equity. Moreover it must be coherent with the rate used in the first part of the CAPM equation. According to Damodaran (2011), there are three approaches to estimate the premium: to survey investors, historical and implied premiums.

Considering the first method, Damodaran states it has weak prediction power. Yet, Fernández et al. (2011), in an adequate survey, achieved a range between 5,3% to 5,9% for most developed countries. Again, Damodaran (2011) recognizes that the historical premiums are

most widely used technique. As risk free is a piece of the risk premium calculation it is stated that when the time horizon is larger than one year, the Treasury bond fits better, by generating a riskless return for the time frame chosen. The actual average returns earned, on an annual basis, on a broadest index of stocks over a considerable time period. Digging in, it is necessary to consider market capitalization weights, as well as, carefully account for the survivor bias, meaning the companies that among the period consider are out of the market (either caused by bankruptcy or merger and acquisition transaction) should be included in the sample. It is stated by Dimson et al. (2005) that the point of perform an estimation of risk premium implies the conversion into arithmetic means if it is going to be applied to DCF model. The method that seems to reply to the criteria of being either market-based and future-looking based, the implied risk premium, has still a fragile side due to the empirical results having a critical correlation with the valuation method to be used and about being based on dividend discount model[1] (and not applicable in the case of negative results of the companies).

Koller et al. 's range of 4,5% to 5,5% works as good proxy to compare the consistency of estimations since those are related to the portfolio of a global investor in developed economies, being the first percentage the one for mature economies. As a matter of fact this piece of CAPM is one of the most controversial (Oded, 2007) in terms of method to use, Fama and French (1996) criticizes among several points the market portfolio accounting. Therefore, to avoid it Damodaran (2011) suggests "the default spread affiliated with the country rating has to be multiplied by the average of equity to bond market volatility and then added to the historical risk premium":

$$Imputed\ Equity\ Risk\ Premium$$
$$= 5\%_{(mature\ economies\ @\ Koller\ et\ al,2005)} + Country\ Default\ Spread_{rating\ of\ bond} * \frac{\sigma_{Equity}}{\sigma_{Country\ bond}}$$

The turmoil moment that several economies are facing, especially the Portuguese one, emphasizes the fact that economic risk does have a link with risk premium computation (Lettau et al., 2008). For instance Portugal predictions for GDP keep changing and failing when compared with real values. Therefore, it stresses the importance of the referred above default spread over a generic equity risk premium.

d) Extra Risk Premiums

Besides the already referred country risk premium that transforms into a multifactor model the equity risk premium calculations, some like exchange rate, inflation risk, political or regulatory

[1] Implied risk premium: implied discount rate – yield on treasury bonds long term at the time of the projections
Implied market risk premium x asset beta = implied risk premium

modifications or uncertainties also need to be accounted for. Froot (1997) develops heavily on performing adjustments in the cash flows due to special risks the companies may go through rather than impacting the discount rate. Furthermore the importance of a sensitive analysis on impactful variables is underlined from this spectrum (James & Koller, 2000). The cash flow routine is further approached later on.

Under conditions of high and unstable inflation, valuation is often done in real terms (Damodaran, 2010b), but it is not the case so that it was done in nominal terms. To be more specific concerning the nationality of both companies (Portuguese, although the headquarters of one is in Spain) it is clear that economic situation despite under economic turmoil it is not suffering from high inflation.

1.1.1.2. Cost of Debt (Rd)

The pioneers in capital structure theory were Modigliani & Miller (1958). They pointed out the potential of leveraging to the point the interest paid mean lower results and consequently less taxes paid, in an optimal point of debt. However the greater the level of debt, the higher interest it may be required by the financing entity. In consequence the importance of estimating an accurate rate of return to the debt holders is important for the WACC discounted cash flow method (Brealey & Meyers, 2003) and APV, as well.

Some companies not only trade their equity in the stock market, but also issue debt (applied to bonds, securization and hybrid instruments) in order to finance them (Shivdasani & Zak, 2007). Hence it is a good proxy for the cost of debt since it is the market perspective. When it is not the case, the company is financing only through the regular bank loans (or leasings, for example), the risk free rate and a default spread based on the company's status may be a methodology:

$$Cost\ of\ Debt = Risk\ free\ rate + Default\ spread$$

The default spread is classified based on indicators as interest coverage ratio by Rating Agencies' regular updated tables, since Korteweg (2007) proved the relationship between the interest coverage ratio (EBITDA/Interest payment) and the likelihood of a company's default, corresponding it to a certain rating classification. For that reason, historical performance of the company towards their lenders is then the data is actually used to understand how riskier a company is, in the sense of the greater the probability of default, the larger the remuneration lenders will ask for. Risk free literature was already discussed, keeping the same approach.

1.1.2. The cash flows

The free cash flow to equity (FCFE) outputs the equity value since it is the present value of the cash flow available to equity holders being what was generated by a company's operations that is available to all the capital providers subtracted by financing related payments (net debt) and

taxes involved. If adding up "share repurchases and deducting new equity issues to the dividends", it can be applied to the model as being FCFE (Koller et al.., 2005).

$$FCFE = Net\ Income + Depreciation\ \&\ Amortization + Net\ Debt\ Flows \\ -Capital\ Expenditure - \Delta Net\ Working\ Capital$$

FCFF is the acronym representing free cash flow for the firm being basically the FCFE not deducted by net debt payments or taxes (Copeland et al., 2000).

$$FCFF = EBIT\ (1 - Tax\ rate) + Depreciation\ \&\ Amortization \\ -Capital\ Expenditure - \Delta Net\ Working\ Capital$$

However, the net debt payments become more important for certain models so that interest tax shield is an incorporated piece of value. As well as other flows that are considered as part of company's value since there are financing side-effects that may be the already mentioned interest tax shields, costs of financial distress, subsidies, hedges, issue costs (Luehrman, 1997).

1.1.1.1. Time frame (*t*)

It is not reasonable to estimate the cash flows of a company for a very long period. Therefore the most efficient method is to, through defining properly long term assumptions, after year *t*, assume that cash flows start being a perpetuity. The terminal value may represent from "80% to 90% of the market value estimate" (Young et al., 1999).

The factors to take into account when defining the starting point of the terminal value (t) are mainly related with the performance of the company in terms of historical, cyclical or economical (country-specific: currency or inflation) related factors. Nevertheless the likelihood of a geographical expansion or product extension in the next few years must be fully accounted for, which imply the cash flows definition until stability arrives. Besides, and accordingly to Koller et al. (2010), if the explicit period is too short it is likely to consequently output an underpriced valuation so that the cash flow streams should not be shorter than 10 to 15 years.

1.1.3. Growth Rates

The company's expected growth is twofold applied: before the terminal value, when forecasting the cash flows for the next years; and after the explicit period. A company life cycle do matters when deciding the approach, since the period of cash flow streaming should be classified as in transition (after a turn-around or post-take-over) or as in mature steady state (Jennergren, 2008). There are three reasonings stated by Damodaran (2008a, 2007) when calculating growth: firm's fundamentals (the preferred to calculate the predicted operating income), historically (previous years' performance, a longer and a shorter term overview to understand the regular company, industry or economy patterns) or through analyst consensus (public reports on the matter).

1.1.1.2. Operating Assumptions

Their evidence for the aggregate market suggests that while there is some short-term foreseeable expectations, earnings growth is in general unpredictable. On the other hand sales or costs separately may be calculated if linked to some other variables or industry based data, but there is essentially no persistence or predictability in growth of earnings across all firms and long periods. Moreover, two firms can have the same expected return, but have different earnings growth rates because of their dividend payout policies (Chan et al., 2003).

Gupta (1969) found that profitability or leverage has no stable relationship with growth, therefore and because the reasons for a company expansion may be from several roots it is hard to generalize the efficiency opportunities (technological or operational). The size of a company also reveals not to be a significant factor. Nevertheless small firms easily achieve greater growths because the opportunities to be taken advantage from are still out there, while large ones may be already maturing. Investments in new assets and improvements in efficiency of the existing assets do matter as defining the ongoing growth rate. (Damodaran, 2008a)

1.1.1.3. Terminal Growth Rate

Damodaran (2008a) defines as a good long term growth method the expected growth based on reinvestment and its profitability meaning that "at some point in time, your existing assets will be optimally utilized and you will no longer be able to extract additional growth". As a matter of fact the inputs of the reinvestment rate have a negative impact for the cash flow since it is an outflow but the g rate is boosted:

$$Expected\ Growth_{\ EBIT} = Reinvestment\ Rate\ \times Return\ on\ Capital$$

$$Reinvestment\ Rate\ = \frac{CapEx - Depreciation + \Delta\ Non - cash\ Working\ Capital}{EBIT\ (1 - Tax\ rate)}$$

$$Return\ on\ Invested\ Capital^{2}\ = \frac{EBIT\ (1 - Tax\ rate)}{Fixed\ Assets + Current\ Assets - Current\ Liabilities - Cash}$$

As an input of the perpetuity formula, cannot exceed the growth rate of the economy the company is having activity in. Actually Chan et al. (2003) specified that "the median earnings growth across companies is close to the growth in gross domestic product". In order to be coherent in the sense of a company that keeps growing and not divesting, the terminal CapEx needs to at least cover the depreciations and amortizations (Kaplan et al., 1996).

[2] Denominator pieces at book values.

1.1.4. Taxes and Currencies

Companies do more and more present cross border activities, fiscal unification is still not a reality so that the differences within the sphere of tax treatment need to be exposed. When in doubt a good, however conservative, approach is the higher corporate tax rate among the countries (Kester and Froot, 1997).

The tax rate to be applied for the free cash flow stream must not be the same as for the WACC, for instance. Damodaran (2002) presents a US reality evaluation which is not useful to the case to be performed later on. Nonetheless, generally, "the best compromise is to use effective tax rates for the early forecast years and move towards a marginal tax rate in the later years."

The usage of the marginal tax rate becomes an obvious solution when the historical situation of the company reveals the existence of negative results and thus no hint for a reliable effective tax rate calculation (Koller et al., 2011). The issue is emphasized by a worldwide presence as it was approached in the *Multinational Firm Valuation* section.

Relatively to currency that also presents consequences for the cash flow estimation the adopted approach, based on Zenner et al. (2008) is to estimate "home currency cash flows by applying forward exchange rates to each and then discount it. Still, the cost of capital computation will also be home influenced.

1.1.5. Leverage implications

The capital structure of a firm is an avoidable slice of a firms' overview. Nevertheless, operationally, it is supposed not to affect a firm's activity, once defined (Modigliani and Miller, 1958; Brennan and Schwartz, 1978). Depending on the method to evaluate the company, it may be accounted implications as effects on taxes or financial stress costs (Leland, 1994), under an assumption in terms of D/V ratio.
For example, the WACC approach may account for a stable ratio of debt relative to value, but it is not realistic, because it keeps changing over time due to the regular activity of the company (Oded, J., 2007; Miles & Ezzel, 1980).

1.2. Models Philosophy

It is important to use more than one model to get a complete picture of a company. (Kaplan, 1996) Thus, within, the cash flow models: three are very important in terms of being highly useful in the financial field. Actually the DCF methods permits through forecasting cash flows and defining a certain discount rate achieve the present value of those, corresponding to a company's value (Luherman, 1997). The methodologies based on cash flows that are going to be developed, as it was previously mentioned, are APV, WACC and DDM. Besides the regular APV, Luehrman (1997) uses the compressed adjusted present value. This last one is a derivation of the model since it considers the discount of all the cash flows, including the

interest tax shields, at all-equity discount rate since the risk of the side effects is balanced and comparable to the cost of equity according to its assumptions.

1.2.1. APV

According to Luehrman (1997), this methodology is based on a separate analysis of two types of cash flows streams. The threshold is between the operational cash flows as the firm was unlevered and the ones provided by financial maneuvers (adding the leverage effects as tax shields and costs of financial distress). The risk of the two parts is assessed and discounted at a proper rate, producing the valuation (Inselbeg & Kaufold, 1997).

$$Value\ of\ the\ Unlevered\ Company\ (V_u) = \sum_{t=1}^{n} \frac{FCFF_t}{(1+r_u)^t} + \frac{FCFF_{n+1}/(r_u - g)}{(1+r_u)^n}$$

APV is more suitable to highly leveraged transactions due to this approach of different costs to discount the unlevered firm and the leveraging effects. Conceptually it is preferred in terms of DCF methods. However, there are failures in the models due to some simplifying assumptions. APV have two offsetting effects on the estimated values. First, the expected values of the interest tax shields are less than those implied by the corporate tax rate because there is a non-trivial probability that they face losses, and there's no tax shields, since it is a HLT; however if profit their likelihood of occurring is greater than the operational cash flows – being the balance that compressed APV is based on. Even so, the discount rate may be discounted by the time value and a risk premium (Luehrman, 1997).

1.2.2. WACC-based DCF

The preference for this method collects a great quorum among practioners and academic. The fact that it relies on the actual in and out flow of cash, rather than on accounting flows is the main argument (Koller & Goedhartz, 2005).

Nonetheless, the side effect of the project financing are bundled in the WACC, in opposite for the interest payments, principal payments or tax benefits from those that are excluded from the cash flows).

The reasoning behind the methods was already introduced since it relies on the discount of the predicted cash flows of the firm, which outputs the enterprise value:

$$Enterprise\ Value = \sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{n+1}/(WACC - g)}{(1+WACC)^n}$$

The equation stresses the importance of defining an explicit period (n years) and terminal growth rate (g) already developed in the previous sections.

From Miles and Ezzel (1980), the weighted average cost of capital is the rate at what those cash flows are discounted and therefore it depends heavily on the capital structure (and its

weights averaging the market values of equity and debt), since the different sources of financing require a different return (and also imply diverse levels of covenants):

$$WACC = r_e \times \frac{E}{D+E} + r_d \times \frac{D}{D+E} \times (1 - t_c)$$

There are different assumptions in terms of the considerations about the level of debt. However the reasoning is very understandable, one of the assumptions stated by Modigliani & Miller (1963) turns it less effective. It says that in the absence of taxes, leverage has no impact on firm value; in practice, it is ignored the interest tax shields, as well as the possible bankruptcy costs. The equation may derived so that it considers a constant debt level (Modigliani and Miller, 1963) or a constant debt ratio is based on Miles and Ezzel (1980) and Harris and Prigle's (1985) model.

Comparison between APV and WACC permits to conclude that although they reach identical values, when properly formulated, it is more practical to apply the APV method when the firm targets the dollar level of debt outstanding overtime, and the WACC approach when the firm instead intends to maintain a fixed debt/value ratio. (Inselbag & Kaufold, 1997).

Nevertheless, several firms' peculiarities as intermediated credit, bankruptcy costs, international financial engineering projects, etc., are still easier to value separately rather than through a WACC. Therefore, the generalization of the method to complex situations (or companies undergoing facing specific projects) remains a challenging issue. (Farber, Gillet, and Szafarz, 2006)

1.2.3. Equity Cash Flow and DDM Model

The equity cash flow (FCFE) includes debt payments (principal and interests) since, as it was stated by Ruback (1995) but in this case it is discounted at the cost of equity, although the FCFE is based on FCFF.

$$Equity\ Value = \sum_{t=1}^{n} \frac{FCFE_t}{(1+R_e)^t} + \frac{FCFE_{n+1}/(R_e - g)}{(1+R_e)^n}$$

The rational approach of this model, from the shareholder point of view, is its main comparative advantage (Sorensen & Williamson, 1985).

Furthermore, depending on the payout ratio the ECF method may be based on the same cash stream as DDM. According to Farrel (1985), the reasoning of the model is about performing a perpetual annuity with a constant level of payments and assuming the growth level of the company is stable. The equity value (V) can be defined, as the ratio of the dividends (D) and the percentage required return (k):

$$V = \frac{D}{k}$$

Actually, being D the next year's dividends, it can be regard as growing at a constant rate (g):

$$V = \frac{D}{k - g}$$

Nevertheless more complex dividend discount models include the growth at a different pace among time.

Penman (1998) proved that the common techniques in the valuation field can be transformed in a dividend discount model with specificities sin the terminal value calculation. It is also stated how ironic this is, since the DDM has been avoided because of the difficulties implied in terms of performing terminal value forecasts, in preference for the choice of DCF or residual income techniques. As a matter of fact this method will be performed as complementary analysis in the upcoming valuations.

2. Other Models

The importance of finding the perfect valuation model is proven by the fact that different approaches keep blooming as time goes by. It is important to state that every method is a different path following the same *moto*, therefore they should yield the same conclusions (Young et al.l, 1999).

The implications of using more than one are the regard for consistency among models, the comparison should be done directly and realize obviously that the disparities between them are caused by different assumptions. Nevertheless, there is some consistency among frameworks that should be kept in mind so that it is possible to arrive to a fair value range.

The theory and the practice of valuation are perceived differently from the actors of the financial markets. The practical side personalized by "investment bankers and dealmakers (…) are used to go for multiples of current earnings or cash flow for comparable companies or transactions". On the other hand, financial economists teach their students and followers to perform DCF, based on CAPM. However, it is interesting to understand that the outcome of both achieve similar values (Luherman, 1997).

2.1. Multiples

Until now the referred methods were based on only intrinsic parameters and flows of the company. It is a relative based methodology as it is based on comparable companies' expectations and financials to regress the valuation.

According to Lie and Lie (2002), besides the choice of the right tools – meaning the multiples to be performed -, one of the main challenges is about choosing an accurate peer group. Therefore the reasoning that is going to be applied after collecting data about same industry (Goedhart et al., 2005 emphasizes the base on the SIC code), geographies and size players, will be a statistic approach that outputs a group based on similarity: cluster analysis as it was

developed by Gupta & Huefner (1972) and Barnes (1987). Both applied information about the industry and financial ratios with very acceptable results. There is evidence when building the "representative value" of the group, the distributions are positively skewed, i.e. the mean of the multiples are larger than the medians which conducts to a median approach, following Lie & Lie (2002) conclusions.

There are direct and indirect multiples in the sense of yielding the equity or the enterprise value. As a matter of fact it is stated that the estimations that output asset values are better (Liu et al., 2000) because they are not manipulated through changes in capital structure (Goedhart et al., 2005), as the enterprise value to EBITDA (Kaplan and Ruback, 1996). From the equity side it is the Price Earnings ratio.

Equity and enterprise value multiples require an estimate of the value of the equity or assets of a comparable firm (or an average of the industry) in the numerator and a measure of revenues, earnings or some other metric where the numerator scales on in the denominator (Damodaran, 2005a).

There is also the transaction multiples, a biased tool, as it is really hard to find comparable deals and as it already incorporates premiums paid. Nevertheless the analysis of the premium paid is worth it (Kaplan & Ruback, 1995). The method has a complementary stake in a valuation of a company, as by itself is not enough (Kaplan and Ruback, 1996; Goedhart et al., 2005). Additionally, Alford stated in 1992, that multiples' efficiency is enhanced when used for large companies.

2.2. Returns-based Approach

This approach is based on the gap achieved between the company performance and the cost of financing, meaning the returns and the cost of capital. The main tool is the economic value added EVA. As it still conceives some discussion in terms of the consistency among the usage of book values and the discount to market values of the cost of debt, for example, it is not used very often as a valuation tool. In fact, these types of models are referred to performance management metric (Fernández, 2006). As the reasoning seems fair, it does not yield perfect results, according to Ferguson et al. (2005).

2.3. Contingent Valuation of Flexibility: Real Options and Decision Tree Analysis

The real options may be used when cash flows are linked with a price of a commodity (Froot, 1997) since hedging is highlighted by the value of "follow-on opportunities created through direct ownership of assets". Luehrman, in 1997, complements the approach by adding up the possibility of using a binomial tree analysis when the probability of success of the project is something to input, considering the real-option nature of general R&D investments and natural resources based projects.

Koller, Goedhart and Wessels refer to a second possibility as a more convenient one in the managerial panorama: the decision tree analysis. The existence of data that perfectly conveys a valuation through real options is not always possible, like reliable estimations of the cash flows and its variance, as it is more suitable for commodities for example. Hence, the usage of a sophisticated approach as real options is replaced by the decision tree analysis which is basically based on the estimation of each probability correspondent cash flow. One of the most interesting sources of uncertainty is the occurrence of an event that triggers a change in the decision. Decisions of cutting of a segment if certain result level is not achieved are also linked with the advent of a certain payoff or not.

There are variables that need to be carefully defined as the discount rate, the initial investment required, the net present value of the project by estimating the result cash flows, and the probabilities of each arm of the tree. The definition of a proper discount rate matter heavily when developing this valuation. A more simplistic method may be chosen by discounting the initial invest at the risk free and the cash flows at the proper WACC. If using the real options valuation the ideal is to find a marketable security that replicates perfectly the value of the project. When it does not exist, the best solution is the decision tree analysis.

3. Multinational Firms' Valuation

The multi business and multinational companies have specific challenges related to their valuation. In what comes to the fact that usually they are present in emerging markets, it is unavoidable to conceive the existence of a specific risk related to that. In the case of different business segments it should impact in the beta used, as it can be based on bottom-up types. Regarding taxes, it is important to check no only where the company is generating income but also if it is possible to move the income to lower tax locations and therefore what are the consequences.

Damodaran (2009) developed concrete best practices in this field. In what comes to growth of the assets it is crucial to have reinvestment amounts by business and the returns generated on each of them. Concerning discount rates it is also problematic to assess the market value of the equity for each segment. Additionally it is a challenge to perform an accurate relative valuation.

The "light side of valuation of multinational firms" yields certain trends that will be used later on in this thesis. In what comes to the usage of disaggregated numbers, defining that it is an important strategy to find a better result:

- When information lacks for the division by business segment, the best compromise is to use the industry averages for variables like operating details, reinvestment numbers or financing breakdown;
- When the diversification follows two ways like geographies and businesses, the best option is to follow common sense, as for instance if the differences are mainly in terms of industry or regions;
- When the issue are risk parameters that should be adjusted over the explicit period:

- Betas: sector/industry betas adjusted for financial leverage are more precise than specifically regressed betas
- Risk Premiums: in order to account for the presence in emerging and developed markets, the most accepted solution is to compute the equity risk premiums to every market the company is operating at and weight them based on revenues.
- Cost of debt: this parameter is particularly complex when used for multinational companies, having three main issues. (1) the risk free, since the valuation will be done in euros, therefore the currency is defined, the best proxy is the German government bond; (2) the default spread varies significantly and when the company has no rating it becomes a bigger issue; (3) the marginal tax rate to be adopted can either be the one of the country the company is incorporated in or the highest one across the countries the company operates, "arguing that interest expenses will be directed to that country to maximize tax benefits".
- Debt ratios: in order to be accurate and facing the inexistence of market value of the equity for each segment the strategy is based on the usage of consolidated values of debt and equity.

The incorporation of the interest tax shields becomes an issue in the discounted cash flow models, both WACC and APV. In the former the impact is evaluated by calculating the marginal tax rate as being part of the cost of capital through the after-tax cost of debt incorporation. In the APV there is a specific item in the valuation of the interest tax shields.

B. PERSPECTIVES ON MERGERS & ACQUISITIONS

The phenomenon of the integration of two companies is highly complex not only the value computation that it accounts for but also the process itself, from inception of the idea, negotiation to integration.

According to Harford (2004), behavioral and neoclassical models explaining the occurrence of mergers achieve different conclusions. If neoclassical justifies it by the fact industries are responding to shocks reorganize through merger and acquisition, creating a clustering of merged activity; the behavioral model is based on rational managers take advantage of consistent pricing errors in the market to buy real assets with overvalued stock of their own company.

1. Types of Transactions

There is not only one criterion in terms of defining the type of deal to be performed. It is based on the structure of the post-merger entity but also in the reasoning for it. Truly, the analysis and definition is part of the DNA of the new company particularly in terms of tactic to be chosen in order to reach success: proper valuation of synergies, adequate integration process and perfect timing and objectives demarcation.

According to Damodaran (2005c), the threshold is based on the external role of the buying unit, either another firm or a group of investors (either from inside or outside the company). If falling in the first case, the titles are mergers, consolidation, tender offer and purchase of assets. If it is performed by other managers or outsiders it is a buyout. The takeover occurs when the control of the acquired company is transferred to new shareholders (Ross et al., 2005). The other three types distinguish between the existence of the bought company after the transaction (the merger), the consolidation for the creation of a new company and the tender offers for hostile and it is based on getting the control by buying shares to the stockholders without the approval of the board of directors. In the end it is a merger because it is likely that the bough company becomes part of the acquirer (Damodaran, 2005b).

The reasoning behind the bought has different implications in terms of synergies to achieve, as well as, the implementation and integration of the corporations' future growth opportunities. Considering the main advantage to take from the merger or acquisition, there are five rationales: to deal with overcapacity through consolidation in mature industries; to roll-up competitors in geographically fragmented industries; to extend into new products and markets; to exploit eroding industry boundaries by inventing an industry (usually falling to an intensive vertical integration); (or) a substitute for R&D (Bower, 2001). It is worth to deeply develop the ones that are more likely to be related with the deal to be analyzed (related with the next topic of integration course).

2. The post-merger issue

Depending on the type of merger certain measures are urgent to be taken, as well as an attitude towards the companies to be integrated employees (Bower, 2001).

The M&A as R&D (Keller, 2011) example is the well-known company Cisco. They keep on building industrial-strength evaluation processes so that it is first-class business with in-house technology. In these cases it is crucial to hold on to the talent since the foundation is related with technology development; cultural due diligence is sometimes forgotten but in this specific cases it gains importance since there is no time for slow assimilation.

If a new industry is emerging and tries to establish its position, in case of EDP Renewables and Martifer the point is to integrate two business whose relation is vertical, and boundaries are eroding (Ghauri and Buckley, 2003), since they are already partnering in different parameters. In terms of problems after acquisition it is important to drive the integration by specific opportunities to create value. It's about being as more efficient as possible in terms of production, development and implementation. As a matter of fact for the acquired company it is stated that it is often seen as desirable: it takes a massive amount of money to build a sustainable company in technical markets and in terms of competition it is easier to beat them (Martifer). There are not enough cases to build on conclusions. However some are really successful ones as Microsoft and Cisco; It is a lot more simple to buy technology that is ready to be used – can be readily integrated. The main task when post merging is the definition of key-people: the expertise is far more valuable that the technology developed so far. The size of the companies will also struggle the acquired one that is going to feel to part of a more bureaucratic one. The motto is "Need for speed" and "Your people" to integrate and avoid non-invented here syndrome.

Nevertheless it can be classified as the industry convergence M&A as well. The main examples are related with telecom and computer industry converging. It is supposed to follow a sequence of steps as receipt: meeting financially and accounting; rationalizing the nonessential processes; prune businesses not meeting the strategic objectives of the merged entity.

Some frameworks from Strategy may be really useful in this field: resources-processes-values as a tool to value the problems arising in different types of acquisitions and getting profit of information systems advantages (Henningsson, 2007).

3. Value Creation and Synergies

The value creation ability of an M&A transaction has been constantly questioned. There is an investment community's skepticism toward these deals, since emotions take the part for some CEOs. There is a certain belief accepted by academics towards the fact that any M&A makes profit out of it.

Several detailed analysis have been performed about whether the generation of value occurs or not, and therefore it shows among 5 years after the announcement, on average, the excess returns are negative to the acquirers (Loughran and Vijh, 1997). Bruner (2004) made a study effort to show that M&A does pay. According to his view, empirical studies whose historical period of analysis and sample are not biased, reach statistically significant results, concluding that acquirers usually earn the hurdle rate. Additionally it is stated by Bruner as well that it generates abnormal positive results for the combined shareholders.

The existence of strategic sense when performing a merger or an acquisition is assumed as a ground rule. However, several authors Schleifer and Vishny (2003) and Rhodes-Kropf and Vishwanathan (2003) stated that merger waves result from managerial timing of market overvaluations of the acquired firms. Additionally there is research by Mitchel and Mulherin (1996) arguing that the mergers are caused from industry's economic, technological or regulatory environment changes.

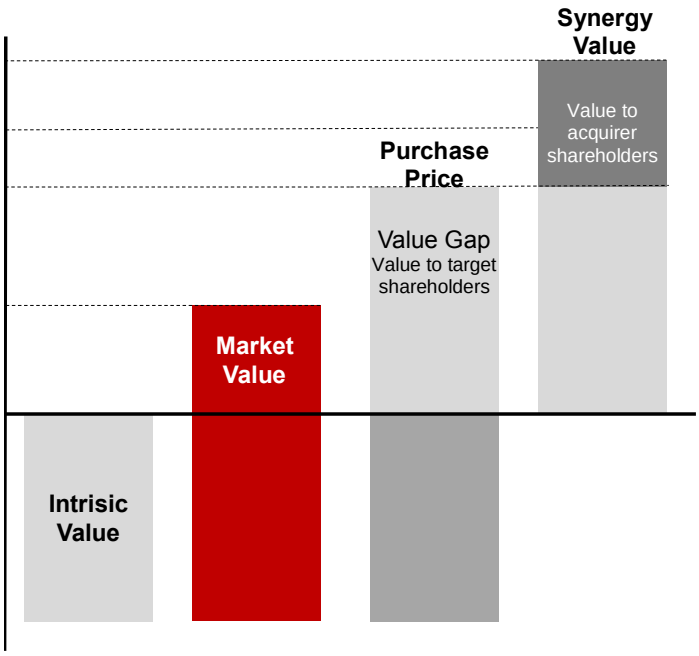


Figure 2 The M&A valuation method

Source: "Are you paying too much for that acquisition?", Eccles et al., 1999

Nevertheless, when two companies get together, either with one subordinated role or not there are advantages companies are willing to transform into value. Therefore the main position is about doing a good diagnostic when checking if the transaction is worth it. In fact synergies, as a concept, are a set of transformations in the company that are only possible due to the fact that a new company is in charge. Sometimes companies are underperforming due to inefficiencies and misleading management and this way value is created based on efficiency improvements, rather than overlapping activities that permit cutting costs, for example (Eccles et al., 1999).

Mathematically, and from the shareholders' point of view, Koller et al.. (2010) defines the value created for the acquirer:

$$\begin{aligned} &\textit{Value Created for Acquirer} \\ &= \textit{(Standalone Value of Target + Value of Performance Improvements)} \\ &- \textit{(Market Value of Target + Acquisition Premium)} \end{aligned}$$

There are two types of extras when a transaction is about to be performed, where one of those may define differently depending the relationship post-deal. If there are synergies they may urge in the creation of a new entity and it can be cost or revenues based; if the company has nothing to do with the portfolio of the acquirer the reasoning behind develops only efficiency upgrades based on management changes or introduction of a new administration philosophy. Moreover, there is control premium. Especially when companies are dispersed among shareholders is not easy to buy with cash, but it is the best way to take control over the company since when it is paid through shares the dilution of power difficult the changes and the improvements that they pretend to develop.

The classification is divided between operational and financial, by Damodaran (2005b), providing a practical insight of such. Operating Synergies can be based on scale economies, scope or vertical integration; higher bargaining power either in terms of suppliers and customers (Porter, 2002); growth in new or existing markets based on knowledge or experience; vertical integration or complementary skills (e.g. manufacturing efficiency and logistics). On the other hand, finance related synergies are divided into: application of excess cash to high-return projects which were blocked by lack of funds; profit out of tax shields that were not even being achieved due to negative results and diversification.

Nevertheless this last argument is considered a wrong one, as an investor is more efficient diversifying his own risk in terms of its portfolio.

4. Valuation of Synergies

If valuing the two entities and the potential value of the new merged company, by difference it is possible to achieve an accurate number for the synergies. Nevertheless, some other specific methods are specified by Zenner et al.. (2008), as trading multiples, precedent transactions and discounted cash flow valuation.

For the first, the trading multiples that were already pointed out as being sometimes not very reliable for the negotiation implications, the acquirer ends up delivering a greater premium than it should be (the winner's curse), and also the difficulties in finding a comparable, as transactions are often unique. Concluding, both trading multiples and precedent transactions methods carry a complementary nature.

Regarding the discounted cash flow the point is about analyzing specific value created by being a merged entity instead of two separate companies. The figure presented in topic 3 of this

section shows the perspective of performing the two standalone valuation, the optimization of the management of the target and the synergies. To achieve those it is necessary to adjust the expectations for the free cash flows from an operational and financial side.

5. Method of Payment

The control is an issue in the sense of the method of payment that is going to be used cash or stock (Kroptf et al..) or both. Cash targets are undervalued relative to stock targets. On the other hand, cash acquirers are less overvalued than stock acquirers.

Economic shocks may be the fundamental drivers of merged activity, but misevaluation affects how these shocks are propagated through the economy. Misevaluation affects who buys whom, as well as the method of payment they use to conduct the transaction. The future entity's capital structure is highly affected by the type of transaction since the dilution of shareholders' power is a very tickling issue when approaching a target. The amount to be paid may also achieve a flexibility sense if it is linked with the next year's performance of the company: metrics may vary from market share to operational margins (Zenner, Matthews and Marks, 2008).

Corporate taxes are probably the main reason why firms seek to qualify for pooling, rather than purchase accounting: when pooling is used, target shareholders postpone the payment of tax on capital gains until they sell the stock of the acquirer, which they've been given. Purchase accounting, on the other hand, requires immediate payment of tax, since the target's assets are taken to the acquirer's balance sheet at transaction value – which generally includes significant premium (Damodaran, 2005c). This is also connected to the form of payment, as cash deals will eliminate any potential for tax savings.

6. Control premium

As it is illustrated by the figure in the topic 3 of this section, it is possible to understand that the market value is not the same as the market value (being the market value, the amount the market is willing to pay for the company). Based on an empirical study performed by Sirower and Sahni, in 2006, the premium paid is nearly 36% covering a sample of 300 deals.

Additionally there is control premium: an excessive value the acquirer is willing to pay in order to take the control. This extra return may generate a less confident position from the shareholder as this way it increases the shareholders' value at risk if no post-acquisition synergies are realized (Sirower and Sahni, 2006).

$$Shareholders' Value\ at\ Risk\ (SVAR) = \frac{Premium\ paid\ for\ the\ target\ company}{Market\ value\ of\ the\ acquiring\ company}$$

7. Synergy-Premium Model

The premium paid over a company's present market capitalization represents not only the growth opportunities that the market is not recognizing, but also that the acquiring company is demitting a part of the synergies value by offering a larger price (Sirower and Sahni, 2006).

The definition of a maximum price is crucial to guide the negotiation process so that emotional drivers do not influence the final decision, avoiding a winners' curse situation. Hence, besides the actual value of the transaction, by assessing the company and the expected synergies, there are historical data in terms of premium paid and the Synergy-Premium model (Sirower and Sahni, 2006). Both methodologies will be used in the definition of an offered price. The first covers the difference between the price paid and the market capitalization of the bought company, defining an industry trend. The second is a more generic approach, although relying on the specific case data.

Concerning, the Synergy-Premium model, it is based on the definition of a line that relates the revenue and cost synergies in percentage of the target firm's respective structures of revenues and expenses. Additionally it covers the infinite combinations of both percentages justifying a certain level of premium. However, the model conceives certain flaws as it assumes that the synergies will immediately occur and that they will be only towards the bought firm ignoring the impact over the acquiring one.

$$\%\,SynC \;\geq\; \frac{\pi}{1-\pi} \times (\%P - \%\,SynR)^{3}$$

8. Integration and Transaction Costs

The concept of synergies is intuitively presented as related with a positive impact of a transaction between two companies when integrating. As a matter of fact, it cannot be disregarded that the effectiveness of the latter occurs at a certain cost therefore research on the topic was required.

Hence, it will be defined as transaction costs the ones that are relative to the payment and negotiation, from investment bank fees to other external consultants, for instance to perform the due diligence towards the acquired company. On the other hand, there is the integration costs that account for the costs of successfully merge a company and transform the potential synergies in profit (Roberts, 1997).

When assessing a certain deal, the more accurate perspective to calculate the integration and transaction costs, is obviously the internal one. Nevertheless, it is not common to have inside

[3] %SynC is the pre-tax cost synergies as % of original target's operating cost base; %SynR being the pre-tax revenue synergies as % of original revenue; π being EBIT margin; and %P being the premium paid as % of the target's market value before the bid.

insights covering this issue, therefore the approach should be performed case by case, according to Shenglei (2013).

INDUSTRY AND COMPANY ANALYSIS

The companies that are going to be assessed are not only in different parts of the supply chain of a certain sector but also in several industries and geographies. They conceive a different type of mission for their business as for that. In this sense, the performance of a complete overview of green energy production and metal infrastructures manufacturing is going to be settled; followed by the EDP R and Martifer's overview.

A. INDUSTRY OVERVIEW

The industries that are going to be considered are:

- renewable energy: wind and solar plants implementation, output distribution and exploitation;
- metallic construction.

In terms of the activities of the companies, Martifer not only produce the energy systems but also explore some of the production of wind farms and solar parks they hold. The merger is expected to provide improvements in the energy production of both companies as well as to decrease the costs of some materials for the components of devices as the steady state is likely to be achieved by optimizing the production capacity of energy systems. In what comes to the metallic constructions the relationships the EDP R's parent company (EDP) holds worldwide may promote the competitiveness of Martifer, However the main impact is also in the costs of production of the turbines as it would be an internal price instead of a market one for EDP R wind farms. The merger is also keen on the development of projects in this field as for the satisfaction of the diversification process of EDP Renewables towards different energy sources.

First of all, the greater emphasis of this section would be on industries' analysis and then on the companies' overview.

1. Renewable Energy

1.1. Introduction

This section aims to introduce the renewable energy sector as it stands for a type of energy. Not only companies face a certain number of competitors in the production of green energy in an integrated market, but also a considerable kind of substitutes since there are several sources of energy.

Regarding energy metrics, it is possible to clarify certain measures like gigawatt and gigawatthour which is the production times the number of hours of the day, corresponding to the production if at a certain level during all day.

Within the renewables, the type of energy is defined according to the natural resource it is based on. It is interesting to compare the competitiveness of each, especially because they are perceived as more expensive than the non-renewable sources (coal, oil, natural gas).

The renewable energy sector includes a total revenue of US $ 2,62 trillion worldwide (2012), accounting for biofuels, equipment and project development. Additionally there is within the utilities sector the production of energy with the referred equipment that by itself generates US $ 1,75 trillion in the regulated branch and US $ 28,92 billion for the unregulated.

BPI, the Portuguese bank, released in March 2011, information about the average investment per MW installed, based on projects in Portugal, according to the type of energy. It is then possible to understand that the renewable sources of energy have no costs of material as it stands for a priceless type of natural resource, nevertheless the operations and maintenance are more expensive, having as well a shorter expected life.

In thousand euros	Wind	Solar	Mini-Hydro	Biomass	Large Hydro	Natural Gas	Coal
Investment/MW	1300	3500	1200	2500	1500	650	1600
Costs O&M	9%	12%	28%	20%	11%	8%	11%
Costs Material	na	na	na	46	Na	10	111
Consumption of material/MWh*	na	na	na	1,4	Na	6,3	0,3
CO_2Emissions (Ton/MWh)	na	na	na	Na	Na	0,4	0,8
Expected Life (years)	20	20	40	30	50	30	30
Financing (years)	<15	<15	<20	<20	<25	<20	<20

Table 1 Analysis of competitive information by type of energy source

*Material consumption of natural gas is in mmBtu and for biomass and coal the units is tonnes

Source: BPI: "O Sector Eléctrico em Portugal 2011"

The net generation in what comes to the assessment of the industry performance in terms of production refers to the gross generation deducted by the usage within the plant. For instance in the US values are usually shown for net generation, at least in the data collected.

The concept of levelized cost includes all the expenses of operation and maintenance involved in the construction of the infrastructure and the energy proper production. It is important to underline that the cost presented is based on a constant (in real prices) price perspective along the expected life of the technology, in a steady state, taking the most out of the capacity. It is therefore crucial as a measure to determine the minimum price to sell the output – however it is not directly comparable with fixed tariffs (defined by the regulator) to be applied within a shorter period of time than the expected life of the asset.

In Eur/MWh	Normalized Cost		
	Lower	Upper	Historic Average
Wind	59	83	71
Solar	210	276	243
Mini-Hydro	56	90	73
Biomass	97	138	117
Large-Hydro	45	67	56
Natural Gas (without/with CO_2 costs)	59/64	88/93	73/79
Coal (without/with CO_2 costs)	49/60	69/80	59/70

Table 2 Normalized Cost based on Project type in Portugal 2011

Source: BPI: "O Sector Eléctrico em Portugal 2011"

Furthermore, there are concepts within the slang of the sector important to clarify. According to the conditions of production, a certain power plant or farm of energy production attains a value for its productivity. The installed capacity (full capacity of the plant) is then affected by equipment failures that create less availability although usually it is close to 100%. The capacity or production factor is the ratio of its actual output over a period of time, to its potential output if it were possible for it to operate at full capacity indefinitely.

Using some data from the Portuguese authority for the regulation of the energy business, Entidade Reguladora dos Serviços Energéticos (ERSE) - Energy Services Regulatory Authority, it is possible to realize the difference between installed capacity, availability to produce and capacity factor (analysis complemented by source of).

The solar energy is not competitive by the moment. Nevertheless, there are high expectations about the efficiency of the technology, for example Portugal holds a very remarkable number of hours of sun, 12 per day, on average. Additionally the cost of investment due to the development of the machineries is decreasing (by 40% according to Ernest & Young, in 2011).

The wind option is more expensive than the coal, and similar to the natural gas. Considering the existing relationship between the natural gas and coal prices with the oil, for the wind farms being competitive the oil price should achieve €104/barrel when comparing it with the natural gas, and to €200 when establishing a comparison with coal. The biomass is not competitive at the moment but as very important competitive advantage when compared for instance with the large-hydro – the most efficient in terms of renewables –as it is not dependable on any natural resource, and due to that there are no stops in production as for wind, sun or rain levels.

	Wind	Solar	Mini-Hydro	Biomass	Large-Hydro	Natural Gas	Coal
Availability	97%	98%	99%	90%	99%	95%	95%
Production Factor	27%	20%	24%	90%	27%	90%	90%

Table 3 Availability and Production Factor by type of energy source

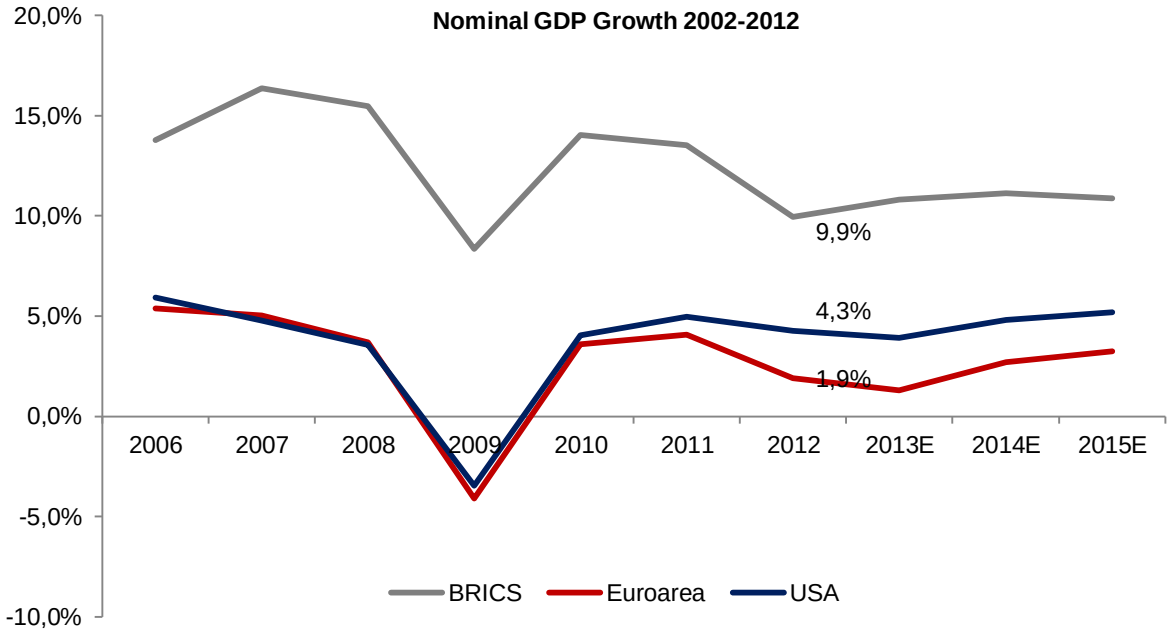
Source: BPI: "O Sector Eléctrico em Portugal 2011"

The production factor is extremely lower for wind, solar and hydro types of energy production as they are more volatile, being fundamental to consider certain amount of probabilities not transforming into realities in terms of production.

Finally, and according to the Global Wind Energy Council (GWEC), the market drivers in common to the renewables are the environmental concerns, security of supply and economic rationale.

1.2. External Context

The USA and the Euroarea have been facing several challenges since 2008. It is indeed important to recognize the impact of such to the willingness to promote renewable energy as it is requires investment and financial support to compete with the non-renewable sources. The GDP growth was actually negative in the Eurozone in 2012. Nevertheless the BRICs behavior is more interesting as it is likely to follow a deep strategy towards renewables.



Graph 1 GDP Growth from 2006 to 2012 and Forecast from 2013-2015 in USA, Euroarea and BRICS
Source: IMF

In order to properly assess the renewable energy it was performed a PESTEL analysis that has a 360 degrees assessment of the reality of the industry.

The industry itself presents some risks due to the substitutes prices that although pollutes, they are more competitive. However, renewables production benefits to a large extent from regulated tariffs, volume hedges (the grant of a higher hourly tariff when generation is lower), power purchase agreements as pricing (PPAs), fiscal benefits, other programs within the

energy policy, which strongly reduce the inherent risk of the business and the exposure to market fluctuations, thus lowering the beta. The political framework is quite impactful as well as the energy policy. In fact there is some political instability (for example the case of Middle-East and Koreas) that impacts fiercely on oil prices, hence influencing the renewables. Additionally, not only the environmental issues seem to have a great influence but also the legal ones. Since energy has a strong link to the natural resources state of mind and natural catastrophes, as the earthquake in Japan, it is part of the questions to take into account.

Factors	Opportunities	Threats
Political	▪ New Energy policy as popular measure ▪ Availability of funds for those type of investments as for taxes exemption or reductions ▪ Regulatory developments: International Agreements as Kyoto Summit ▪ Growth in private sector in terms of the usage of this type of energy	▪ Growing deficit and preoccupations of countries in controlling debt through reducing expenses
Economic	▪ Rising oil price (Appendix 1) ▪ Significant competitiveness increase of some types of green energy as solar	▪ Less subsidies for the renewables energy sector
Socio-Cultural	▪ Increased awareness of society in terms of efficiency and non-pollution ▪ Availability of more professionals and skilled people with interest in the area	▪ More and more social problems demanding help from the government and therefore less availability to invest in energy
Technological	▪ Increased investment in laboratories and technological improvements for production, storage and distribution of energy	▪ Improvements in terms of efficiency of other types of energy
Environmental	▪ Climate changes as a signal of the importance of taking on action	
Legal	▪ Open market: possibility of choice of type of energy (and supplier) ▪ Less bureaucracy in terms of having own energy production at home (through renewables-based technology) ▪ Regulation: Kyoto Protocol and new Global Climate Protocol	

Table 4 PESTEL Analysis of the renewable energy industry

1.2.1. M&A activity in the sector

The M&A activity in this sector is expected to keep on rising, according to Ernst & Young. Nevertheless, the industry is under a fragile situation, since challenges are out there: the Eurozone crisis with direct implications in the willingness of governments to promote the usage of green energy and the shale gas boom. The tax credit uncertainty (PTC)[4] was promoting certain bottlenecks in the effectiveness of intentions of new investments. The Program was extended by President Obama for the next 10 years, in an estimated amount of

[4] Reuters: http://www.reuters.com/article/2012/08/14/us-usa-obama-energy-idUSBRE87D0BI20120814

17400 million dollars, creating stability in terms of the expectations for the investment in the renewables in the USA.

It is unavoidable to talk about a common trend among PIIGS (Portugal, Italy, Ireland, Greece and Spain) in terms of incentives towards renewables. As a matter of fact, there is great uncertainty about the impact of the cuts on those countries green energy activity since they are struggling due to over deficit in their debt, clawing back on their subsidy commitments.

1.2.2. Considerations by Geography

The regions that really matter in terms of areas of activity of the companies to be assessed are the Europe, the USA and Brazil for wind energy production and the countries where it is possible to find investments in terms of solar based energy are Portugal, Spain, Romania and Brazil.

1.2.2.1. Europe

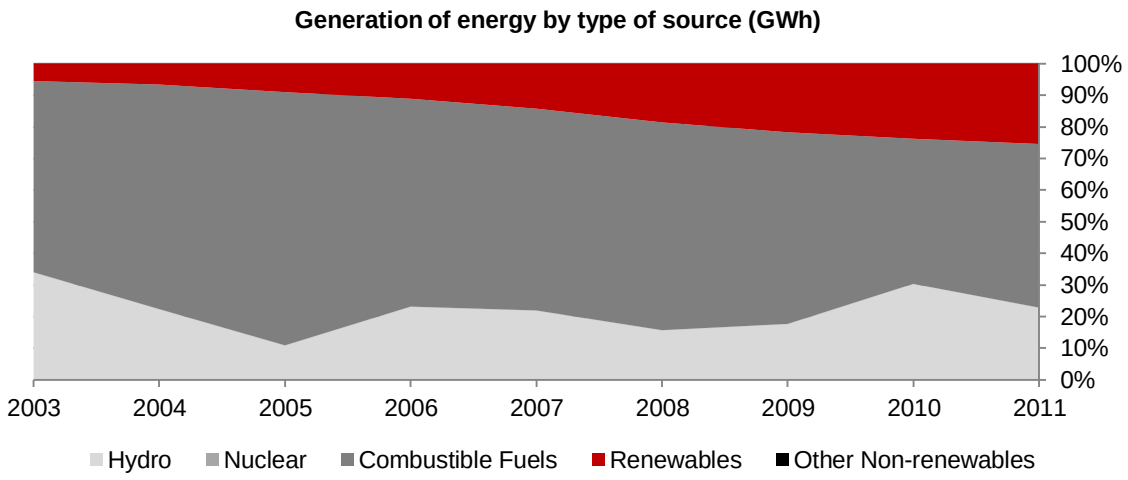
Europe defined specific metrics to be achieved until 2020, called "20-20-20" whose objectives are to reach a 20% reduction of greenhouse effect gas (compared with levels of 1990), 20% of gross consumption provided by renewable energy and 20% reduction of the consumption.

The progress of the program has been assessed and, as a matter of fact the 2010 renewable energy shares of the committed countries, as whole, were at the level of or above 2010 targets set out in their national plans. If the growth rates achieved in 2009/2010 were kept to 2020 more than half (11 out of 20) of the Member States would not accomplish their objectives. The currently implemented policies risk being insufficient to trigger the required renewable energy deployment to reach the 2020 targets and, summing up the financial crisis – since the cost of capital has risen in several of the countries – the willingness to improve the amount invested is lower. A complete table of the performance of the countries is shown in Appendix 2.

1.2.2.1.1. Portugal

Portugal is under a specific plan that gathers several incentives to the development of the renewable energy. Actually, it is something happening for the last decade but, although there is turmoil due to the crisis, the new approval occurred in a public memorandum of the XIX Constitutional Government on the 10th of April of this year[5] – National Plan for the Energetic Efficiency (PNAEE for 2016) and Renewable Energy (PNAER for 2020).

[5] In Public Diary: *Diário da República, 1.ª série — N.º 70 — 10 de abril de 2013 (10th April 2013)*



Graph 2 Generation of energy by type of source (GWh) in Portugal from 2003 – 2011

Source: Eurostat

The renewables in Portugal already represent a considerable value of the output produced since in 2011 it already accounted for 25% of the total. Additionally there is approximately 23% coming from hydroelectricity which is also considered a clean source.

1.2.2.1.2. Spain

As the companies within the framework have a strong link to the European, and more specifically to the Iberian region, it is important to develop on the MIBEL (Mercado Ibérico de Electricidade). The structure has the advantage of providing a better perspective on the arrangement of the electricity produced as, for instance, the consumption and production may be adjusted in real time and therefore there is a lower level of waste. Moreover, since it conceives a certain attachment within the members, the agreements for medium term are easily made, being, this way, bilateral agreements over the counter.

Considering the legal framework of incentives, some of the subsidies have been shuttled off. This is leading to a significant number of solar panel manufacturing plants closing and unemployed people, according to KPMG[6]. On the other hand, the pricing schemes by being regulated are also subject to updates and changes. The options for the pricing of energy in Spain included a fixed tariff and a market option. The first one is going to be developed further. The market option is about being subject to the electricity market price (spot, forward or bilateral contract) adding up a premium per megawatt imposed. On February 1st of 2013, the Spanish Cabinet approved an RDL (a Royal Decree-Law) to carry out urgent measures in the electricity sector. The reasons given for the adjustment were related to the higher cost of renewables as a result of higher load factors and higher average remuneration (given the remuneration system's link to commodity prices) and to lower revenues given the decline in

[6] KPMG: http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/taxes-incentives-renewable-energy-2012.pdf

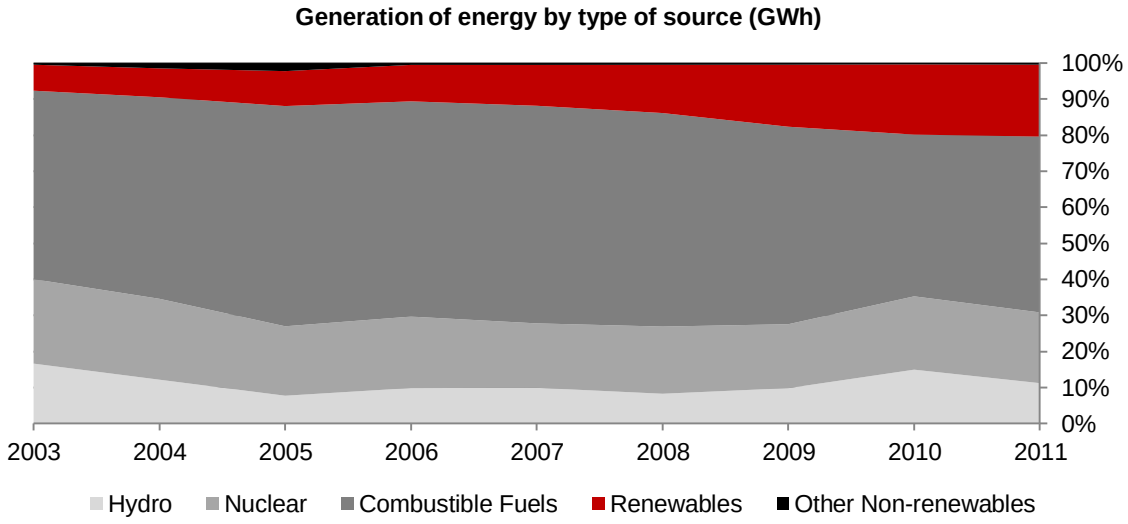
demand. The main measures approved were: Change in the annual update of regulated activities' revenues: This includes transport, distribution, islands and renewable premiums. The change is that instead of CPI, they will use underlying inflation (excluding energy and food) and at constant prices (excluding the effect of taxes). This would mean savings for the system of € 337 million, according to the Ministry of Industry press release. This change in the CPI used is effective from January 1st, 2013.

Eur/MWh	Wind	Thermosolar
Poll + Premium 2013	86,24	336,62
Feed in tariff 2013	81,6	300,15
Change %	-5,40%	-10,80%

Table 5 Impact of RDL on Renewables

Source: Espírito Santo Investment Bank Research Note 3/2013

There are operating subsidies for wind and solar energy, as well for geothermal, hydro and others. The feed-in tariff, a premium and other subsidies are the revenue streams. It is also defined the operational hours limit per year, for the wind 2589 hours (approximately 7 hours per day) and the solar plants have a limitation per year depending on the type of equipment (technology and storage capacity) varying between 2450 hours to 6450 per year.



Graph 3 Generation of energy by type of source (GWh) in Spain from 2003 – 2011

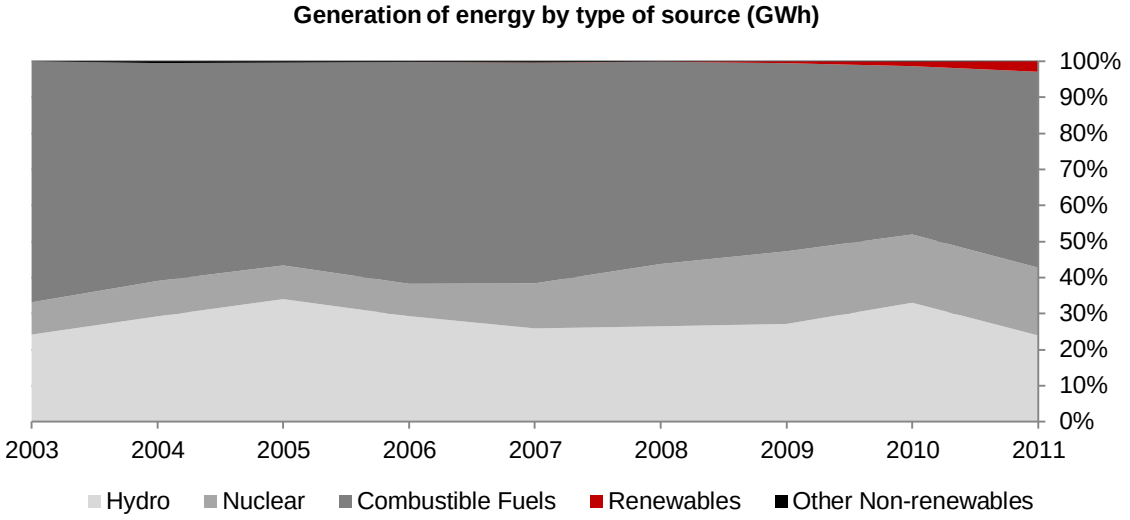
Source: Eurostat

The renewables as in Portugal represent 20% of the total and adding in it also has the hydro that hold a 10% stake in the generation of energy. However renewables are increasing their share in total, the percentage of combustible fuels is not reducing a lot.

1.2.2.1.3. Romania

Romania is trying to play a great role in what comes to the renewables energy sector, as constituting an extremely favorable environment for energy. The country's energy regulator is actually developing efforts to reduce the overcompensation and it is likely to change from 2014

on, according to Bloomberg[7]. However, by now, several projects from wind to solar were started there since in terms of green certificates per megawatt produced, they were quite higher than in other countries (6 vs. 3 on average recommended by the regulator for solar energy, in example[8]). It is expected changes in terms of the price too, because it is now equal to 55 euros, being the minimum value €27, the maximum is likely to change to 30 euros.
EDP R holds a just-started investment in Romania in solar energy. The performance is based on the hours of sunshine than range between 2,2 hours per day in January and 10,5 hours per day in July As for Martifer, they finished a wind farm construction that they will also operate.



Graph 4 Generation of energy by type of source (GWh) in Romania from 2003 – 2011

Source: Eurostat

Romania is a country in the European panorama that until very few years ago held a very conservative approach towards renewable energy. Lately a refunding of the energy policy is attracting more investment as stated above.

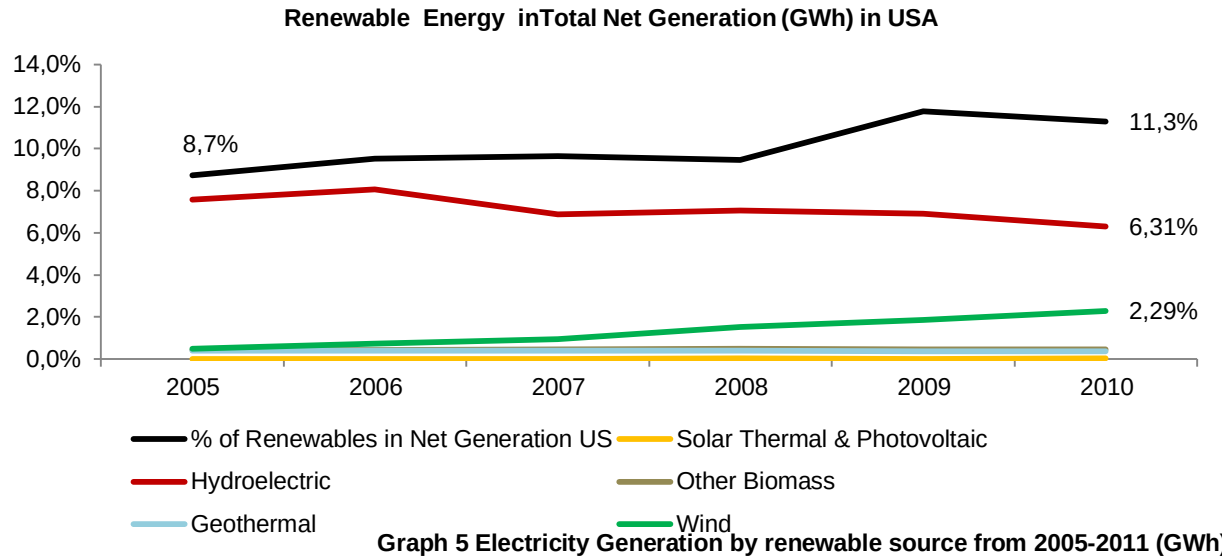
1.2.2.2. USA

The USA in December 2008 also came public with intentions of 20% of their energy being produced by wind specifically until 2030[9].

There is a relevant issue already developed previously related to the tax incentives that attract a lot of investment and therefore the expectations about the improvement of the renewables in the share of the energy produced. Furthermore it is possible to refer two other favorable regulatory schemes increasing the attractiveness of the renewables sector in the USA: the

[7] Bloomberg New Energy Finance: http://about.bnef.com/bnef-news/romania-may-cut-wind-solar-power-incentives-in-half-zf-2/
[8] Renewable Energy World: http://www.renewableenergyworld.com/rea/news/article/2012/12/renewable-energy-review-romania
[9] National Renewable Energy Laboratory (U.S. Department of Energy): http://www.nrel.gov/docs/fy09osti/42864.pdf

renewable portfolio standard (RPS) and the modified accelerated cost recovery system (MACRS). RPS stands for the definition of a minimum level of electricity production coming from renewables that refers to the 20% above specifically for the wind energy. The degree of enforcement varies across states and the quota imposed also considers the inter-state disparity.



Graph 5 Electricity Generation by renewable source from 2005-2011 (GWh)

Source: Bloomberg (including hydroelectric)

1.2.2.3. Brazil

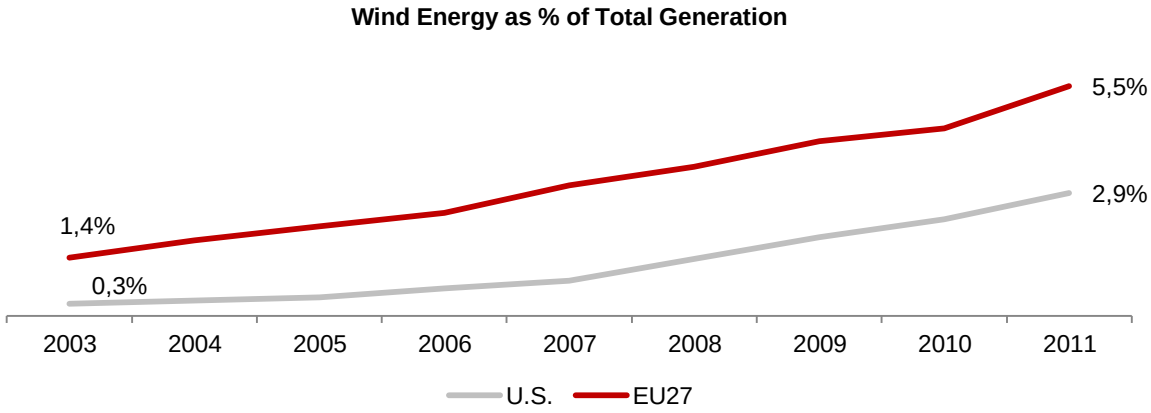
The tariffs are still defined by auction as the country is in a no feed-in tariff policy. However, Brazil is giving several incentives with financial programs to stimulate the production of energy so that 43,9% of the energy produced is from renewable sources.

The production in the Brazilian since it is decided by auction will be assessed based on the plans of the company, but the expectations show that the renewable stake in the energy generation is tending to grow. In 2011, the price of the energy in Brazil based on wind was the cheapest in the world because its wind farms are so productive ($84.50/MWh, according to the Brazilian Government).

1.3. Wind Energy

The overview of this type of energy includes an historical data analysis and predictions for the main regions worldwide. The perspectives of the production and installed capacity correspond to the understanding of the business of selling electricity and energy system (windmills) sale, respectively.

It is observable a steady growth in terms of a relative account of wind energy in % of the total generation occurred since 2008, as for both developed economies: USA and EU. The wind stake from 2003 to 2011 grew annually 34% and 19% respectively, which is on average an impressive routine.



Graph 6 Share of wind energy in the total energy generated in the region from 2003-2011

Source: Eurostat, U.S. DOE

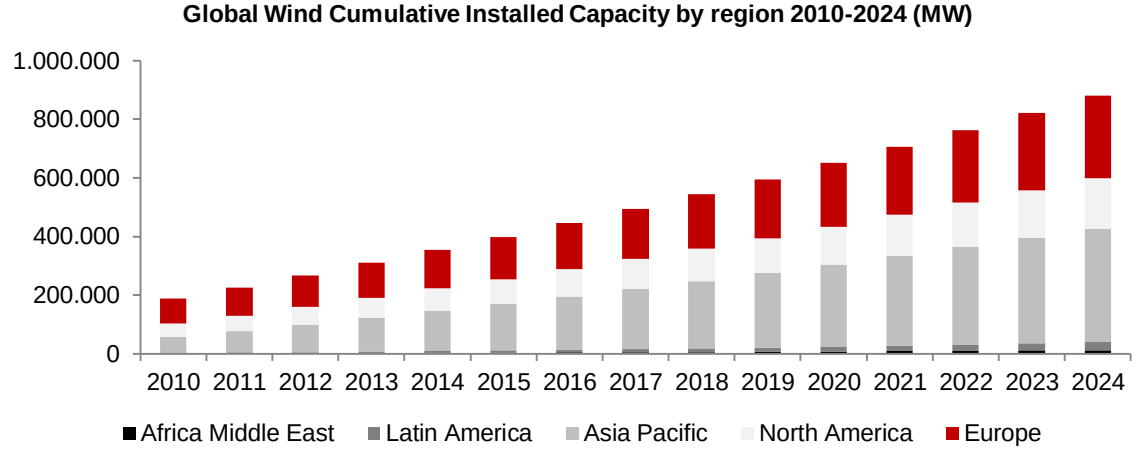
The energy growth prediction is accounting for the growth of the turbines in megawatts, as it is published by .bits, Knowledge Group.

Both industries are likely to grow in terms of prices inflation. Nevertheless, the installed capacity for the wind production needs to account for the already referred production factor, the efficiency of the company should be improved based on the expectations of the technology or other type of investments in terms of innovation. It is then interesting to understand the production of energy by region.

Later in this topic, research on wind energy will be provided, not only taking into account the energy production but also keeping in mind the energy systems.

1.3.1. Energy Systems: Wind Farm Tower

In order to analyze the wind farm tower industry the useful indicators are the "wind megawatts" and the number of turbines installed. In this context, the research was performed not only in terms of region but also with a business overview, considering the main producers of the turbines, using historical data and expectations for the future.



Graph 7 Global Wind Cumulative Installed Capacity by region from 2010-2024

Source: Knowledge Group Publications Wind Turbine Supply Chain Strategies: 2011–2025 (EER, July 2011)

Region	2013	In % of total	2024	In % of total	CAGR
Africa Middle East	2.171	1%	11.521	1%	15%
Latin America	5.052	2%	27.157	3%	15%
Asia Pacific	114.880	37%	388.323	44%	11%
North America	68.404	22%	172.317	20%	8%
Europe	119.516	39%	281.951	32%	7%
Total	310.024		881.270		9%

Table 6 Installed Capacity 2013-2024 for the wind energy by region (MW)
Source: Wind Turbine Supply Chain Strategies: 2011–2025 (EER, July 2011)

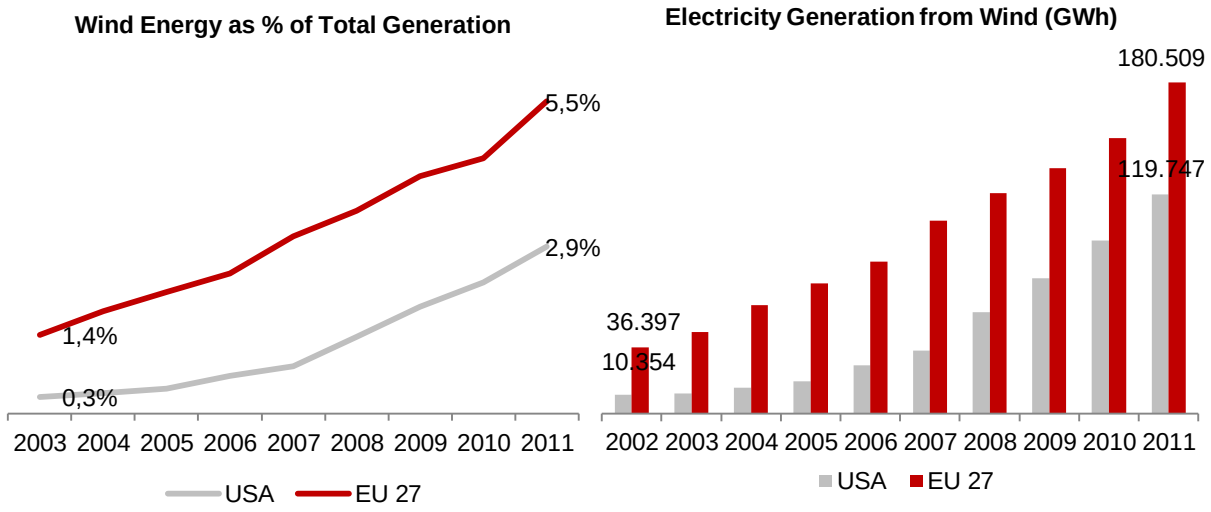
The growth is expected to achieve really high values for the next decade; however the distribution between the world regions will not change relatively. The fact is that Africa and Latin America will increase their efforts in terms of renewable energy, focusing in the wind based production. Additionally it is interesting to see that generally the world will grow per year 9%, from 2013 to 2024.

In appendix 3, more data related to the countries where the companies analyzed have investments is provided. It is a good proxy in terms of the growth of the business unit, not only in terms of sale of turbines, as well the wind farms development.

Turbine Component Breakdown (in %)	
Rotor	**25%**
Blades	14,7%
Hub	6,4%
Pitch Mechanism & Bearings	3,5%
Nacelle & Drive Train	**56%**
Gearbox	15,0%
Variable-Speed Electronics	10,0%
Generator	4,7%
Main Frame	6,4%
Electrical Connections	1,0%
Nacelle Cover	13,6%
Low-Speed Shaft	2,0%
Bearings	1,2%
Yaw Drive & Bearing	1,2%
Hydraulic System	0,7%
Mechanical Brake & HS Coupling	0,3%
Control & Safety System	**1,0%**
Tower	**18,3%**

Table 7 Wind Turbine Cost Structure
Source: NREL (National Renewable Energy Laboratory)

The wind turbine components are the rotor, gearbox, tower, foundation, controls and generator. There are two types of turbines, a more common with horizontal axis, and one with vertical; however it also may vary as being offshore or onshore but the basic structure remains. The importance of understanding the turbine component breakdown is related to the analysis of the vertical integration of the two main companies, impacting positively in the effectiveness of a merged company. The table 7 enhances the rotor and the Nacelle & Drive train as the more significant parts; in addition it is important to mention that it is based on a typical 1.5 MW turbines. The turbine manufacturers represent 70 to 80% of the total CapEx of a wind farm plant, according to Bloomberg.



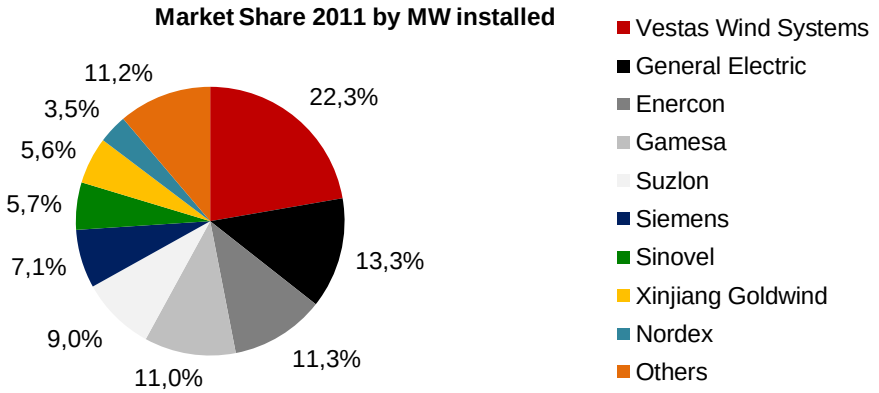
Graph 8 and 9 Overview of wind energy 2002-2011

Source: Bloomberg New Energy Finance

The total number of turbines installed was 178.195 in 2011. The growth of the number of turbines, from 2002 to 2011 is higher in terms of MW installed than number of turbines (26,7% vs. 18,7%, as CAGR respectively), showing that the type of turbines are more and more efficient in terms of capacity of generation.

1.3.2. Market Players

The wind tower industry was a more concentrated industry few years go. Lately, especially since 2010, Chinese companies entered in, making the market a more fragmented one.



Graph 9 Wind Tower Market Share Breakdown 2011

Source: Bloomberg

Besides Vestas that is the market leader, Sinovel Wind Group and Goldwind are both Chinese players, as General Electric (GE) is American and Gamesa and Enercon are European (Spanish and German, respectively). The technological expertise and R&D investment are common within the companies, however in the case of GE is not focused in renewables neither in the wind market, since they also serve the coal, oil, nuclear energy and natural gas developing generation technologies.

Type	Installed Cost (2010 USD/kW)	Capacity Factor (%)	Operations and Maintenance (USD/kWh)	LCOE (USD/KWh)
Onshore				
China/India	1300 to 1450	20 to 30	Na	0,06 to 0,11
Europe	1850 to 2100	25 to 35	0,013 to 0,025	0,08 to 0,14
North America	2000 to 2200	30 to 45	0,005 to 0,015	0,07 to 0,11
Offshore				
Europe	4000 to 4500	40 to 50	0,027 to 0,048	0,14 to 0,19

Table 8 Typical New Wind Farm Costs and Performance (2011)
Source: Renewable Energy Technologies: Cost Analysis by International Renewable Energy Agency Cost

Wind turbines account for at least 64% to 84% of total costs onshore, with grid connection, construction and other costs making up the balance. As it is stated in the table below, offshore wind farms are more expensive, with the wind turbines accounting for 44% to 50% of the total cost. In terms of the levelized cost, a 10% cost of capital was assumed. In the medium-to long-term, reductions in capital costs in the order of 10% to 30% could be achievable from learning-by-doing, improvements in the supply chain, increased manufacturing economies of scale, competition and more investment in R&D.

1.3.3. Production

Historically, the electricity generation based on wind is growing a lot in terms of gross production. Additionally it has been converted into an increase of the representativeness in the total generation by source. In general, in US the growth annually on average is greater but the process of betting more on renewables was enhanced later, as for 2001 the value of wind energy production was very meaningless, close to 0%. Lately the development provides a CAGR from 2002 to 2011 of more than 30%. In 2013, the expectations is for the wind energy to represent 4,3% of the total production. In Europe the process is in a more mature stage therefore the same CAGR yields to almost 20%.

The conversion of the wind power into energy is possible through windmills. It is typically windier in the winter than summer and in the day than during the night. Those as they run are creating energy that is then distributed through an electric line of the wind farm. Usually the energy produced is medium tension, and so that it can be transported by the regular pipes it has to be transformed into the high level.

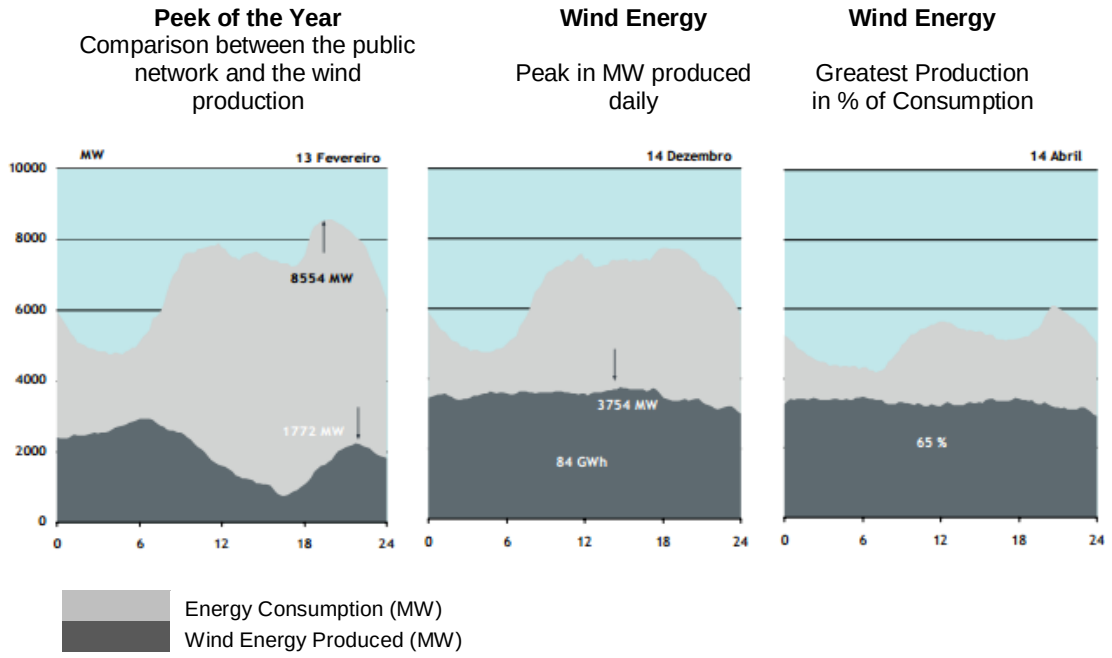


Figure 3 Energy Daily Production Overview per season

Source: BPI: "O Sector Eléctrico em Portugal 2011"

Considering figure 3, the darker part represents the wind production, while the lighter is the consumption of energy, in three different days in 2012.

For instance, the wind parks installed in Portugal, when compared with the electricity demand, show a considerably high volatility and they are not responding exactly to the timing that larger supplies were needed. The demand peaks in Portugal achieve almost 2 times the average consumption being really hard to rely only on renewable energy one day since it is also not so flexible in what comes to production factor. The maximum of energy consumed per hour based on wind was achieved in April, in 65%. The time the energy demand increases to the greatest levels is in February and it is also when the wind produces the least in terms of megawatts.

The first year factor is also important to perform a complete analysis of the expectations of production output. As a consequence of the problems that may occur in turning operational the wind farm, for example, a reliable assumption is to consider that in the first year only 25% of the time is the real load factor. It will impact in the depreciation of the year (expected life of 20 years), opex and production obviously.

1.3.2.1. Cost

As it was possible to approach in the topic 1.1 in this section of Industry Analysis, the costs of wind based energy are quite competitive within the panorama of renewable energies.

In the USA, the levelized cost of the wind energy varies by the type of tower. Obviously the onshore is a more accessible source than the offshore. So far the cost in US dollars by MWh in the onshore is close to €62 (comparing with the current exchange ratio (1 USD = € 0,7687)).

Type of Tower	2010	2011	2012	2013 (Q1)
Wind - Onshore	86,64	82,12	81,53	81,44
Wind - Offshore	181,4	200,20	221,03	217,83

Table 9 Wind Energy Levelized Cost of Energy (base cases by Technology US$/MWh)

Source: Bloomberg

1.3.2.2. Price

The price in Portugal is fixed for the next 15 years or until it attains the 33 GWh output per MW installed. In spite of in the end of 2010, the price was €92/MWh in Portugal, by now the average tariff goes for €75.

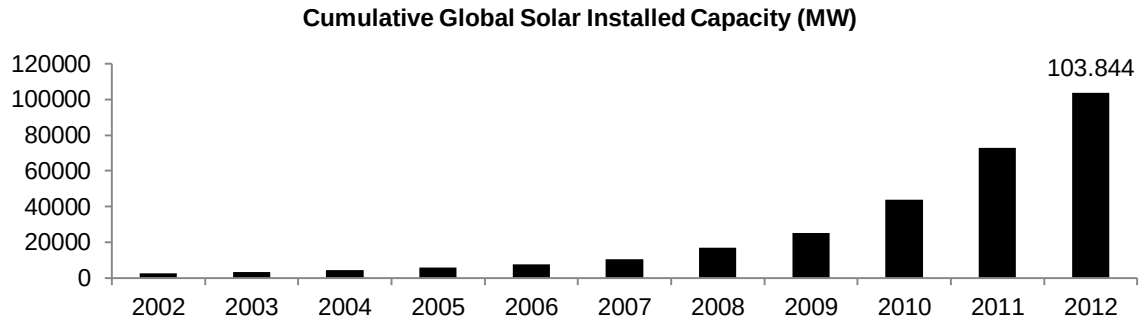
The business model has an add-in as besides the energy sale it also sells green certificates. It is then required to be registered in Renewable Energy Certificate System (RECS) since those bills are exchangeable and it pays off (per MW) for the environmental benefits of being a renewable energy producer – it works as a hidden subsidy.

1.4. Solar Energy

In fact, solar energy is the most abundant resource on earth, according to Bloomberg New Energy Finance.

The growth displayed by the solar sector to date has been impressive, with a CAGR in annual installations of ~59% from 2007-2012. Historically, much of the growth has been attributed to legislative mandates driving solar spending.

1.4.1. Energy System: PV solar modules



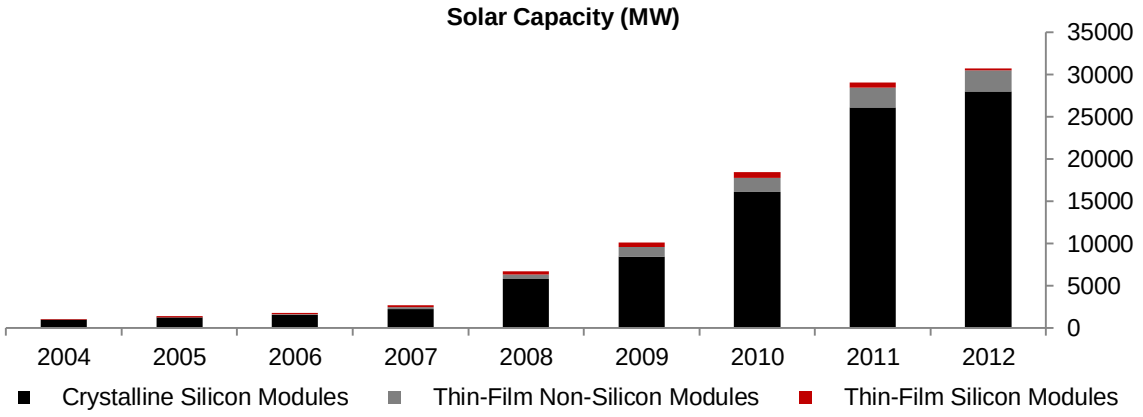
Graph 10 Cumulative Global Installed Capacity

Source: Bloomberg New Energy Finance

In order to assess the performance of the business covering the sale of PV solar modules, the installed capacity in terms of MW is a reliable source. Nevertheless the type of modules or panels is increasing, creating a higher level of complexity in the analysis. The residential and

larger projects are included in the business segment offer that most of the companies working for the global market.

From 2011 to 2012, the 100 GW were achieved, in terms of installed capacity. The solar PV modules represent only 28,7 GW of such in 2011. Until 2015 the expectation is to grow to 43,6 GW, with China, Japan and India playing a major role enhancing the growth for the period of 2013 to 2015.



Graph 11 Distribution of the Solar Capacity Evolution by type of Solar Panel

Source: Bloomberg New Energy Finance

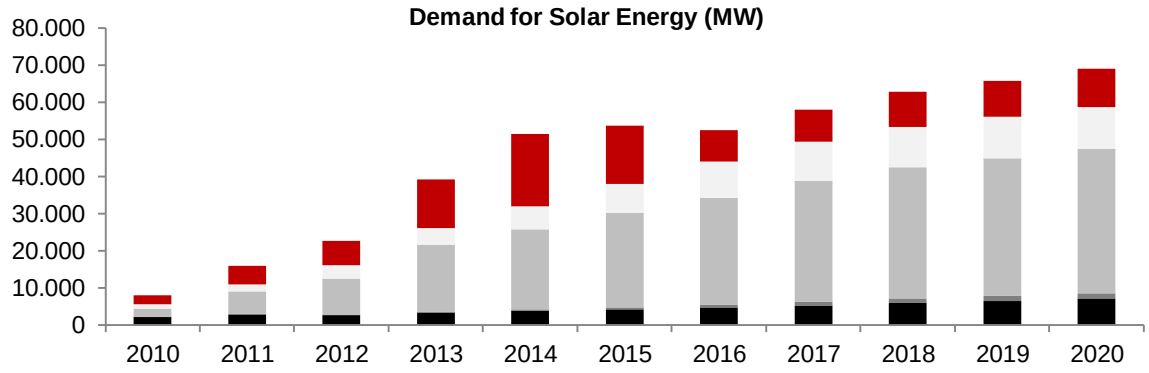
Regarding cumulative photovoltaic modules, worldwide, the last decade represented a great growth of the industry as it performed annually a close value to 50% (2002-2011), according to Bloomberg New Energy Finance.

The type of PV module varies according to the type of raw materials used: monocrystalline and polycrystalline modules, thin-film and STEG. The monocrystalline are the more efficient ones (conversion rate from 10 to 16%), with a life expectancy of 25 to 30 years, they are also the more expensive. The polycrystalline is cheaper but the efficient yields at most to 12% conversion rate and the expectation for the duration is of 20 to 25 years. The crystalline silicon type modules represent 86% of the market. The thin film modules have lower efficiency levels (4 to 8%) and a life expectancy of 15 to 20 years. In terms of cost it requires a low amount of materials thus being relatively cheap to produce. The material permits the development in several colors and forms which is interesting in order to offer different applications and sites. The STEG solar thermal energy is based on the heating of water and it has the capacity of retaining the temperature, extending the efficiency, in the case of the more popular – the parabolic – to 20%.

The technology have improved, but it is reaching a consolidation phase tangible by sector reports confirming excess capacity due to less competitive perspective on cost of energy produced compared with other industries. The production of the modules is directly linked with the intentions of the solar energy to develop. Hence the achievement of new types of

financing, as well as decreasing total capital invested requirement are crucial and the project costs decreased by 40 % on average, from 2011 to 2012.

The volume of future expectations in terms of solar energy is considered in a framework until 2030. The relative proportion of this type of energy compared with the wind is seen by the metric being megawatt when the wind already performs in gigawatt overview. As a matter of fact the point is that the development of this industry is still having an average CAGR from 2003 to 2020 of 10,44%, on average. Some regions expectations are quite higher, as for Latin America whose demand is annually growing by 30%.

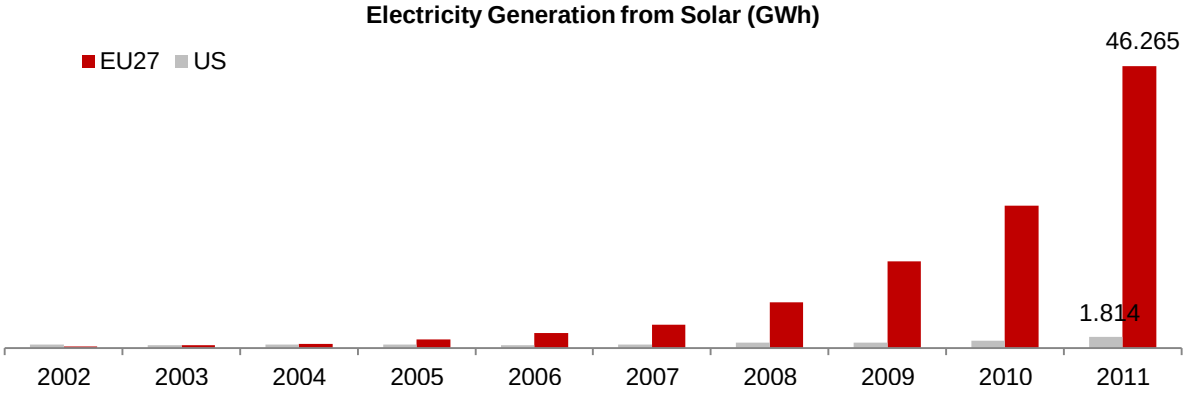


Graph 12 Demand for Solar Energy by region (MW) from 2010 to 2020

Source: Citi Research

The module prices, on average, have been decreasing steadily, since 1972, when the installed capacity was only of 4 MW, the average module price was $74,48/watt, by now the installed capacity achieved the 100 GW, and the price of the module is $0,97/watt, in 2012, according to Citi Research. The expectations of the same source is for in 2020 the cost of a solar module being at $0,53/watt

1.4.2. Production



Graph 13 Electricity generation in GWh in EU and USA from 2002 – 2011

Source: Bloomberg New Energy Finance

The generation of energy is performed by modules that by getting the radiation of the sun and creating a reaction between the receiver of the rays and the sun, it produces electricity. It does not depend on the heat; as a matter of fact the productivity reduces if the temperature rises.

As a relative overview, the stake of the solar energy in the US is still very close to zero, as it stood in 2011 for 0,3%. Nevertheless in Europe the percentage is also small, accounting for 1% of energy generated within the several sources existent in the 27 countries. When the analysis focus in the growth during the last years (2002-2011), the Americans have a CAGR of 75% while in Europe it is 14%, as the investment was started before than this time range.

1.4.2.1. Cost

In terms of costs, the initial investment represents 61% of the total financing for the construction, exploitation and maintenance of the project.

The cost of the energy when provided by the sun is different from type of panel used; nevertheless the trend is a decreasing one with exception to the more sophisticated STEG as the technology keeps improving. The competitiveness of the PV modules presented an incredible change from 2012 to 2013 with a price decreasing to half of what it was, not only due to scale economies achievements but also because of the entrance of China in the market as well as the crystalline silicon cost declining trend.

Type of Module	2010	2011	2012	2013 (Q1)	CAGR
PV - Crystalline Silicon	263,73	207,49	157,03	135,40	-19,9%
PV - Crystalline Silicon + Tracking	283,42	289,35	273,85	123,34	-24,2%
PV - Thin Film	237,11	236,16	242,26	126,87	-18,8%
STEG - Parabolic Trough	271,28	273,35	297,11	283,42	1,5%
STEG - Parabolic Trough + Storage	274,69	271,71	282,85	263,90	-1,3%

Table 10 Levelized cost of solar energy by type of Module from 2010 to 2013

Source: Bloomberg New Energy Finance

1.4.2.2. Price

On the revenue side, the legal parameters fixed for the next 20 years (or until 34GW of cumulative production per MW installed is achieved) a tariff of € 280/MWh. Additionally. it also has the already referred green certificates as a source of revenues.

In the US, the price is usually defined case by case in a negotiation process. Nonetheless, in Europe there are defined tariffs, as well as subsidies that hold an impactful role to the margin of the company.

2. Metallic Constructions

2.1. Introduction

The metallic construction industry is based on usage of metals in large scale structures. This topic conceives the analysis of dynamics that are related with the drivers of the market, as well

as, the costs of the materials. Big constructions are usually related with Government Expenditure and Worldwide scale events, although companies more and more develop projects with impressive size for its headquarters for example.

	Items	2007	2008	2009	2010	2011	2012	Current (April 2013)	2013E	2014E
Valuation Metrics	Price/Earnings	12,06	8,52	17,93	13,7	13,86	19,44	20,79	13,58	11,61
	Price/Book Value	2,24	1,22	1,51	1,47	1,13	1,28	1,32	1,27	1,2
	EV/Sales	1,14	0,84	0,97	1,01	0,82	0,87	0,85	0,83	0,81
	EV/EBIT	11,6	10,01	13,05	13,11	11,51	12,96	12,61	na	Na
	EV/EBITDA	8,14	6,87	8,1	7,97	7,1	7,81	7,58	7,14	6,62
	Dividend Yield (in%)	2,35	5,47	2,97	3,28	4,01	3,85	3,59	3,78	4,09
Fundamentals	Gross Margin (in%)	30,07	29,56	27,76	27,45	31,13	30,49	28,36	na	Na
	Operating Margin(in%)	12,13	9,87	9,25	9,37	8,73	8,9	9,12	na	Na
	Profit Margin (in%)	7,85	5,74	4,79	5,42	5,38	4,86	4,86	na	Na
	Return on Assets(in%)	5,93	4,4	3,28	3,69	4,12	3,53	3,72	5,03	5,67
	Return on Equity (in%)	21,52	16,65	12,1	12,14	12,87	9,62	8,65	12,07	12,87

Table 11Valuation Metrics and Fundamentals Overview of the Industry: Building Sub-Contractors
Source: Bloomberg

Considering the main objective of this paper (the acquisition of Martifer by EDP R) the Martifer's Metallic Constructions segment is useful for an eventual construction of buildings but also through the relationship of the metallic constructions topic with the structures of the turbines and solar panels.

The Eurostox 600 Construction & Materials is a representative weighted index of European companies involved in the construction industry. The performance over the years after the crisis shows an increasing gross margin but the return on assets and equity is shrinking.

2.2. Market Dynamics

As it was already referred there different paces of development worldwide, hence it is crucial to start by stating the differences and the regions that interest the most. In terms of geographies: Europe and USA, BRICS, with focus in Brazil and Angola, as well as China, respectively standing for developed and developing regions. As for Angola data was harder to find, especially in terms of reliable forecasts, less data will be shown. Additionally, the information about future events that create impact to the industry and represent the focus on a medium-long term project vision as the contests for those are usually launch with years of advance (since the constructions also take several months to be ready – and are usually delayed).

The reliability of a company not only in terms of budget and following safety measures, but also meeting the deadlines is critical in this industry.

2.2.1. Drivers of Growth

The main drivers of the growth of this industry are the GDP, the public expenditure and occurrence of worldwide events.

In terms of GDP, historically the differences between the two main regions of developed and developing countries are representative. Nevertheless Angola and Mozambique are facing incredible growth and are also interesting to analyze due to the relation with the headquarters of both companies assessed in this paper.

Region	2006	2007	2008	2009	2010	2011	2012	2013E	2014E	2015E	Average 2013-2015
BRICS	13,8%	16,4%	15,5%	8,4%	14,0%	13,5%	9,9%	10,8%	11,1%	10,9%	11,0%
Euroarea	5,4%	5,0%	3,7%	-4,1%	3,6%	4,1%	1,9%	1,3%	2,7%	3,3%	2,4%
USA	5,9%	4,8%	3,6%	-3,5%	4,0%	5,0%	4,3%	3,9%	4,8%	5,2%	4,6%

Table 12 Nominal GDP Growth Historical and Forecast

Source: IMF (Outlook, April 2013)

The estimations for the next three years, in terms of nominal GDP are positive for the three regions as for instance few years ago the more developed ones were facing recession due to financial crisis (2008-2009). Nevertheless, countries like Brazil, India and China are on a basis of double digit growth thus they represent a large share of the future of construction.

Country	2011	2012	2013	2014	2015	2016	2017	2018	Average 2013-2015
Angola	3,9%	8,4%	6,2%	7,3%	7,0%	6,7%	2,8%	6,0%	6,8%
Mozambique	7,3%	7,5%	8,4%	8,0%	8,0%	7,8%	7,8%	7,8%	8,1%

Table 13 Nominal GDP Growth Historical and Forecast

Source: IMF (Outlook, April 2013)

In what comes to Angola and Mozambique, the forecast of the growth is also impressive. Due to the high inflation that these countries are going through the analysis of the GDP at current values (based in 2011) was performed showing the real development. The attractiveness of these countries in terms of investment and construction is based on the fact that both countries are now experiencing the development of its infrastructures, since the evolution of certain sectors have been jeopardized through the postponement of projects of this caraway. The pipeline includes highways, railways, airports, harbors, hospital and schools. The assessment of the prediction of the public expenditure in percentage of the GDP shows that for the next years it will be high and stable. Additionally, Mozambique is being helped with extra money from the Bretton Woods association representing 40% of its national budget for 2010. As a matter of fact, it is being used to construct Beira City Harbor and electricity transport line from the Center to the South of the country.

Countries/Regions	2011	2012	2013	2014	2015	2016	2017	2018
Angola	38,6%	36,0%	41,5%	39,9%	38,0%	36,3%	35,7%	35,0%
Mozambique	34,4%	32,7%	33,4%	34,7%	34,0%	33,8%	33,3%	33,0%
USA	108,2%	106,7%	105,5%	104,4%	103,7%	n.a.	n.a.	n.a.
Euro Area	104,2%	103,7%	102,8%	102,4%	101,6%	n.a.	n.a.	n.a.

Table 14 Public Expenditure in % of GDP Historical and Forecast

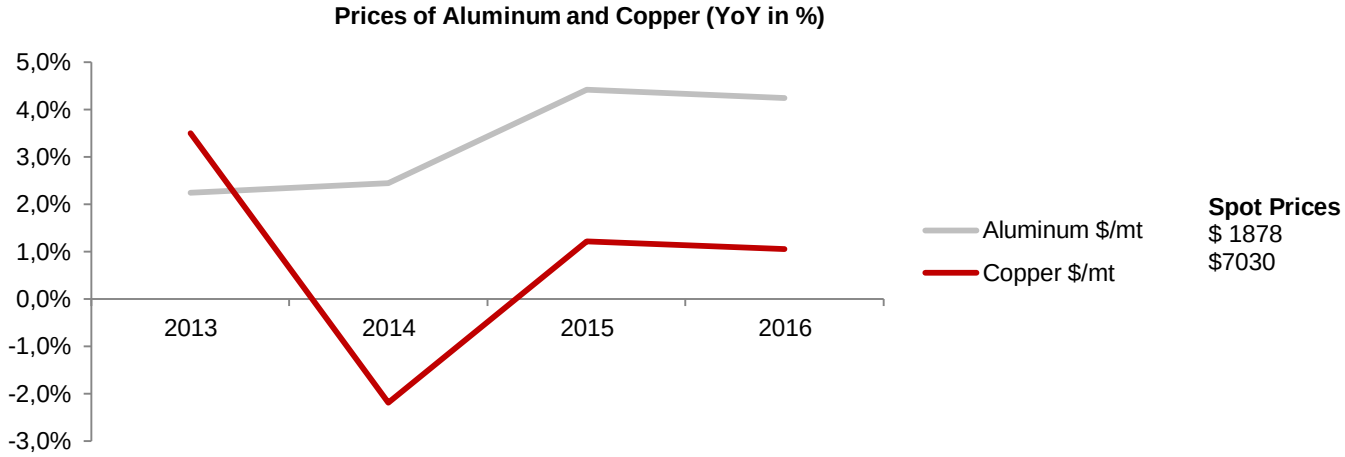
Source: IMF (Outlook, April 2013)

For instance, in Brazil and Qatar which are other two countries under an increasing growth, the hostage of worldwide-impact events like the Olympics and Football Cups represent a boost in the growth of the economy and demand for the services of construction companies. Additionally the improvement of life quality will create the opportunity to, for example, new homes using steel instead of brick-and-mortar simply.

As it was stated, usually projects like the ones referred before are open to public contest and the best offer taking into account the requirements, as for the materials, reliability and price is the chosen one. It is then important to have a good team in terms of engineering and architecture. Those will be the ones responsible for an efficient and pleasant project to run for the opportunity. The existence of public expenditure only represents opportunities, the bidding proposal is the process to achieve such and it may fail.

2.2.2. Costs

A part of the costs of this industry are attached with commodity prices of its main materials as aluminum, steel and copper. The evolution forecast shows a decrease in price for the copper and then a small increase, as for the aluminum the evolution is positive. In what to comes to the price of the steel, there is an enormous amount of types of steel whose expectations are different for the next years, however the steel price hot rolled is at $ 604,04/mt in the USA, which means that since 2002 almost doubled the figure from a $313,33/mt.



Graph 14 Commodity Prices Forecast YoY (%)

Source: Bloomberg

2.2.3. Main Players

Most the developing countries are being evaded by developed countries based companies, usually based on an attachment of ex-colonies. Additionally, the point is that the construction is also dominated on a local basis, as it stands for the nationality or at least economic region the country belongs to. Therefore this topic will be further developed concerning specifically the company in this business.

B. COMPANIES' REVIEW

1. EDP Renováveis

1.1. History

EDP Renováveis (EDP R) was founded in 2007 as a result of a split of the green arm of EDP (*Energias de Portugal*), the Portuguese company for electricity generation and distribution. It worked as an offer for subscription and the point is related with the investors' feeling for renewable energy as conceiving greater growth opportunities than the traditional methods and therefore the capital increase was more successful.

1.2. Structure

Although its legal registration is in Oviedo, in Spain, EDP R is quoted in the principal Portuguese index (PSI-20) since 2008. Furthermore, in terms of geographies, it can be defined three regional platforms: EDP R Europe, based in Madrid managing EU and other regions investments; EDP R North America directed from Houston covering US and Canada assets and there is a third party for the investments in Brazil. The number of countries it is presented in is already a considerable one: Spain, Portugal, France, Belgium, Poland, Romania, USA, Brazil, Italy, Canada and UK.

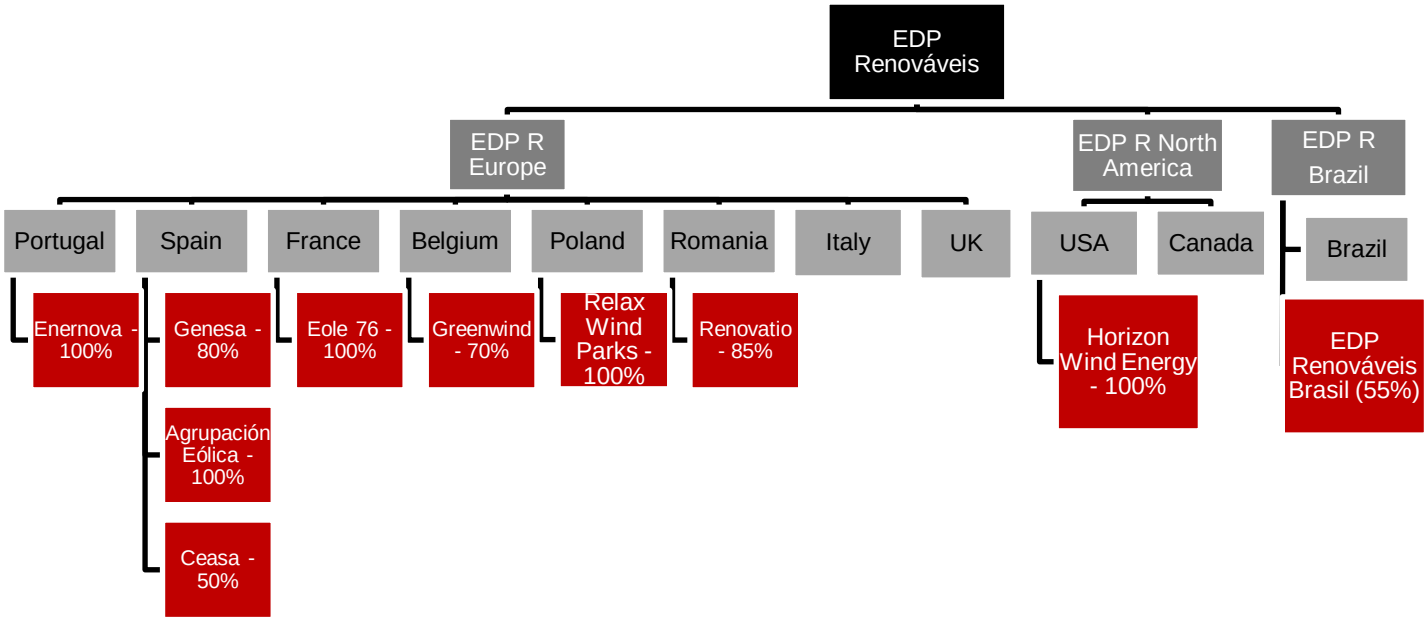
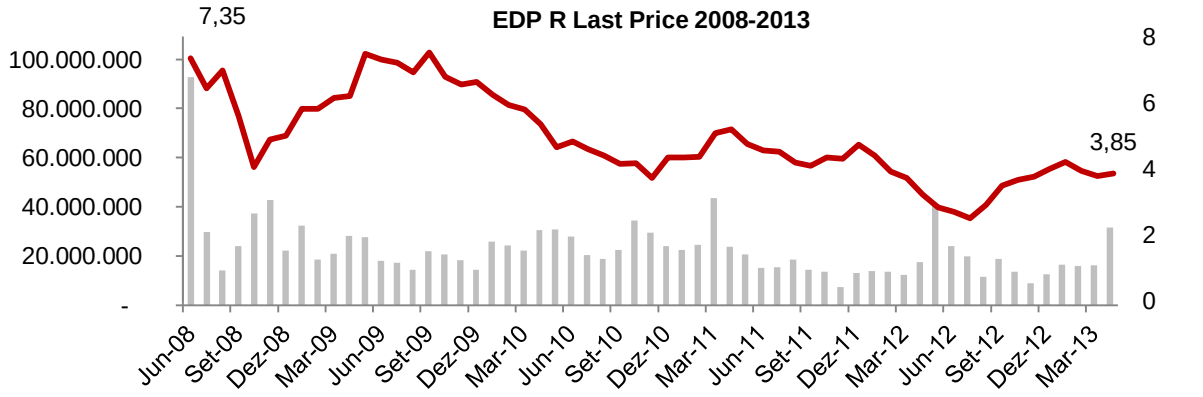


Figure 4 EDP Renováveis Internal Structure

Source: Company's Report 2012

The share capital of EDP R after the IPO evolved to 872,3 million single class shares with a €5 as face value (being at the end of the first month in the market priced as €7,35). The free float of 25,5% is then complemented by an ownership of EDP Group, the parent company, directly with a 62% stake and indirectly through the Hidroelectrica del Cantábrico that owns 15,5%.



Graph 15 Share Performance in Euros and Volume of Transactions per month from 2008-2013

Source: Bloomberg

The share price evolution has not been positive since the IPO. In fact, the company entered in the market in a moment of turmoil of the financial markets. In the last semester of 2012, the performance has been positive. Furthermore, 75% of the analyst coverage recommends buying. In addition, the renewables index (ERIXP) from 2010 to 2012 performed in line with the EDP R share, since it also decreased by 38,6%.

1.3. Operational Perspective

As of 2012, EDP R consists of 861 employees spread worldwide: 63,8% of its workforce is based in Europe, 33,8% in the USA and 2,4% in Brazil. More than half of the total employees are located in the Iberian Peninsula. In it is main business segment; it is the fourth largest wind generator. The growth of the company income is one-side controlled, since the price is regulated, but just in some of the countries. The exceptions occurred when, for instance, direct contracts with the private sector are performed.

Year (Since)	Country	Installed Cap (MW)	Under Construct.	Pipeline (MW)	Production (GWh)	Load Factor	Market Share
2012	Canada	0	0	445	-	-	-
2010	Italy	40	0	589	-	-	-
2010	UK	0	0	1448	-	-	-
2009	Brazil	84	0	1454	231	31%	3,30%
2008	Belgium	57	0	53	123	25%	4,10%
2008	Romania	350	28	506	476	21%	18,40%
2007	USA	3637	0	8393	9937	33%	6,10%
2007	Poland	190	130	1175	435	26%	7,60%
2005	France	314	0	584	693	26%	4,40%
1997	Spain	2310	0	3689	5106	27%	10,10%
1996	Portugal	1005	0	313	1444	27%	13,60%

Table 15 Overview of Production Evolution and Performance

Source: EDP Renováveis Website

In terms of important stakeholders, Vestas Wind Systems A/S (Vestas) is the company that produces the turbines has a long-term agreement with EDP R. As a matter of fact it was extended until 2015 the delivery of some that account for a plan of 1500 MW supply contract.

EDP R is in charge of the production of energy through green sources. Within the energy sector, the main areas of the company are wind based production nevertheless there is a brand new solar photovoltaic power plants in Romania (that will be incorporated in the financial statements later on). In terms of activity, the company performs a complete project management from the design to the management and operation of the power plant.

According to Citi Bank, the company as great growth opportunities as it is having an outstanding performance in the utilities sector, with a 34% increase year to year in 2012 for the earning per share. Moreover the strategy in the geographic spread of activities reveals an assertive position as the renewables are being adopted by developing countries.

Worldwide, EDP R is more and more holding a respectable role within the market. As of March 2013, the company is the greenest company on Earth based on specific criteria of awareness and impact creation, enhancing the effort of the company in being socially and corporately responsible – as it is part of the FTSE4Good index.

1.3.1. North America

The USA was the first country EDP R entered in in this region, more specifically in the state of Indiana. It was in 2007 through an acquisition in the wind energy production sector: Horizon Wind Energy LLC. This deal allowed the company to more than double its capacity of production. Indiana, in terms of wind electricity generation evolved each year at a 90% rate from 2008 to 2012, according to Bloomberg.

A later arrival was made in Canada, in 2010, also through the acquisition of a portfolio of wind farm projects still under development. By now, it has 28 wind farms and it is operating more than 3700 MW. In 2012, the company sold partially its stake in some of the American wind farms they hold to a Canadian pension fund (Borealis).

1.3.2. Europe

In Portugal, the company has an installed capacity of 1005 MW (as of yearend 2012), in terms of wind farms. Since 1996, the growth is considerable however the assets are not fully owned, since a share of the production works as part of a consortium (Eólicas de Portugal) – if excluding those, the installed capacity decreases to 615 MW. On the other hand, in terms of market overview, Spain is one of the most developed markets in the wind energy production segment. It holds 10% as market share, in the wind segment. The French operations began in 2005 and since then it increased heavily its presence: 28 wind farms that represent 314 MW. The investments in Romania are not only in wind, since the solar ones are very recent intentions.

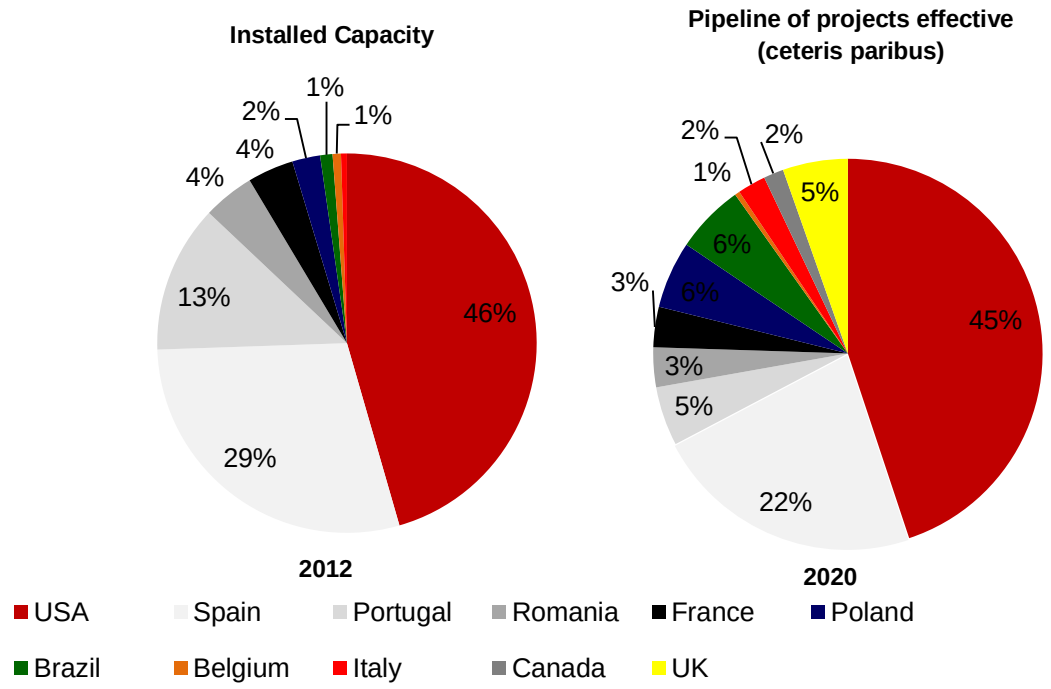
In terms of capacity of production, the wind farms are of 350 MW. The solar investments were announced in the last quarter of 2012, through the acquisition of 60 MW, and the development of a new wind project of 28 MW. The company is also present in Poland and Italy, they have only wind farms. In Italy the project was concluded in the end of 2012, and in January the tariff was defined for 40 MW. Additionally, the expected average load factor is of 29%.

1.3.3. Brazil

EDP R has 3 wind farms in Brazil and it has under construction the biggest with 70 MW of installed capacity. Until the end of 2012, 84 MW of installed capacity are operational to produce energy. The average load factor of those investments is 28%, which is line with the performance of the Portuguese and Spanish wind assets performance. The price is contracted by auction.

1.3.4. General Overview

The total portfolio accounts for 7987 MW in 2012, a growth of 6,7% since 2011.



Graph 16 & 17 Installed Capacity in 2012 and impact of effective pipeline

Source: EDP Renováveis Report 2012

The graphs above state the triple-crown of investment in EDP R: USA, Spain and Portugal. The right-hand one considers the relative position of each country as if the pipeline effectives and nothing else happens in a medium-long term perspective. The conclusion is that the US

and Spain are already under a keep the pace perspective and, on the other hand diversification is a reality by increasing the number of countries present in the structure.

	Country	Price per MWh	Law
Fixed Tariff	Spain	€ 81,6	RD 661/2013
	Portugal	€90	Decree Law 33A/2005
	France	€82	Arrêté du 10 Juillet 2006 (Appendix 5)
Market Price + Premium	Spain	€ 86,24	RD 661/2013
	Belgium	€80-€125 (Flanders) and €65-€100(Wallonia)	-
	Poland	Na	-
	Romania	Na	-
Green Certificates	Italy	Na	-
	UK	Na	-
Long term Contracts + Renewable Energy Credit Scheme	USA	$47,1	-
Public Auction	Brazil	R$286,4	-

Table 16 Pricing by Region, Legal Framework

Source: EDP Renováveis Report, National Law

The pricing mechanism in most of the countries where EDP R is present is based on a regulatory framework. The operations in Europe have two different schemes. In Spain, Portugal and France the markets work based on a feed-in-tariff; but also in Spain, Belgium, Poland and Romania on top of the price paid, an extra premium is received or a green-certificate that can be later sold. In Italy and in the UK it is under an on-going process from green-certificates to feed-in-tariff system, to be integrated. The future evolution of the prices if there are no changes in the law, are based on CPI evolution. In North America, it has not a regulated framework system. Therefore, the process occurs on a local basis, negotiating with the utilities operator a predefined price for a long-term contract. For Brazil, in spite of the price being defined in a public auction, it is applied to a long-term agreement. Concluding, although there are some risks from this perspective, the expectations are of stability once the rules are defined.

Selling Prices (per MWh)	2012	2011	Δ 2011-2012
Europe	€ 94,20	€ 88	7%
US	$47,1	$45,7	3%
Brazil	R$286,4	R$278,4	3%
Average	*€ 63,50*	*€ 57,50*	*10%*

Table 17 Selling Prices Evolution per region

Source: EDP Renováveis Report 2012

1.4. Performance

The most recent performance reveals a strong company, either in terms of value, as its assets accounted for €13,3 billion and capital structure, since the equity represents 43,2% of the

assets. The total liabilities decrease by 1% on a year to year basis, representing €7,6 billion. The equity rose +5% due to the sale of non-controlling shares and positive profit of €126 million (net of €10 million attributed to non-controlling interests).

EDP R's debt is mainly a contract with its major shareholder EDP Group that out of financial debt represents 76%. The reminiscent are loans from banks and other financial institutions. Within 2012, the company entered in new project finance deals, a total of €274 million investment.

Load Factor	2008	2009	2010	2011	2012
Spain	26%	26%	27%	25%	27%
Portugal	27%	28%	29%	27%	27%
RoE	23%	23%	24%	23%	24%
USA	34%	32%	32%	33%	33%
Brazil	-	22%	26%	35%	31%

Table 18 Load Factor Evolution EDP Renováveis by region

Source: EDP Renováveis Report 2012

The load factors have been improving among the years, however in absolute values the change is not significant. In terms of geographies, the USA is the best performer.

The net income of €51 million comes from revenues of €1285 million (a YoY growth of 20%). The Opex/MW and the Opex/MWh are two very important indicators of the efficiency of the company as it represents the operating cost (net of other operating income) per output, and it increased 8% and 6% respectively. This negative overview was caused by a stronger US Dollar and write-offs. However the EBITDA per average MW, also an industry specific metric for assets' profitability increased 9% to €131.000. The net profit grew 43% achieving €126 million.

The cash flow management of this year allowed a CapEx amount of €612 million, representing a decrease of 26% comparing with 2011, as it was performed a lower investment in terms of MW growth. 2012 was the first positive year for EDP R free cash flow thanks to the sale of some stakes based on its asset rotation program, as well as efficiencies in the net working capital.

In terms of dividends, the company has never distributed any. Nevertheless, it is about to start a different policy, as for 2013 it is expected to pay out its shareholders based on 2012 profits.

1.5. Research & Development

The partnership of EDP R with EDP Inovação (EDP I) is one of the competitive advantages of the group since it develops new projects in several areas as solar, offshore wind and other technologies.

EDP R holds specific innovation intentions in the energy segment that are tangible in the offshore wind farms and gathering-operation-centers. The first one is called the *WindFloat* as it is basically a 2 MW wind turbine in a floating foundation semi-submersible. The potential in terms of load factor is high as it is the first semi-submersible structure supporting a multi-megawatt wind turbine.

The dispatch center is an operation system as it gathers the management of the wind farms to a specific location: the remote control infrastructure (it accounts for three: Porto, Oviedo and Houston). This system optimizes the efficiency of the assets: monitors, controls in real time and remotely the load factors and energy output, and at the same time, it improves availability and operation and maintenance contracts management.

1.6. Future Perspectives

The sector the company plays in demands a long term vision as the assets always require a period to make them actionable, as well as, to improve its efficiency.

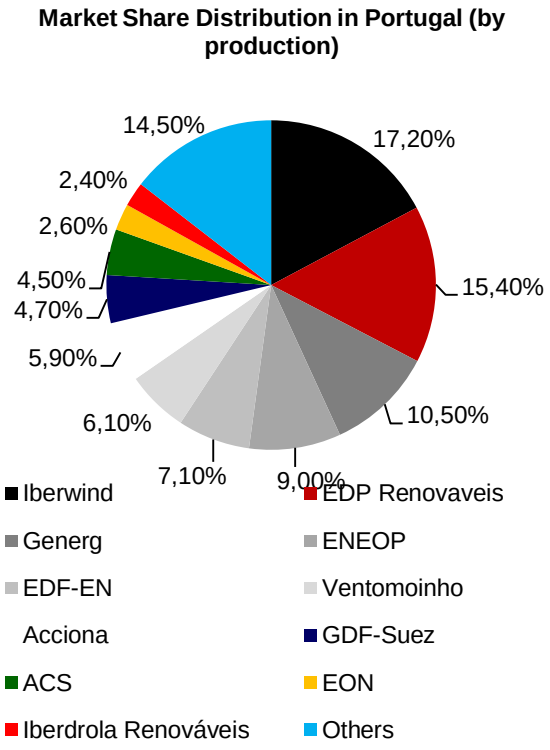
The project under development in Spain is about to be assimilated, since in the end of 2012 the final arrangements were made. The same for the Romanian solar PV project as it is supposed to be concluded in firs semester of 2013. The company is willing to keep the pace in terms of investment for the future, reaching annually the €3,6 million to €4,0 of average during 2013-2020 period. For 2013, it accounts for 600 million euros. Additionally, there is the position in the Romanian investments that are going to be executed, in terms of the diversification towards solar energy generation.

The Goldman Sachs predicts, in a research note that for 2013-14, EDP R will develop 250 MW in the US. In spite of the fact EDP R released the intention of searching for non – obvious markets as the US but new regions, Goldman researchers expect that it keeps the pace on a 200 MW/year basis, from 2015 on. The reasoning relies on the fact the extension of the incentives program creating value and CapEx. As a matter of fact, it is statet in the EDP R 2012 Report that the new projects in the US will benefit for 10 years of Production Tax Credits on the electricity output ($22/MWh).

The dividend policy for 2013-2015 is already defined and it varies from 25% to 35% distributable profit. For 2013, for example, the payout ratio of 28% of the consolidated results represent €0,04 per share.

The incorporation of certain changes in the assets of EDP are related with the acquisition of part of the capital by China Three Gorges (CTG), which is expected to develop synergies, as well as the planned business development in terms of geographies and technology. Additionally the significant de-leveraging after the agreement with the CTG – under a minority stake – increases the company positive outlook, enhanced by the expected growth in terms of

investments in the pipeline. There are several implications of the entrance of new shareholders in the EDP R capital, in such a large figure as 49%. However, at the time this thesis is begin written the institutional authorities have not approved the acquisition and therefore it will be considered as not important for the deal to be evaluated.



Graph 17 Market Share Overview in Portugal
Source: BPI: "O Sector Eléctrico em Portugal 2011"

1.7. Competitors

Among the top producers of wind energy, in 2011, Iberdrola and NextEra were above (Appendix 3.1.). Behind there was Longyuan and Acciona, on a worldwide overview. As energy is transportable but on a real time basis and not for long distance it works more on a regional basis of competition. The contracts are negotiated on a bilateral basis.

The competition occurs on a local basis, as the regulation as great importance. In Portugal for instance the production of wind energy is a quite fragmented market therefore the development of this technology is perceptible by the graph below. In the specific factsheet about EDP Renováveis the market share in each country is updated for 2012.

2. Martifer Group

2.1. History

Martifer was created in the 90s in the north of Portugal. Its development was enhanced by certain events held in Portugal during the decade (Expo98 and later Euro2004) where metallic structure projects were required. With the internationalization process ongoing, the company went to the renewable energy sector (wind and solar) due to the already held role of components supplier to wind turbines. In 2007, its IPO occurred. Nowadays, the company is present in Portugal, Spain, Italy, Greece, Belgium, Poland, Slovakia, Romenia, Chzec Republic, France, UK, Brasil, USA, Canada, Australia and Angola.

2.2. Structure

The Martifer shares in the free float are traded in the Portuguese stock exchange represent 17,58% of the capital. The reminiscent capital as of qualifying shareholders are the Martins family that refer to 43% of the capital, Mota Engil stands for 37,5%, and 2,22% are treasury shares.

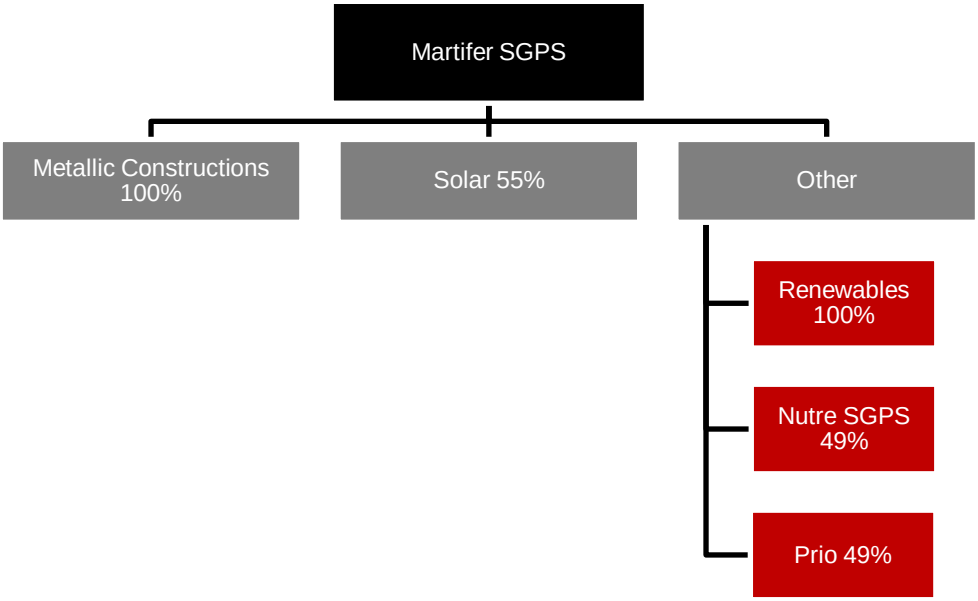


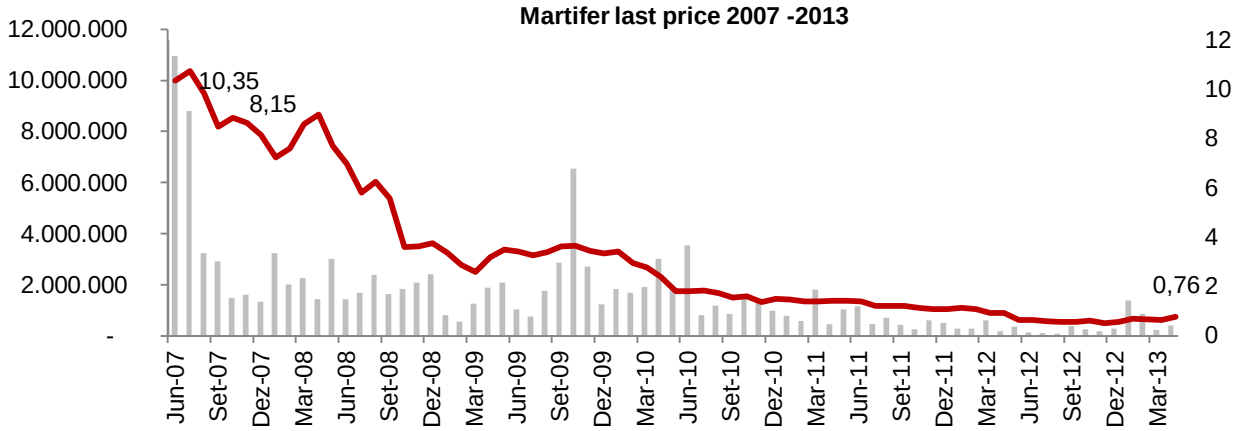
Figure 5 Martifer's Internal Structure

Source: Martifer Report 2012

As the company presents a pretty complex diversification in terms of geographies and sectors, the number of registered corporations is considerably high. However, in terms of interests the main ones are the presented above. Within the metallic constructions, some companies as for the ones located in Austria, Ireland, South Africa and Angola, the ownership is not total, although never lower than 50%. On the other hand in the Solar branch, Martifer sold 20% of the stakes in 2012 to HSF, who owns now 45% of the company. The multiple companies within the reminiscent activity of the company stand for the renewables energy production, the agriculture and the fuels. These last two are not fully owned by Martifer.

The recent stock performance of the company reveals its poor market perspective and the shareholders expectations about the company. In the end of 2007, the share price was at €8,15 but within 2008 the decrease of 53,9% to €3,76, which was a similar performance to the PSI-20 in general during that year (a fall of 51,3%). Since then the share never recovered due to the turmoil within the financial markets and also related with the segments Martifer has activity in are cyclical with the economy that has been in recession.

In 2009, it was distributed a €0,10 per share dividend to the shareholders, as in 2008 it had not happened. At the end of 2011, the performance was negative by 26,3% comparing with the price in the beginning of the year. Among the years it is clear that, when comparing with PSI-20, the company is following a trend and being affected by a conjecture within the country and the sectors it is related with, as it was referred before. However, in 2012, the impact in the stock price was worse than in main index of the Portuguese market. The company's market cap ended at €56 million, and on average it was traded 12652 shares per day in the last year.



Graph 18 Performance in Euros and Volume of Transactions per month from 2007-2013

Source : Bloomberg

2.3. Operational Perspective

The group holds a diversified portfolio as it covers metallic construction and solar. Furthermore they have some outstanding investment in renewables in general, as well as biofuel production (Prio), agricultural projects (Nutre) and a naval site in Aveiro. On a general overview, the company is under a complete restructure, started in 2011:

- Reweighting geographies: less Iberia, more emerging markets (Brazil with a lot of projects for the future worldwide impactful events) and more mature markets in Central Europe;
- Deleverage and balance the debt level: selling assets as wind farms and closing some units;
- Emphases on metallic construction and solar as core businesses.

Revenues	2012	Weight	Δ 2011-2012
Metallic Construction	250,3	50,93%	4,20%
Solar	230,8	46,96%	-21,30%
Others	10,4	2,12%	-37,90%
Consolidated	491,5		-10,70%

Table 19 Revenues Breakdown by segment 2012 (Million Euros)

Source: Martifer Report 2012

2.4. Metallic Constructions

This branch executes projects with a high level of steel structure, aluminum façades and glass and stainless steel solutions. It also works heavily with the renewable area as for engineering solutions and production of equipment for wind energy, petroleum and gas, which is balancing the financials. As a matter of fact, for the deal to be developed later on the fact that this business area is producing components as wind power turbines, steel tower manufacturing – activity that started in 2004 making the towers to the windmills. The partnership with

REpower Systems AG promoted the transference of know-how in the wind energy system business. Firstly, Martifer bought a participation in the company to later develop together a Portuguese one, called Repower Portugal. Considering this, the company developed skills in turn-key project type offer with REpower technology that in 2009 was the 7th player in terms of windmill production. They not only build the power division, components, turbine assembly and turnkey but also the wind farm delivery, engineering division and the navy engineering operations.

The metallic constructions have a considerable importance in the revenues structure as it accounted for 250 million euros, in 2012 - although the crisis has impacted severely this sector due to the correlation with public investment.

The order backlog by country shows the diversity for the next years, as well as the strength of emerging countries in the portfolio.

Country	Value (M€)	%
Brazil	101,8	27%
France	88,7	24%
Saudi Arabia	61,4	16%
Portugal	49,7	13%
UK	22,4	6%
Angola	16,9	5%
Spain	14,9	4%
Romania	8,8	2%
Poland	4	1%
Australia	3,4	1%
Peru	3	1%
Total	375	100%

Table 20 Order Backlog by Country

Source: Martifer Report 2012

The main risks to take into account in this business are related with demand volatility and the suppliers' quality. As for the demand the dependence on the launch of public tenders for public infrastructures (ex. bridges, airports, stations) was already approached in the industry overview. Within the scope of public tenders, Martifer is subject to complex regulatory demands, specific to each country, namely in matters concerning the presentation of the proposals and the preparation of complex documentation and project proposals. It is very important to benefit from a competitive and skilled engineers and lawyers. Besides, Martifer has been able to develop business not subject to public tender, under a different business core, as for the Airbus hangars or companies headquarters.

The specialization in engineering projects does not permit to avoid relying very often on subcontractors, who may fail in the execution of their work and jeopardize not only on meeting the deadlines but also in the quality of the work. Actually, when it comes to the

development of the wind farm projects, the contracts foresee guarantees and penalties in a more meticulous way.

2.5. Solar

The solar branch focus on the development of photovoltaic projects covering the engineer, procure and construction stages. In terms of type of offer, Martifer Solar provides installation of turnkey, building integrated and micro generation projects. This last section refers to the launch of MPrime, a brand to answer to the demand for PV modules, it manufactures and installs. Furthermore the operationally assurance and maintenance of the equipment is also part of their business.

In terms of the energy production sector, they also play a role with 64MW in wind farms and solar PV plants, being present in five countries: Portugal, Spain, Romania, Poland and Brazil.
The turnkey projects contracts for the future (already signed) are in Mexico, North America, Portugal and in the UK. The focus in more mature markets is justified with the legal framework definition being crucial to the competitiveness of the production of energy through solar.

The solar photovoltaic modules produced by the company are traded with a 15 to 20 year performance warranty. The solar systems is also guaranteed in respect of the modules acquired for the construction of solar parks; however, the group's responsibility, in this case, is diminished in that there is a right of recourse vis-à-vis the suppliers. On the other hand, most of the equipment used in the production of solar photovoltaic modules is customized for specific raw materials, with a resulting dependency risk on key raw-material suppliers, whose contracts have been established on a long term perspective to assure less business risk.

2.6. Other

The other areas represent the RE Developer activity and the holding operations and supporting services. The company is right now operating 64 MW of wind farms and solar parks. The readiness and power curve of each turbine is contractually guaranteed, with indemnities being payable by the suppliers for situations where their readiness is not satisfied or the power curve is not attained. As it was referred before, the diversified location of each wind farm or solar plant is the way to provide a better performance. However, the company has under its plan of asset rotation to sell these assets.

2.7. Performance

Martifer last years have not been quite positive, as the company has suffered a lot from the financial downturn, the real estate turmoil and the sovereign debt crisis. In 2012, the operating revenues of the group decreased by 10,7%. However, the metallic construction improved its performance comparing with 2011.

The internationalization exposure was crucial for a not so negative performance. The main projects the company is involved in are in Brazil: bridges, museums, stadiums; in France, Saudi Arabia and UK it is diverse, from stadiums to companies' headquarters; in Portugal, for instance, there are ships under construction in Navalria.

	% of Revenues
EU (excluding Portugal)	44%
Latin America	14%
North America	8%
Africa and Saudi Arabia	12%
Portugal	19%
Other	3%

Table 21 Breakdown of Revenues

Source: Martifer Report 2012

The metallic construction already represent 50,9% of the revenues, and the solar 47%. The other areas, although having a residual performance, the EBITDA reached 9,9 million euros in 2012, increasing by 17%. It is remarkable that his happened despite the fact part of the assets (wind farms in Poland) were sold. As a matter of fact, the consolidated EBITDA was positive by 3,9 million euros, but the metallic construction produced a negative margin by 9,8%, in 24,6 million euros (negative) and the solar a positive operating margin of 6,9%. A negative net profit of minus 54,4 million euros.

Considering the financing structure of the group, it is mainly done in Europe and therefore the currency is Euros. Although the company has been making efforts to reduce the debt value, the existence of impairment losses, the fragile situation of certain economies it is present reducing the results and the poor stock performance, made impossible to attain in the objectives defined in this field that included a severe reduction. The last improvement in the debt level was justified mainly by investment in the renewables segment (assets which are already under negotiation for sale so that easily transformed in cash). Most of the net debt is fixed (83%) and medium-long term (78%) and that is a trend since 2009. It has increased since then.

Net debt by segment	2009	2010	2011	2012	Target 2015
Metallic Constructions	114,8	90,6	107	120	
Energy Systems	65,3	44,3	-	-	
Solar	46,9	29,7	46	62	
Redeveloper	143,6	61,8	27	40	
Holding	73,9	117,5	151	155	
Net Debt	**443,64**	**343,40**	**329,87**	**376,66**	**330,00**

Table 22 Net Debt Analysis

Source: Martifer Report 2012

The company's target for 2014 is to achieve a Net Debt/EBITDA of 4,5x however in 2012 it ended as 90x. Thus, the target is recovering the performance held in 2009 and 2010 of 5,5x to 6,5x of this ratio. However the prediction is for 2013 and 2014 to represent a turn the leaf to the company, by achieving a great operational performance, making the objective a possibility. In what comes to interest rate paid, it is also clear that each business segment has a different operating risk perceived by the financing institutions. The ratio between financial expenses and net debt does not perform consistently among time, as for instance, it varies from 7% to 12% in a consolidated overview, but also by segment there is not an obvious trend. Besides, since 2009 that the company is not able to pay off its financial obligations through operating income, since the interest coverage ratio is below zero.

The capital expenditures reflects at a certain extent the projects to be developed, since some assets for sale or the metallic constructions of large projects require investment either in materials as well as specific infrastructures for those, reaching for 2012, a 56,5 million euros. Since 2007 the trend is to decrease as the company is underperforming.

2.8. Future Perspectives

The perspective of analyzing the geographic business diversification does not give a lot of insight about the company's performance for the future as most of the projects are key-turn ones, thus once it is completed the company does not have an operational impact out of it (at least, not a strong one). However, the point is that only for the wind farms and solar PV modules that they actually operate and the factories for the metallic are the main geographies to keep eye on as those are the places they strive for financing and are legally affected. This way they have facilities for the metallic constructions branch in Portugal, in spite of the fact they closed one in Benavente in 2011, Australia, Angola, Romania and Brazil. The solar part is facing and international markets as the solar modules are easily transportable and the competition is worldwide-based, being present in more than 20 countries commercially. The other investments in renewable energy regard Spain, Romania and Brazil. They hold a participation in wind farm operations; Prio and Nutre companies also run their business in Portuguese territory.

The international repositioning with a greater commercial effort, the debt management and better cash flow management were task forces in 2012 that will continue for 2013. It is stated that the achievement will be done through the sale of non-core assets, implementation of increased operational efficiency in a strategic attempt of raising the business level.

Country	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Angola	-5%	27%	29%	16%	8%	11%	10%	11%	7%	11%
Australia	2%	8%	7%	3%	4%	5%	5%	5%	6%	6%
Brazil	7%	16%	10%	6%	9%	9%	9%	9%	9%	9%
France	-2%	3%	3%	2%	2%	3%	3%	3%	4%	4%
Peru	3%	14%	13%	7%	10%	8%	8%	8%	8%	6%
Poland	5%	5%	8%	4%	3%	4%	5%	6%	6%	6%
Portugal	-2%	3%	-1%	-3%	-1%	2%	3%	4%	4%	4%
Romania	-3%	5%	6%	6%	7%	6%	6%	6%	6%	7%
Saudi Arabia	-17%	23%	27%	9%	3%	2%	4%	4%	5%	5%
Spain	-4%	0%	1%	-1%	-1%	2%	3%	3%	3%	3%
United Kingdom	-3%	5%	3%	2%	2%	4%	4%	4%	4%	5%

Table 23 GDP Historic and Forecast (YoY %) for the countries in the backlog for metallic constructions
Source: IMF (Outlook, 2013)

The international repositioning, the growth of the pipeline of projects for the future, as well as the maintenance of the gross debt level were objectives for 2012. The perspectives for the future of the company are based on increased operational efficiency, the order book leveraging and the international exposure enhancement for instance in the Qatar region as for the future events they are running for a contract there.

2.9. Competitors

In Portugal the main competitor under the turbines production is A Silva Matos, a private company that has an agreement with EDP R. Additionally, in the Portuguese economy there are companies like Conduril Engenharia or Soares da Costa are also in the civil engineering, more specifically large scale projects. MotaEngil is in a JV with the metallic branch of Martifer. In the international panorama, some other companies like the Italian Maire Tecnipont and the French Tecnhip that both present a similar portfolio in terms of presence in the energy and metallic construction segments. Additionally in the segment of the wind towers, a complete offer is performed by Vestas, Gamesa and Goldwind, referred in the section of the industry. REpower and Suzlon are the suppliers of the turbine part, since Martifer performs the construction of the tower.

Analyzing separately by segment of activity, it is possible to find the competition for the renewables unit as Iberdrola, Iberwind, EON – on average all the European countries have at least the main energy company also investing heavily in the renewables sector as to respond to the metrics demanded by the EU, also similar to the EDP Renováveis described before. In what comes to the infrastructures in metallic materials, more and more companies need to compete on an international basis as the developed countries are shrinking the investment and demand is now in the emergent ones.

FIRMS' VALUATION

After a deep analysis of the industries and companies that take place in this thesis, the next step is the understanding of the firms of them as of today, to then calculate the potential of merging the two. The stand-alone valuation of both becomes then a cornerstone of the assessment of the opportunity under study.

Gathering information about the industries both companies are inserted in and theirs strategic objectives for the future were the main steps to attain assumptions for this research.

Although consistency among the methodologies was bear in mind, the differences among the companies demanded a different logic of valuation. As for Martifer a sum-of-the-parts was developed based on the industries the company is currently in. On the other hand, for EDP Renováveis the division was based on a geographical division. The approach is based on the different drivers of the parts in terms of revenues, costs, financing and risks (operational, financial and other from specific order).

The valuation methods used were APV (Martifer business segments) and WACC (EDP Renováveis) from the discounted cash flow models available; and relative valuation based on multiples. However in the case of Martifer, it is a portfolio company, the concept of relative valuation was adapted by finding comparables within each business segment – facing the complexity of finding the appropriate comparables.

A. EDP RENOVÁVEIS VALUATION

The EDP Renováveis' (EDP R) valuation will be based on geographic breakdown since the company investments have different historical and prospective performances across the three main regions (Europe, North America and Brazil). Additionally, there is a separation between wind and solar but the latter is still residual since the first investment occurred in 2012, and no production has yet started (so far only 39 MW were installed in Romania). The fact EDP R is already pursuing the intentions of diversifying in the renewable energy increases the potential of synergies with Martifer since this one has know-how in the solar segment. In 2012, it was sold the mini-hydro in Spain (4,5 MW) meaning the exit of this business by EDP R.

The reasoning behind doing a distinct analysis is due to the particular risk of each region, not only operational but also from a financing perspective. The operations' risk is related with the performance of the windmills and the market legal framework. Furthermore the financing becomes an issue related to tax equity structures or project finance agreements - that are a reality for instance in the USA. Moreover it is the best practice considering finance literature and analysts equity research.

Onshore and Offshore differences are also worth to underline; however only in the UK the latter type of investment is already planned. Since 2010 prospects for the investment in the second type were started. The dissimilarities are inherent with the need of capital expenditure, both initial and ongoing. Although offshore is more expensive, the performance is improved by the location in windier locations as in the middle of the ocean.

The fact that China Three Gorges at 31st December 2012 was having intentions of performing a considerable investment (49% of the company) in EDP R was put aside since it was still waiting for approval by the Portuguese Competition Authority.

1. Explicit Period Length

The strategic objectives of the company were considered in the forecasts performed so that it required a certain length of the forecast. The investment plans impacted and demanded for a longer period, until 2020. As a matter of fact the more likely to happen strategic, operational and financial objectives are due in 2015. From an investment point of view the last installed megawatts totally considered start operating in 2017, this way the analysis was performed until 2020, considering years of production of those assets.

In order to perform the forecast, the assumption for CPI in 2019 and 2020 was of keeping the same rate as in 2018 (the last one available from IMF). Furthermore, the industry faces specific risks from several orders that create a certain uncertainty not only in terms of load factors (operational capacity of the wind farms), legal terms (change of the price or permitting licenses) and financing (increase of the cost of debt or scarcer resources imply the reduction of the pace of investment).

2. Currencies and Taxes

The valuation was performed in three parts, segmented by region: Europe (ex-UK), UK, Brazil, Canada and USA therefore the currencies to be assumed will be Euro, Real and Canadian and US Dollar, respectively for each part (the UK was excluded from generating free cash flows due to the inexistence of a reliable timing to start operating), then it will be used the exchange rate applied in their own conversions in the company's report. As a matter of fact, it is important to consider the fact the company is a diversified company where exchange prices may impact in the existence of a better performance or not. It is also important to underline a stable performance of the currency of countries like the Zloti and New Leu towards Euro. However, it was also assumed no currency risk since in case of turmoil, the hedging will be performed.

	2012	
Currency	Closing Rate	Average Rate
US Dollar	1,319	1,285
Zloty	4,074	4,185
Brazilian Real	2,704	2,508
New Leu	4,445	4,459
Pound Sterling	0,816	0,811
Canadian Dollar	1,314	1,284

Table 24 Currency Exchange Rates to Euro
Source: EDP Renováveis Report 2012

In what comes to taxes the situation is divided in the same way as currencies. However, the regime in the USA is more specific. The assumptions were based on the fact the revenues in Europe may be conducted to the headquarters in Spain and therefore subject to the tax rate there (Damodaran approach in the multinational companies case, 2009b), the USA to the American Tax Authority and the same for the Brazilian Revenues.

Both Canada and UK are not generating a remarkable amount of cash flows since the investments located in the regions are not ongoing yet. Nevertheless the subsidiaries are already established, again we do not account for the case of UK since it is not generating cash flow. Canada is the exception since the investment is expected to be online in 2015. EDP R North America is located in USA, Houston, therefore it was the tax rate used also for the investments in Canada since it is higher than the present Canadian corporate tax rate and within multinational companies it was adopted the sense of tax shields maximization (Damodaran, 2009b).

Country	Subgroup	2012
Spain	EDP R EU	30,00%
Portugal	EDP R EU	31,50%
France	EDP R EU	33,33%
Italy	EDP R EU	27,50%
Poland	EDP R EU	19,00%
Belgium	EDP R EU	33,99%
Romania	EDP R EU	16,00%
Canada	EDP R Canada	26,50%
USA	EDP R US	37,73%
Brazil	EDP R BR	34,00%

Table 25 Corporate Tax Rates
Source: EDP Renováveis Report

3. Leverage and Risk Parameters

3.1. Discount Rate

3.1.1. Risk Free

The risk free rate that is going to be used is the German Government Bonds (10 years) for the European operations and the US Government Bond (also 10 years) for the American, Canadian and Brazilian investments – matching the dimension of the explicit period. For both the calculation of an average of the last quarter of 2012 was performed, being respectively 1,75% for the US not and 1,42% in the German Bund. Considering the Brazilian case, an adjustment was performed to the risk free through an inflation differential (2012 data), that yielded 3,9%[10].

3.1.2. After-tax cost of debt

The financial debt of the company is mainly held by the EDP group (76%), being the reminiscent loans with financial institutions. EDP's financial debt is essentially issued at holding level (EDP S.A. and EDP Finance) through both debt capital markets and loan markets therefore the assumption of an overall cost of debt seems plausible. The investments and operations are funded in local currency to mitigate eventual currency risk.

[10] Adjustment performed through the following formula: $rf_{Brazil} = (1+rf_{USA}) \times \frac{1+\pi_{Brazil}}{1+\pi_{USA}} - 1$ (Koller et al., 2009)

The financing of the company is mainly at fixed rate (92%) and with a long-term profile of 10 years, beyond 2018, which is a remarkable point in terms of assuming a cost of debt based on real interest rate paid. This is true not only for the loans with EDP Group, but also for the project finances the company went through. In terms of currencies, 57% is in Euro, 39% is US Dollar and the rest in Polish Zloty and in Brazilian Real.

EDP R	2009	2010	2011	2012
Financial Debt	2.673,00	3.534,00	3.826,00	3.874,00
Interest Paid	87,30	166,90	189,50	205,00
EBIT	230,80	289,90	347,50	450,10
Interest Coverage Ratio (ICR)	2,64	2,95	1,98	2,25

Table 26 Interest Coverage Ratio

Source: EDP Renováveis Report 2012

The amount of interest costs increased heavily since 2010 with a higher net debt, in line with the ongoing growth program, an increase in interest rates reflecting the wider spreads on the debt contracted since 2009. The historical average of the ratio of net interest costs per net debt yields a 5,4% rate.

Nevertheless, a synthetic cost of debt was studied based on Professor Damodaran, as it was explained in the Literature Review. The interest coverage ratio of EDP R for the last 4 years falls into 2,5 although in 2012 it was lower than this value. The ratio implies a B+ SP rating which default spread is of 5,5%. It was used the risk free rate was developed to each region. Thus, the sum of the risk free with the synthetic default spread is 6,9% in Europe, 7,1% for the USA and 9,1% for Brazil.[11]

However the company is under a very specific situation of being financed by the parent group and in fixed rate terms, the percentage chosen was the one given by the company (and consistent with the calculations of interest payments per financial debt) of 6,9%, following a more conservative perspective since it is higher. Later, a sensitivity analysis to the discount rate will be performed so that this situation is covered in terms of possibility of a different cost of debt.

3.1.3. Cost of Equity

The risk free adopted was a specific one for each market, Brazil, Canada and USA based on USA government bond and European located investments based on 10-year German Bond. The beta used was the specific beta of the company as it is going to be later developed, of 1,16 (based on a peer group). The market risk premium was of 5%, under the assumption that one

[11] It was not considered an extra risk premium in terms of the cost of debt because the company's headquarters are in Spain but the financing is diversified by the existence of activities and investments worldwide (Damodaran, 2010) therefore the interest coverage ratio is already representative of the company's specific risk.

is in presence of a diversified investor with access to international investments on a worldwide overview.

According to the objective of performing a sum-of-the-parts a different cost of equity per region was computed based on the concept of the imputed equity risk premium (Damodaran, 2011). In order to calculate the country risk premium (to be later summed up with the basic market premium of 5% (Koller et al..), a factor that relates the volatility of the bond and equities was computed[12]. The volatility factor accounted for 2 years of data collected from Bloomberg for each country. For the European cost of equity, the gathering was weighted by revenue per country, as recommended by Damodaran in order to calculate the exposure to each country. The same approach was developed towards Brazil but relating to the USA government bond. The equity beta technique and analysis will be explained in the next topic.

Local Index	Country	Default Risk Spread	$\sigma$of the Index	σCountry Bond	Factor[13]	CRP
PSI20	Portugal	4,9%	0,2046	0,2969	0,689	3,4%
IBEX35	Spain	3,0%	0,2914	0,3083	0,945	2,8%
CAC40	France	0,0%	-	-	-	-
BEL20	Belgium	1,1%	0,3914	0,3083	0,965	1,0%
WIG20	Poland	1,5%	0,1868	0,1167	1,601	2,4%
BET	Romania	3,0%	0,2373	0,1697	1,398	4,2%
MIB	Italy	1,7%	0,2996	0,153	1,958	3,4%
IBOV	Brazil	2,6%	0,218	0,1258	1,733	4,6%

Table 27 Computations for the Imputed Equity Risk Premium

Source: Damodaran (2011): weekly data 2010-2012

3.2. Leverage and Betas

Firstly the equity beta of the company was regressed either against the local index it is quoted in and also towards the MSCI World Index for the last 3 years. As a matter of fact the EDP R's IPO was in 2008 and therefore the bias within the volatility of the share is an obvious syndrome (being at a lower value than the first price). It was considered a better approach to go for the industry beta that was proved to yield more accurate results when applied in valuation by Kaplan (1996).

[12] The country default spreads provide an important first step in measuring country equity risk, but it only measures the premium for default risk. To address the effect of expecting a country equity risk premium larger than the country default risk spread a factor is built based on the volatility of the equity market in a country relative to the volatility of the bond market (risk free) used to estimate the spread.

[13] Result of the simple division between the two volatilities

Beta Methodology		Comment
Time Horizon	5 years[14]	The time period used was a little bit longer so that it included the completed performance of the share since it was issued (29-06-2007 to 31-12-2012)
Frequency	Monthly	The distortion of daily and weekly data was approached in the first section of the literature review (Fisher, 1966 and Cross, 1973)
Adjustment	Adjusted Beta	It was not performed any adjustment due to the fact the company's beta is already being based on a wider amount of information than just its
Underlying Index	MSCI World	The principal index of the company is located was not used because it has a small scope and low-volume transaction creating a bias and non-reliable results; the MSCI by being a world index considers the fact the investor is able to diversify himself through investing worldwide[15]

Table 28 Beta Methodology of data extraction

Source: Cross, 1973; Fisher, 1966; Kaplan, 1996

Hence, and in order to compute a group of comparables it was performed a cluster analysis based on return on equity (ROE), enterprise value to EBITDA and debt to enterprise value (see Appendix 6). The group of companies was based on Bloomberg comparables that were clustered through the nearest neighbor method (Euclidean distance). The five companies that were closer to EDP R are: Iberdrola, ENEL Green Energy, Fortum Oyj, Acciona and Verbund. The latter was excluded due to the fact it has not investment in the wind segment.

Company	Country	Tax Rate (Effective)	Market Cap	D/E	Raw Beta	Unlevered Beta
Iberdrola	Spain	16%	26720	104%	1,2129	0,647
Acciona	Spain	24%	2788,25	140%	1,1057	0,536
Fortum Oyj	Finland	16%	13201,1	65%	0,8752	0,566
ENEL Green Power	Italy	35%	8275	84%	1,17129	0,758
					Average/ Median	0,627/ 0,607
EDP Renováveis	Spain	24%	3484	111%	**Relevered Beta**	**1,156**

Source: Bloomberg

The selected companies were chosen taking in consideration not only the presence in the power generation business, but dwelling in the renewable energy production by selecting only wind based businesses. Furthermore, the worldwide scope of investment was also assessed.

The definition of the target leverage ratio requires a two-folded analysis: the company's and an industry's overview of the metric. The current EDP R D/EV ratio is of 51,1%. The comparison with the industry shows that on average the leverage ratio achieves 51% and 54% for the average and media, respectively (see Appendix 7). It is a common approach to assume

[14] Black et al., "The Capital Asset Pricing Model: Some empirical tests" (1972)
[15] The nationality of the majority of the shareholders of the company is Portuguese but those are also able to invest in other industries and geographic markets.

that in the long term the company will tend to the industry average, therefore the assumption was of a keeping the same ratio as in 2012 (51,1%).

Cost of Capital Assumptions	North America	Europe	Brazil
Rf	1,75%	1,42%	3,9%
Market Risk Premium	5%	5%	5%
Beta Equity	1,16	1,16	1,16
Default Spread for Region	0,00%	2,41%	2,63%
Cost of Equity[16]	**9,5%**	**11,9%**	**12,8%**
Pre-Tax Cos of Debt	7,1%	6,9%	9,1%
After Tax Cost of Debt	**4,3%**	**4,8%**	**4,6%**
Marginal Tax Rate	37,7%	30,0%	34,0%
D/(D+E) (31 Dec 2012)	51,1%	51,1%	51,1%
Market Cap (31 Dec 2012; million€)	3,484	3,484	3,484
% of Production Tax Credit	11,3%	NA	NA
Return of Tax Equity Investors	**9%**	**NA**	**NA**
WACC	**8,0%**	**7,7%**	**10,2%**

Table 30 Weighted Average Cost of Capital

On the whole, it was assumed for the WACC calculation that for a longer term the company should follow the same structure as of today since it is already aligned with the trend in the industry. For the USA a specific capital structure was analyzed due to the existence of tax equity investors. According to research about the issue, the return required by them, after the financial crisis in 2008, increased from 6% to 8,5% (Bloomberg New Energy Finance, "Renewable Energy Project Finance in the US.: An Overview and Midterm Outlook" Mintz Levin Green). In 2012, the tax equity investors represented 11,3% of the enterprise value considered since it is worth € 0,9 billion (at market prices) – it was treated as a specific type of equity.

4. Capital Expenditures & Depreciations

Capital expenditures are a key element in the valuation framework, considering the investments plan in installed capacity expansion and maintenance. In the explicit period, the capacity additions were settled through the pipeline of the company. The investment in maintenance is mainly residual due to the existence of contracts of operation and maintenance with the supplier companies, nevertheless it was considered. Moreover the sources of materials are 9 of the top 10 players in the business, as it was stated in the Company Analysis (See Graph 9), therefore the quality of the service is assured.

4.1. Future Plan of Investments

The attribution of levels to the investments based on the year schedule to start operating refers to a division in three tiers: tier 1 that are close to construction (expected to start producing in 18 months); tier 2 for projects under licensing (time line of 18 to 36 months to be online); and tier 3 that are still under prospects (a period greater than 36 months to appear).

[16] Computation of the Imputed equity risk premium in table 4.

Hence, in tier 1, some of the projects are already under construction or about to enter in that phase.

Pipeline (MW)	Tier 1	Tier 2	Tier 3
Spain	81	228	1758
Portugal	85	9	14
France	25	175	245
Belgium	14	0	0
Poland	94	441	118
Romania	276	0	30
Italy	30	148	58
UK	0	0	1448
Europe	**605**	**1001**	**3671**
US	675	2598	3950
Canada	30	0	365
North America	**675**	**2628**	**4315**
Brazil	146	0	897
Total	**1426**	**3629**	**8883**

Table 31 Pipeline of Investments by country
Source: EDP R Handouts 4th Quarter 2012

The short and medium term investments of EDP R were considered in the explicit period. The total pipeline accounts for 18,6 GW in the company projections, nevertheless only 6 GW will be fully incorporated. The objective that was mandatory to achieve within the projections of the valuation was the 3,2 billion euros of amount invested until 2015, referring to an installed capacity of 1,8 GW within that period.

The investments are all in the wind segment since there is no concrete information about new markets or technologies. In fact, there are some references to the intention of diversifying in geographies and deeper investment in the solar business but no specific plan to incorporate. The chosen approach was to incorporate the MW in the tier 1 and 2 as part of the main business, at the pricing schemes assumed. The exception is Brazil whose investments in tier 3 are going to be started in 2017 and only going operational in 2020, since it is 896 MW it has to be smoothly in, 25% being added per year. The same approach was used to the tier 2 investments in USA, since it is a large amount.

4.2. Capital Expenditures by Region

The Capital Expenditure by region is crucial to perform and account for the consequences of investing differently in each region. In order to understand the historical capital expenditure per megawatt a cumulative perspective of installed capacity and amount invested was performed. According to the company's report and Deutsche bank the CapEx/MW installed is of €1,2 million and €1,3 million euros, correspondingly.

The wind turbine represents 70% to 80% of the capital expenditure per megawatt installed, being the reminiscent related to plant elements (the infrastructure around the windmill). The top 10 producers of turbines hold 90% of the market, implying a great power in terms of price negotiations. To avoid electricity losses or problems in the functioning it is really important to rely only on top quality turbines. The approach to compute the Capex per MW was to use the 2012 values (being consistent with Deutsche Bank suggestion of approximately €1,3 million) and adjust for the inflation levels in the three regions considered. In fact, the price of the turbines in a globalized market should not be different; however it was accounted a certain pricing for transportation and operation incorporated by the CPI of the location (by region).

Other capital expenditures were also accounted for in the valuation, being on average 5% of total investment per year that was equally added up to the investment per region. This item accounts for the maintenance and replacement investment, according to Deutsche Bank equity research report on EDP R.

Region	CapEx (GW)	2013	2014	2015	2016	2017	2018	2019	2020
Europe	Installed	3,980	4,158	4,550	4,861	5,292	5,508	5,523	5,523
	Under Construction	0,179	0,165	0,501	0,516	0,030	0,000	0,000	0,000
	Total Value (bn €)	**0,451**	**0,444**	**0,955**	**1,004**	**0,310**	**0,275**	**0,276**	**0,276**
USA + Canada	Installed	3,634	3,634	4,001	4,001	4,326	4,976	5,300	5,625
	Under Construction	0,235	0,235	0,162	0,162	0,162	0,162	0,158	0,158
	Total Value (bn €)	**0,389**	**0,394**	**0,306**	**0,311**	**0,323**	**0,341**	**0,346**	**0,358**
Brazil & Others	Installed	0,084	0,157	0,230	0,320	0,409	0,499	0,589	0,589
	Under Construction	0,073	0,045	0,045	0,045	0,045	0,045	0,045	0,045
	Total Value (bn €)	**0,107**	**0,074**	**0,080**	**0,088**	**0,096**	**0,104**	**0,082**	**0,086**
Total EDP R CapEx (bn €)		0,946	0,912	1,342	1,403	0,728	0,720	0,704	0,720

Table 32 Capital Expenditure per Region Assumptions (in GW, exception to "Total Values" in billion euros)

Considering the ownership of the projects, with exception for Portugal and USA, a simplistic approach was chosen by having a 100% ownership by EDP R, in Europe and Brazil (since it is their common practice). In the case of USA, a new vehicle needs to be created to yield the tax benefits and the conditions were assumed to keep as they are today. Additionally, a percentage of the installed capacity in Portugal is already accounting for the it is within the consortium *Eólicas de Portugal* so that the percentage of ownership implied only those MWs for the wind farm (the whole project is larger).

4.3. Depreciations & Amortizations

The operating period of the assets in the wind segment is 25 years, and in the solar it is 15. Nevertheless, for the windmills, in terms of useful life, it is possible to choose between 25 years without terminal value, and 20 years plus terminal value considerations. The second option reveals some advantages since the terminal value actually means the residual value at the end of the device's useful life and therefore within the industry it is more often used. The reasoning is based on the possibility of repowering (process of replacing the equipment at the end of useful life before it becomes too obsolete), or at least some consider a salvage value associated with some of the materials (around 20% of initial CapEx). Additionally some of the licenses are issued on an *ad eternum* basis (being more and more rare to occur, nevertheless they exist).

The depreciations were computed over the existing assets so that a historical analysis was performed; therefore the average depreciation rate is slightly below 5% since the majority of the assets owned are depreciated as having 20 years of useful life. Instead of using 5% rate, it is going to be used the stable average rate of 2010 to 2012, of 4,57%. In terms of intangible assets it was assumed the historical level of 6,57% amortization each year. The main value is related to software used in the operation of the parks therefore the amortization amount was distributed across the geographies by installed capacity.

5. Net Working Capital

The cash flow management of EDP Renováveis is being forecasted separately by different geographies. After the analysis of the historical information relative to the net working capital, in terms of days, receivables account for approximately 60 days in Europe, USA with 24 days and 23 days for Brazil. These values due to its constant performance were kept for the future of the forecasts of the receivables.

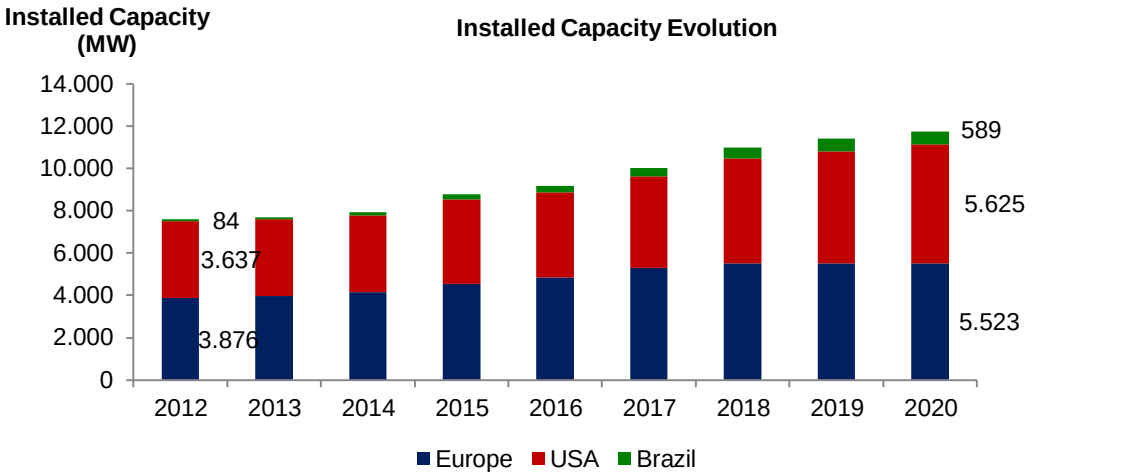
Considering the payables it was not so straightforward since the division by region is not given in the reports. The main driver of this variable of the net working capital is the operational expenses. In Europe, the assumption was of 120 days to pay off the OpEx values; while in the USA, Canada and Brazil, it is 90 days for both according to the company's report referred targets. Historically, the number of days in Europe was 133 days, USA and Brazil 102 and 98 days, correspondingly.

Inventories in a company like EDP R hold a marginal character since it is composed mainly by finished and intermediate products but also of (non-recurrent) advances on account of purchases. Given the residual nature of the cost of goods sold in this business (electricity), the driver usually considered to this item, it is more common in wind business equity research to make inventories vary with net tangibles. For that it was assumed the average ratio of 2010 to 2012, and then it was allocated to each market according to the forecasted net property and equipment.

6. Operational Forecast

The EBITDA Margin was calculated based on historical performance of the last 3 years per country. With exception to the new countries, like Italy, where the average of the performance in all European countries was considered a good proxy to apply to (if chosen a specific country it could have different a bias due to operational issues and regulatory system). In the case of Canada where the company is not working yet, as well, it was used the EBITDA margin of USA since they are considered closer comparables by the analysts.

Concluding, the installed capacity per year is consequence of the planned investments for the future. Over that item is then calculated the revenues and costs, according to the historical load factor and operating margin.



Graph 19 Installed Capacity Evolution: 2013-2020 Forecast

6.1. Load Factors

The power generation of wind turbines is highly dependent on capacity of the turbine, the wind speed, the height of the turbine and the diameter of its rotors. This concept is actually one of the main drivers for the valuation of a company in the wind business. The annual average load factor accounts for the time the windmill was producing energy over the available time (including the time that due to technical issues or of any other order it was not possible to produce).

The financing of activities is more and more dependent on the performance expectations of the park. A demanding threshold is being increased to a point where load factors must be above 20% to 22%. Additionally, other concern of investors is also about the type of tariff and stable legal frameworks. The fact that the Eastern Europe countries are predominantly market-based tariff systems over feed-in ones creates a larger volatility and uncertainty towards the project profitability therefore the investors are more reluctant to invest there compared with more western markets.

From a conservative point of view, since most of the load factors have evolved positively as time goes by, the load factor considered for the explicit period is the average of the last 3 years. The volatility of the wind implies the existence of a high level of unpredictability and additionally although efficiency improvements may occur, a certain decrease in the performance of the materials should also be reflected due to the normal aging of the materials.

The new investments' load factors were based on the company's expectations and data from the average wind farms present in the regions. In the case of the Italian project in Puglia and Basilicata, a press release from EDP R provided an expected average load factor of 29%, the value was adopted.

In the case of Canada a report that gathers information about wind parks within the countries gives a 30%[17] of expected load factor, reaffirmed when developing about the Ontario region (where EDP R holds investments under construction).

Additionally, in the case of new types of renewable energy like PV solar in Romania, the load factor was based on the expectations of the project (15%) released by EDP R in the Roadshow of December 2012. It is then matching the performance of the average of the parks of this type of energy in the same region according to report relative to the renewable energy in the country[18]. Taking in account that load factors are lower in the first year (since wind farms cannot operate at full capacity) the start of the operation is only considered to happen in the first full-operating year. Thus, the investments added included in the tier 1 and 2 instead of taking 18 and 36 months to start being online, it was assumed that it would take 24 and 48 months respectively and a 50% first year factor due to the fact that delays may occur, as well as, efficiency improvements to attain.

6.2. Pricing

One of the drivers of the tariffs is the consumer prices index, being actually, most of the indexed variable by law. It is then crucial to base the forecasts in the legal framework acting by now, which varies by country. Thus, the revenues' forecast was divided by country.

Country	Load Factor	Regulation	Price 2012	Price 2013
Belgium	24%	Market price plus green certificates – Separate GC prices with cap and floor for Wallonia (€65/MWh - €100/MWh) and Flanders (€80/MWh - €125/MWh). Option to negotiate PPAs.	112,00	113,39
Brazil	31%	Feed-in tariff – PROINFA	286,39	303,95
Canada	30%	Regulated Price by Energy Act (2010) updated based on inflation rates	135,00	137,01
France	24%	Feed-in tariff - stable for 15 years. First 10 years: receive approximately €82/MWh; inflation type indexation and with an "x" factor only until the start of operation.	88,84	90,24
Italy	29%	Market price plus green certificates (old regime)	157,35	158,88
Poland	27%	Market price plus green certificates - Option to choose a regulated electricity price (PLN198.9/MWh for 2012). DisCos have a substitute fee for non-compliance with GC obligation, which in 2012 is PLN286.7/MWh. Option to negotiate PPAs.	44,45	77,57
Portugal	27%	Feed-in tariff "Old Regime" – Tariff is calculated according to a formula that takes into account the load factor, installed capacity, among other parameters.	151,58	160,81

[17] Pembina Organization website: http://www.pembina.org/re/sources/wind
[18] EDP R website: *www.EDP R.com/assets/SolarRomaniaEN.pdf*

Romania (Wind)	19%	Market price plus green certificates. Wind generators receive 2 GC for each MWh produced until 2017. The trading value of GCs for 2012 has a floor of ¤28.2 and a cap of ¤57.4. 2 certificates for wind energy	137,11	139,48
Romania (Solar)	15%	6 green certificates for Solar Energy per MW	411,32	418,44
Spain	27%	Feed-in tariff - €81.2/MWh for 2013 and updated with inflation-related index the following year	87,71	81,20
USA (PPA)	32%	Electricity price – market price or long-term PPA - plus renewable energy certificates (RECs). In addition, a number of tax/governmental incentive schemes may apply, such as Production Tax Credits (PTCs), Cash Grants (CGs) and MACRs.	52,62	53,52
USA (Merchant)	33%		31,72	32,27

Table 33 Energy Prices and Regulation by country and type

Source: EDP R Handouts 4th Quarter 2012

A more detailed analysis shall be found in the Appendix 5, about the law decree and its changes, as well as, over the assumptions performed to achieve the 2013 price referred above. For the USA, a deeper overview was developed due to the existence of a specific tax regime.

6.3. Additional Capacity

From a simplistic point of view, the addition in installed capacity is based on the performance assumptions previously justified. For the USA the specificity of the pricing lays on the expectation of all new installed capacity fitting in power purchase agreements. The new installed capacity generates revenues with a first year factor decreasing its potential. The factor is of 50% since in some cases was seen between 25% and 75% for the first year, a halfway was a reasonable decision to account for some adjustments and or delays in the construction of the infrastructure.

6.4. New Solar Investments

The performance of the solar investments is basically based on the existence of an interest in diversification. Nonetheless, this intention was not included since it is really hard to predict how those investments will return, as the location and dimension of the project are critical variables.

7. Costs

The levelized cost of energy (LCOE, a concept already defined in the Industry Analysis section) includes capital, operation and maintenance costs, and is obviously linked to the expected annual energy production. According to the International Renewable Energy Agency (IRENA)[19], the wind turbine prices are declining due to the competition introduce by the

[19] IRENA website:
http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=277

Chinese. Furthermore, the capacity factors improvement also allow for the LCOE reduction after a steady increase in the recent years.

Operation and maintenance costs account for 20 to 25% of the total LCOE of current wind power systems according to the European Wind Energy Association (2009 data). It is clear that annual costs have been decreasing every decade (Wiser and Bollinger, 2012) attaining from now on stability in terms of efficiency.

The economies of scale become a real advantage in what concerns the wind power developments, nevertheless it is not so clear for larger than 20 MW installed capacity projects (the main shift happens when comparing 5MW with 20 MW of installed capacity). The differences across region are also existent due to the access or not to local manufacturing bases. For instance, China and India developed their local wind industries (at a certain scale extent) which fall into the existence of the skills for a low cost in the production of energy. In parallel, some other non-OECD countries by not having a so developed industry entail the need of bringing foreign engineers and general staff and transport. On the other hand, basic materials as cement, steel are more expensive, emphasizing this difference.

Concluding, the approach was that the inflation would be enough to account for the changes across countries and the performance in terms of EBITDA marginal should be kept on a historical basis.

8. Payout Ratio

The first time the company is willing to distribute dividends is 2013, since EDP R's first positive free cash flow occurred in 2012. Nevertheless, it is not the first time that this promise from EDP R does not become effective. For the next years it was assumed that it will not be possible due to the company's expansionist phase, not only to new markets but also technologies, as the solar one. In 2018, dividends will be distributed for the first time, with 75% plowback ratio (following the same ratio as the one expected if distributed in 2013).

9. Terminal Growth Rate

Country/Region	Wind Demand (CAGR 2020-2025)	CPI	Nominal GDP Growth 2018
Belgium	3,5%	1,2%	1,6%
BRICS	17,0%	2,9%	3,9%
Canada	7,7%	2,0%	2,2%
France	5,8%	1,8%	1,9%
Italy	4,6%	1,5%	1,2%
Poland	7,5%	2,5%	3,7%
Portugal	2,4%	1,5%	1,8%
Romania	3,0%	2,5%	3,5%
Spain	3,9%	1,5%	1,6%
United Kingdom	5,3%	2,0%	2,5%
USA	7,6%	2,3%	2,4%

Table 34 Possible terminal Growth Rate

Source: IMF; Wind Turbine Component Supply Chain Strategies: 2011-2025 (EER, July 2011)

In order of colleting several perspectives of different drivers of the growth in the terminal value, it was analyzed the industry data about the future of renewable energy, with focus in wind energy. The Emerging Energy Research, in 2011, seeks an overview by country from 2011 to 2025. For each market, the weighted average of the CAGR of the wind demand from 2020 to 2025 was computed. However, the values obtained were too high to be considered as terminal growth rates.

Hence, the nominal GDP[20] was used as a more reliable driver for the future performance. Yielding for the USA 2,3%, for the countries in European region 1,7%, weighted average by installed capacity, and in BRICS (as a proxy of the emerging markets the company wants to be present by then) 3,9%. These results are also aligned with Deutsche Bank analyst report in January 2012 on EDP R (Appendix 8).

10. Sum-of-the-parts Overview

Having in consideration all the assumptions presented previously it is now presented the enterprise value per region, as well as the price per share. The forecasted price in euros is of € 5,17/share (see Appendix 10).

In terms of overview of the discount rate it is important to underline the fact the company is looking forward to invest more in emerging markets, not only in Brazil but also in the Eastern Europe. Consequently, it increases the respective cost of capital, due to the country risk premium to be considered.

Region	(million euros)	Value per Share (€)
EV Europe	5942,54	3,75
EV USA	1967,94	1,24
EV Brazil & Others	281,17	0,18
Total EV	8191,65	-
Net Debt	-3355,00	
Minority Interest	-325	
Equity Value	**4511,65**	**5,17**

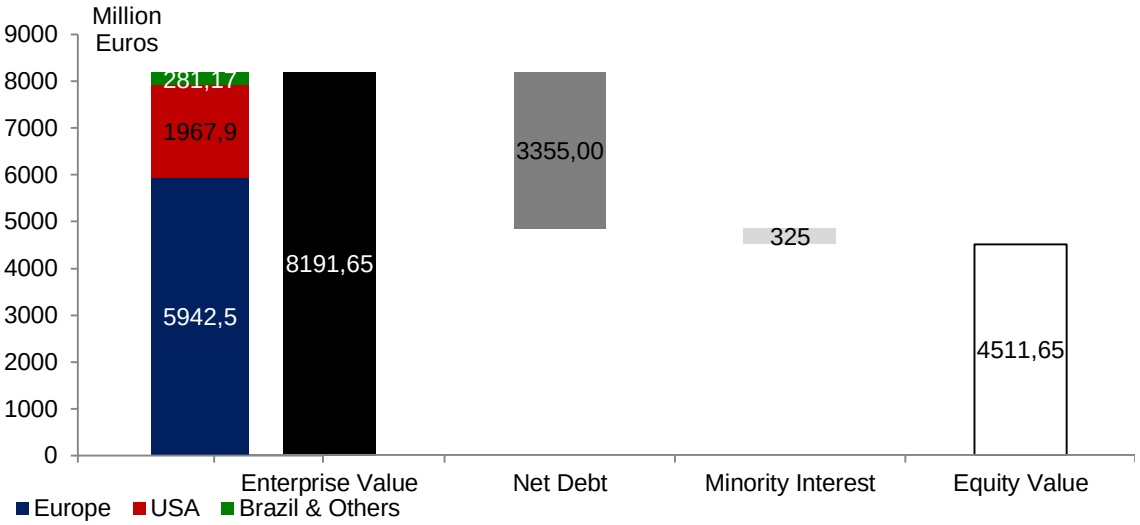
Table 35 WACC-based EDP R Valuation

[20] Inflation is almost the unique driver in terms of pricing and in the maturity the growth of the installed capacity and its efficiency of production decreases

The European branch of the company is worth € 5,95 billion and it is based on a consistent cash flow stream whose investments become lower after 2017 due to the maturity of the markets. The discount rate is based on the present capital structure, and the country risk premium accounts for the weight of the EBITDA per country.

The USA holds a value of almost € 2 billion, however the expansionist phase predicted for the next years imply a small percentage character of the explicit period net present value since the capital expenditures until 2015 keep higher than the EBITDA, reducing the free cash flow.

The Brazil will represent 5% of the installed capacity in 2020, consistent with the company strategic plan. Nevertheless, the free cash flows only become positive in 2019, also due to the high investment trend and the lag between the outflow and its return. It is then worth € 0,281 billion. The net debt amounts for € 3,355 billion in 2012, yielding an equity value of €6 billion. Consequently the target price is of € 5,17. Comparing with the stock price historical performance it is clear that the company is undervalued by the market. On the 31st of December of 2012 the stock price was €3,99.



Graph 20 Sum-of-the-parts by region (in million euros)

11. Multiples Valuation

After performing a cluster analysis with the comparables given by Bloomberg, a group of 5 companies were selected (the same used for the beta calculation). As a matter of fact it was part of the process to confirm the strategic alignment; and a worldwide scope of investment was also considered to be an important characteristic.

11.1. Market Multiples

Comparables	EV/Sales	EV EBITDA	Price Earnings
Iberdrola	2,46	7,60	9,53
Acciona	2,56	7,84	14,61
Fortum Oyj	3,53	8,70	9,79
ENEL Green Power	6,29	8,26	20,75
Average of the Group[21]	3,23	8,08	12,36
EDP Renováveis	**Sales**	**EBITDA**	**Earnings**
	1285,10	952,82	136,00
EV (based on Multiples)	4147,50	7697,41	
Net Debt + Minority Interests	3680,00	3680,00	
Equity Value (based on multiples)	467,50	4017,41	1680,48
Price per Share	0,54	4,61	1,93

Table 36 Relative Valuation

Source: Bloomberg

Certain pure renewable energy companies have been reintegrated in the main electricity generator of the country as it is the example of Iberdrola Renovables and EDF Energies Nouvelle (Spain and France, respectively) therefore the meaning of the multiples computed may be biased. The impact occurs in terms of the operational analysis, not only the 70% margins are reduced due to the existence of the electricity sale and production based on different sources that decrease the valuation to lower values. Nonetheless, Iberdrola was considered to the market multiples computation, because in their renewable energy business, (only 21% of the revenues) 97% is wind farms' based.

The multiples used were EV/Sales, EV/EBITDA and Price/Earnings based on 2012 values. Both EV/Sales and Price/Earnings undervalue the company comparing with the share price at 31st December 2012. However the EV/EBITDA ratio overvalues the company relative to the price at the same date, valuing it at a share price of €4,61.

11.2. Transaction Multiples

In the Industry Analysis chapter, research on the M&A environment in the renewable energy segment was developed. Traditionally the wind segment is the most representative one, accounting for 80% of the total transactions of the renewables' segment that in 2012 achieved 70 billion dollars (2012, Bloomberg New Energy Finance).

In 2011, the French and Spanish companies, facing a decreasing share price of their renewable units bought back the segments that were individually quoted in the stock market. The point was of, not only reducing expenses (whose expectations are of 20% decrease in the general costs), but also protect from a potential takeover bid due to the low stock price (undervalued). The trend verified in the case of EDF and Iberdrola was rumored about occurring in Portugal with EDP an EDP R, nevertheless it was never confirmed.

[21] Harmonic Average was performed, since it is the preferable method to average multiples (Baker and Ruback, 1999).

Target	Acquirer	Deal Value €M	% Acquired	Payment	TranstV/ EBITDA	TranstV/ EBIT
Shear Wind Inc.	Sprott Power Corp	113,4	100%	Cash	12,12	23,87
Fersa Energias Renov	Greentech Energy	291,4	100%	Cash	9,54	27,91
Power New Energy	China Three Gorges	204,4	29%	Cash	6,31	12,90
EDF Energies Nouv	EDF	5491,2	50%	Stock	5,11	21,48
Iberdrola Renov	Iberdrola	1602,3	20%	Stock	8,00	21,02
				Avg[22]	8,23	21,42

Table 37 Transaction Multiples in the Renewables segment (TV: Transaction Value)

Source: Bloomberg

Although transaction multiples carry the premium paid, the most recent deals in the renewable energy segment were examined with the purpose of finding a proxy to EDP R enterprise value.

Valuation (M€)	EBITDA-based	EBIT-based
EDP R	937,60	450,10
EV multiple based	**7.688,32**	**9.650,14**
Net Debt + Minority Int	3.680,00	3.680,00
Equity Value	4.008,32	5.970,14
Price per Share (€)	**4,60**	**6,84**

Table 38 EDP R Transaction Multiple based Valuation

The valuation of EDP R based on transaction multiples discloses a wide range between the one based on EBITDA and EBIT. The DCF model generates a price per share within the boundaries, giving a positive idea of the analysis previously performed.

12. Sensitivity Analysis

The sensitivity analysis covers eventual variations in the WACC and terminal growth rate impacting the value of the company.

Hence, the possibility of having different values for the WACC was studied as for instance if a higher risk free was taken (for instance the geometric average of 10 year German government bond for the last three years is 2,2%, 0,8 p.p higher than the one used). On the other hand, the cost of debt is also important for EDP R that keeps financing majorly based on the parent company (the EDP group) but the possibility of a different source would impact the value of the company since the cost should increase.

In terms of terminal growth rate, the fact is that it is related to a very long term perspective therefore it is recommended to understand the impact of different expectations among the three main regions of activity.

[22] Harmonic Average was performed, since it is the preferable method to average multiples. (Baker and Ruback, 1999)

Sensitivity Analysis Europe

		WACC					
	In %	6,6%	7,1%	**7,6%**	8,1%	8,6%	9,1%
	1,0%	7023,96	6314,34	5714,12	5200,40	4756,22	4368,77
	1,1%	7134,83	6404,86	5789,04	5263,12	4809,25	4414,00
	1,2%	7249,74	6498,40	5866,26	5327,63	4863,70	4460,37
TGR	**1,3%**	7368,91	6595,12	**5945,90**	5394,01	4919,62	4507,91
	1,4%	7492,59	6695,19	6028,07	5462,35	4977,07	4556,68
	1,5%	7621,04	6798,78	6112,90	5532,73	5036,13	4606,71
	1,6%	7754,55	6906,07	6200,52	5605,25	5096,85	4658,06

Sensitivity Analysis USA

		WACC					
	In %	7,0%	7,5%	**8,0%**	8,5%	9,0%	9,5%
	1,5%	2347,41	2097,16	1886,02	1705,69	1550,03	1414,45
	1,6%	2386,80	2129,22	1912,48	1727,79	1568,69	1430,34
	1,7%	2427,66	2162,37	1939,78	1750,54	1587,85	1446,63
TGR	**1,8%**	2470,06	2196,67	**1967,94**	1773,96	1607,54	1463,34
	1,9%	2514,10	2232,18	1997,02	1798,08	1627,77	1480,48
	2,0%	2559,88	2268,96	2027,05	1822,94	1648,58	1498,08
	2,1%	2607,50	2307,09	2058,09	1848,56	1669,99	1516,15

Sensitivity Analysis Brazil

		WACC					
	In %	9,2%	9,7%	**10,2%**	10,7%	11,2%	11,7%
	3,9%	363,38	308,01	261,90	223,03	189,90	161,41
	4,0%	372,72	315,57	268,12	228,21	194,26	165,11
	4,1%	382,43	323,40	274,54	233,53	198,73	168,90
TGR	**4,2%**	392,52	331,52	**281,17**	239,02	203,33	172,79
	4,3%	403,01	339,93	288,02	244,68	208,06	176,79
	4,4%	413,94	348,65	295,10	250,52	212,93	180,90
	4,5%	425,32	357,70	302,43	256,54	217,94	185,11

Table 39 EDP R Enterprise Value Sensitivity Analysis based on TGR and WACC per region (in million euros)

The overview of the sensitivity analysis was again seen by division, since the discount and terminal growth rates assumed were different per unit. The variations assumed for the WACC or of minus or plus 0,5 p.p. to provide a complete overview of the impact. The terminal growth rate was analyzed in the sense of introducing slight changes since those are also rates that because of the impact in terminal value represent a cornerstone of the valuation.

The impact of modifying the WACC is larger than changing the expectations of growth for the terminal value. In order to actually understand the impact in the value per share it was also

assessed the sum of each segment and discounted the net debt and minority interests, dividing by the present number of shares outstanding.

		WACC					
	In %	-1 p.p.	-0,5 p.p.	=	+0,5 p.p.	+1 p.p.	+1,5 p.p.
	-0,3 p.p.	6,94	5,78	4,79	3,95	3,23	2,60
	-0,2 p.p.	7,12	5,93	4,92	4,06	3,32	2,67
	-0,1 p.p.	7,31	6,08	5,04	4,16	3,41	2,75
TGR	=	7,51	6,24	**5,17**	4,27	3,50	2,82
	+0,1 p.p.	7,71	6,41	5,31	4,39	3,59	2,90
	+0,2 p.p.	7,93	6,58	5,45	4,50	3,69	2,99
	+0,3 p.p.	8,15	6,75	5,60	4,62	3,79	3,07

Table 40 EDP R Sensitivity Analysis: Price per Share (in euros)

The table above represents a wrap-up of the potential impact in consistent changes in all the business segments, of course, which is a bit unrealistic, but in the sense of giving an overview, it is more useful. The impact in the price is seen as severe specially if the WACC changes, rather than changing the terminal growth rate, since the column yields values between €6 and €8 for the variations in the g rate.

13. Equity Research: Comparison

Firm Name	Analyst	Recommendation	Target Price
BPI	Flora Trindade	strong buy	5,38
Berenberg Bank	Team Coverage	buy	4,90
Exane BNP Paribas	Manuel Palomo	outperform	4,80
Espirito Santo Investment Bank	Fernando Garcia Garcia	buy	5,70
Natixis	Philippe Ourpatian	neutral	3,91
Deutsche Bank	Virginia Sanz De Madrid	buy	4,70
Grupo Santander	Joaquin Ferrer	buy	5,10
Goldman Sachs	Manuel Losa	neutral/neutral	4,50
Societe Generale	Jorge Alonso Suils	hold	4,32
Banesto Bolsa SA Sociedad	Antonio Cruz	overweight	6,75
BBVA	Daniel Ortea Hernandez	market perform	4,25
BCP Investimento	Vanda Mesquita	buy	5,45
Macquarie	Shai Hill	outperform	4,50
JPMorgan	Sarah L Laitung	overweight	4,72
Barclays	Monica Girardi	equalweight	4,98
Banco Sabadell	Jorge Gonzalez Sadornil	buy	5,60
		Mean	4,97
		Median	4,85

Table 41 Equity Research Analysts Comparison

Source: Bloomberg

The existence of a reliable conclusion provided by the DCF model is confirmed by an overview with the main firms covering EDP R's stock price. As a matter of fact the price per share is close to the average of the price's given by the analysts. Their recommendations, according to Bloomberg, are of 75% buy which is an additional positive sign.

B. MARTIFER GROUP VALUATION

The group is the target company in this transaction therefore the accurate valuation of the company becomes essential to the assessment of the deal feasibility. Detailed analysis of each business segment was required after the understanding of the industry and the company.

In terms of breakdown by segment of activity, as it was stated before, since 2010 that the company is divided in three main business units: metallic constructions, solar parks projects; and wind and solar parks' operations (it is entitled as "Redeveloper" and besides management and operation of renewable energy, it covers organization support and innovation activities)[23]. Although there is information for a more extensive time frame, in terms of historical basis, only the three years previous to 2012 were used to the estimations since the company suffered a completely rearrangement in 2010, in terms of organizational structure and strategic alignment. For instance, nowadays Martifer Metallic Constructions includes the energy systems unit which was a separated segment in 2009.

Despite the importance of balancing the complexity of certain methodologies with its output quality improvements, the businesses are quite different (needing different assumptions) therefore it is more correct to perform a detailed sum-of-the-parts (SOTP) valuation.

1. Explicit Period Length

Although the company is composed by different industries with non-coincident cycles, the explicit period calculated accounts, equally in each segment, for 8 years.

Actually, at a first glance, the objective was of performing a 10-periods cash flow forecast, but he lack of data on the drivers lead to a shorter-period approach. Moreover, industry cycle considerations, especially in mature economies, are offset by investment in emerging markets, process which Martifer is already going through.

Additionally, there was the concern of matching the length of the forecast with the EDP R valuation explicit period. In EDP R the estimation of the performance until 2020 was required due to the existence of an investment plan to accomplish; and markets where the level of growth was analyzed until it was possible to assume a stable rate.

2. Leverage and Risk Parameters

The company when referring to the debt strategic management assumes a generic target, although the business risk is different, it is important to bear in mind that the company finances itself mainly in Portugal, and in euros.

[23] The company was then valuated as being three business segments: the metallic constructions, the solar and the "Redeveloper", adding up the holding as center of costs since it has not revenues.

One of Martifer's short-term objectives is to sell some of their assets to manage liquidity issues in repaying debt. As a matter of fact some of those assets are quite important for the merger synergies estimation therefore it was assumed the existence of a refinancing ability as time goes by creating less urgency in selling the referred properties.

The company's net debt is 376,6 million euros, in 2012, and the target for the end of 2014 is to decrease to a value within a range of 330 to 350 million euros. Concerning the debt structure, the fact the holding has almost half of the total net debt (155 million euros) required a deep analysis of the loans included in that value. Nevertheless, the information does not allow splitting it properly; the assumption was that 40% of the holding's debt was allocated to the "Redeveloper" segment, and the 60% equally divided between the metallic constructions and solar segment[24].

Value	(in million euros)
Net Debt	376,66
Market cap 31-12-2012	54,76
Price per share 31-12-2012	€ 0,56

Table 42 Net Debt and Market Cap

Source: Bloomberg

2.1. Discount Rate

2.1.1. Risk Free Rate

The risk free of a company like Martifer is inferred based on the performance of the 10-year German Government Bond, as it matches approximately the estimation of the cash flows and it represents a reliable proxy of a risk free. The value used in the valuation is the average of the last quarter of 2012, being equal to 1,42%. The usage of a larger sample allows for a more representative estimation of the risk free value.

2.1.2. After-tax Cost of Debt

Different perspectives were developed in order to assess the cost of debt. According to what was referred in the previous section, the assessment of the financial expenses divided by financial debt does not allow for an accurate value definition due to the unsteadiness in its values. In the last two years, the consolidated interest rate varies from 10% to 15%. Hence, it was studied the methodology based on a risk free and the ratings for the country, adding up a company's spread and a country risk premium. The addition of the country risk premium, based on the rating of the sovereign debt is a methodology already explained in the literature review.

The financing is performed mainly in euros as more than 92% have Euro as currency for the loans. Additionally, a great part of the companies operating activities (production and management) are run in Portugal, although the final client may be abroad.

[24] According to information provided by the Investor Relations.

In order to compute the Martifer's cost of debt, it is a priority to line up assumptions. In fact, over the rate of the German risk free, it is absent the computation of the company's risk premium based on its default probability. In turn, the yield on the German 10-year government bond average of last 3 months of 2012 is 1,42%.[25]

The historical negative performance of Martifer's EBIT implies a synthetic rating of D, therefore a 12% spread based on the interest coverage ratio (Damodaran, 2009a). Therefore, it was adopted as the cost of debt the rate of 13,42% which is in fact 10,5% after tax. It was not calculated a specific cost of debt for each business segment as it is stated by the company that part of the financing of the business is done on a consolidated basis, issued by the holding. The cost of debt is not only increased by the fact the company financing itself mainly in Portugal, but also due to the weak financial and operational situation (presenting negative EBIT for the last 3 years).

The tax is the statutory Portuguese corporate tax rate (KPMG) 25% plus the "derrama" of 1,5% since it is where the company holding is settled, and in the case of the multinational company it is a reliable approach.

2.1.3. Cost of Equity

The cost of equity of a company is based on variables that generate infinite discussions. The trend followed defines it as being based on CAPM equation whereas a sum-of-the-parts will be applied, it creates the need for different betas and more than one cost of equity.

The risk free is the one referred before (1,42% German Bond 10 year, average of last 3 months of 2012). In addition, the bottom-up betas will be the methodology used to be further developed below.

It was adopted a 5% rate as market risk premium based on Koller's (2005) diversified investor estimations (presented in the Literature Review), since it is crucial to account for the level of risk of operating in different markets. As a matter of fact, extra premiums must be considered. The country risk premiums correspond to the default spreads associated with Moody's country ratings, presented by Damodaran (2011), to be then developed based on the concept of imputed risk premium. As it was developed before, the country risk premium reflects the excess volatility of equity markets relative to their bond counterparts times the rate that accounts for the probability of default. The author further multiplies this default spread by a factor that relates the volatility of the bond with the specific local equity market volatility, as it

[25] Although the company is developing business in some emerging markets, it is also present in mature ones as UK, Germany and France. Additionally, the financing is mainly done in Europe, therefore the German bond was considered as correct proxy for a generic risk free.

was developed for EDP R. Damodaran suggest to weight the default spread based on revenues provenience, thus different cost of equity will be considered based on the business segment. Some of the countries are compared with the US government bond (in the Damodaran tables) when computing the country risk premium based on volatility of the market to the bond. (See tables in Appendix 11)

2.2. Leverage and Betas

Although the risk free and the market risk premium assumed were the same, each business segment (metallic constructions and solar) have their specific cost of equity based on each industry business risk.

The valuation, as sum-of-the-parts with APV, reduces the importance of the analysis of the overall company's beta because a different one was calculated for each business segment. In the literature review, it was concluded that an industry beta was more reliable (Kaplan, 1997). The fact the company is composed by a non-stable portfolio of business segments, in different industries implied the assumption of using a different equity beta for the main business segments. It was calculated under the same methodology as explained in table 28 (EDP R valuation section).

With the purpose of being consistent in terms of metrics used, the betas were based on a peer group for each business segment (unlevered beta calculated based on the average D/V ratio of the industry representatives). For the third business segment ("Redeveloper") an "as-of-today" debt amount was considered to calculate the equity value. In the APV method it is required the definition of a debt structure as time goes by in the explicit period so that interest tax shields can be calculated.

The debt plan for the period after 2012 was based on adding up 90% of the variation in net working capital and capital expenditures to the previous amount, assuring the financing of the operations. In fact, the group is under an intensive investment period and activities that usually demand for a careful management of debt levels. The company's objective of achieving a level of 4,5 of Net Debt/EBITDA was considered as part of the parameters in the financing decision making. However, only in 2016 it is verified.

Martifer	2010	2011	2012	2013E	2014E	2015E	2016E		2019E	2020E
Financial Debt	420,07	407,76	414,69	445,41	408,99	407,93	429,24		505,80	520,21
Cash	76,67	77,89	38,02	67,55	29,65	57,70	102,33		282,22	360,34
Net Debt	343,40	329,87	376,66	377,86	379,34	350,23	326,91		223,58	159,87
Net Debt/ EBITDA	5,82	36,87	90,61	9,27	7,66	6,07	4,55		1,98	1,22

Table 43 Martifer Net Debt/EBITDA (Complete table in Appendix 17)

2.2.1. Peer group

The beta for the industry was developed based on a two different criteria. On one hand, as an impactful filter, the group considered was based on the most similar companies according to the markets where they compete in certain business segment. However, Bloomberg and Google Finance were also explored so that a diversification of sources was used.

Since the Martifer Group does not release much specific information about the business segments, two analyses were performed. The first considers a comparison within the group of companies that Martifer contemplates as part of the competition and other is the result of a cluster analysis (run on SPSS, centering in Martifer's specific business unit) that relates the indicators of Martifer Solar and Metallic constructions separated (based on total revenue 2012, revenue growth last 3 years, and Net Debt/EBITDA of each branch).

The cluster analyses were made and for each business segment an output was drawn and it impacted in the calculation of the cost of equity for each business segment. However, the criterion was mainly based on operational performance since it is what allows for a comparison with the specific business segment, since the beta aims to the represent specific risk of the company.

2.2.1.1. Metallic Constructions

Company Name	Country[26]	Tax Rate	D/E	Raw Beta	Unlevered Beta
Metallurgical Corporation of China	CN	17%	3,505	1,081	0,894
Severfield-Rowenplc	GB	40%	0,271	1,301	1,119
Eversendai Corporation Bhd	HK	26%	0,013	1,081	1,081
Yongnam Holdings Limited	JP	20%	0,357	0,678	0,527
Kawada Technologies Inc	MY	40%	3,165	1,670	0,576
KOMAIHALTEC Inc	JP	40%	-0,11	0,678	0,678
Asset Beta					**0,813**

Table 44 Comparable companies and respective unlevered beta

Source: Bloomberg

Based on Martifer's Investor Relations Office and Bloomberg's information, a group of ten companies was included in the analysis, however due to lack of information, two were excluded (Billington Holdings PLC, Pochins PLC). To confirm that the companies are actually comparable to Martifer, a double check criteria was performed through an overview of the main type of activity developed beforehand. The companies included are Zhejiang Southeast Space Frame Co., Ltd., Severfield-Rowenplc, Eversendai Corporation Bhd, Yongnam Holdings Limited and Kawada Technologies Inc. Since Martifer Metallic Constructions does not provide detailed information about its capital structure, the comparison is mainly

[26] CN: China; GB: Great Britain; HK: Hong-Kong; JP: Japan; MY: Malasya.

operational and the cluster was not performed. Zhejiang Southeast Space Frame Co., Ltd. was excluded from the analysis as strategically the company only serves the Chinese market and is not a worldwide company facing a different business risk.

Metallic Construction	
CRP 2013	1,99%
CRP 2014	1,99%
CRP 2015	2,54%
Beta Metallic	0,813
Ra 2013	**7,32%**
Ra 2014	**7,32%**
Ra 2015	**7,77%**

Table 45 Unlevered cost of equity parameters relative to Metallic Constructions business unit

Within the peer group, some of the companies held a negative net debt, and according to Damodaran, the best approach is to set it as zero so that it is able to be part of the comparables. The computation of the simple average across these betas and then unlever it using the average debt to equity ratio across the publicly traded firms in the sample is the process.

The country risk premium was weighted based on the revenues. The fact the company's geographical weights will be based on order back log: for 2013 and 2014 the same since the works usually take one year and a half to two years to be completed; to 2015 and onwards it is based on the strategic approach of the company. The weighted average of the country risk premiums based on revenues one specific rate for the risk premium of 1,99% and 2,54%. The market risk premium adopted was of 5% based on Koller et al. (2005).

2.2.1.2. Solar

Within the segment of solar industry suppliers of components and project developers, there are ten main players that increasingly compete in a worldwide market, as the expertise is their main asset. According to Bloomberg New Energy Finance, the segment is still facing challenges but the development of the emerging economies is creating opportunities; however the nationalities of the companies are still concentrated in high-tech countries like Germany and USA, or ones traditionally linked to the sun, like Spain and Portugal. In Europe, Martifer holds the certification in terms on solar energy projects, corresponding to the 6th best player in terms of quality service, in 2012.

Solar	
CRP 2013	2,5%
CRP 2014	1,9%
Unlev Beta Solar	0,721
Ra 2013	**7,2%**
Ra 2014	**7,13%**

Table 46Unlevered cost of equity parameters relative to Solar business unit

Digging in the market structure, there are two types of players. Hence, it can be split between the ones that produce the solar PV modules (in different variants from silicon to thin glass) and the ones that also develop a complete turnkey project, mainly in terms of a service of Engineer, Procurement and Construction (EPC) and also Operation and Management (O&M). Martifer until 2 years ago was in both segments but the competitiveness level of the Chinese players in the specific production of the modules lead to a restructure of this segment towards cessation of activity (having now the factory closed). Within the comparable companies, there are corporations present in both businesses or just in one of them (Bloomberg Comparables

for Martifer Solar segment). The ones that were excluded from the group were the ones that only produce PV modules as their strategy is by now completely different from the Martifer's.

Hence, six companies were considered as comparable with Martifer Solar. The criteria as discussed previously was based companies that represent the same business in terms of operations and risks, overlapping with the company data about their main competitors: Conergy AG, Solar Fabrik AG, Fuer Produktion Vertrieb, aleo solar AG, Phoenix and Solar AG, Centrosolar Group AG, Sunways AG and Solon SE.

Company Name	Country[27]	Tax Rate	D/E	Raw Beta	Unlevered Beta
Conergy AG	DE	32%	2,553	2,141	0,782
Solar Fabrik AG Fuer Produktion Vertrieb	DE	32%	-0,458	1,609	1,609
aleo solar AG	DE	32%	0,181	0,880	0,783
Phoenix Solar AG	DE	32%	-4,152	1,097	1,097
Centrosolar Group AG	DE	32%	18,002	1,658	0,125
Sunways AG	DE	32%	1,242	1,186	0,643
Solon SE	DE	32%	412,531	1,746	0,0062
Asset Beta					**0,721**

Table 47 Comparable companies and respective unlevered beta

Source: Bloomberg

The generic items as risk free and market risk premium were the ones stated above. Concerning the country risk premium, as in metallic constructions' the weights were computed based on geographical diversification of revenues (order back log of 2012 as source of information). However in the case of this type of projects its duration is shorter (than in the metallic constructions segment) and the 2013 weights are based on actual order back log. On the other hand, in 2014, it already accounts for the strategic definition of the company and the proper sense of being present in certain markets with solar projects – to be further developed in the revenues forecast later on.

3. Capital Expenditures& Depreciations

The relationship between the potential CapEx investments required and the activity of the company was assessed in order to forecast the expenditure for the explicit period. In general, and due to the restructure of the company since 2010 which included the sale of assets, the impairment losses presentation and the revaluation of several assets, it is not possible to find an obvious and clear historical pattern.

Metallic Constructions	2010	2011	2012	Δ 2010-2011	Δ2011-2012
Assets	511,59	402,46	382,57	-21%	-5%
Investment	7,20	13,72	10,11	91%	-26%
Depreciations	10,12	9,57	7,89	-5%	-18%

Table 48 Metallic Constructions Investment Items

Source: Martifer 2012 and 2011 Report

[27] DE: Germany

Regarding the metallic constructions the main investment to be performed is in the infrastructure of a production unit, though the main outflows of money are materials and human resources expertise. Since no expansion plan is being developed, and the metallic constructions business unit is not in steady state (for instance the unit in Oliveira de Frades is in 99% of usage of its capacity but the Portuguese (Benavente) and the Polish factories are closed, the Romanian one is at 25% capacity and the Angolan and the Brazilian at 60% (as of end of 2012)), the need for intensive investment is lower. In total, 80000 tons of metallic structures represent the present total capacity. Furthermore and however the business is likely to be run in different geographies from the ones were factories are held, it is assumed due to the best practices being developed, that the production can be performed miles away from the final destination of the structures. The final execution is then performed *in loco* of the infrastructures of the client (usually the client-company is a big construction firm therefore already in the process of construction). Considering the energy systems, those are now a residual segment of the business since the demand is greater for the structures; nevertheless the expertise and the machinery are generally the same to produce wind towers, for example, so that it is easily transferrable.

Solar	2010	2011	2012	Δ 2010-2011	Δ 2011-2012
Assets	248,78	316,05	288,99	27%	-9%
Investment	11,76	27,88	31,01	137%	11%
Depreciations	2,31	2,42	2,72	5%	12%

Table 49 Solar Investment Items

Source: Martifer 2012 and 2011 Report

Regarding the solar segment it is crucial to underline the fact that the company is mainly under a service segment rather than in the industry of solar PV production, that as a matter of fact is in need of constant investment. Nevertheless, the company still holds the assets to produce solar panels: 100 MW/year capacity in PV modules.

Others	2010	2011	2012	Δ 2010-2011	Δ 2011-2012
Assets Holding	511,29	551,62	550,63	8%	0%
Assets Redeveloper	264,09	245,42	224,13	-7%	-9%
Investment	27,37	19,66	4,97	-28%	-75%
Depreciations	12,09	6,25	6,87	-48%	10%

Table 50 Others Investment Items

Source: Martifer 2012 and 2011 Report

In terms of the parks (either wind and solar) have their specific maintenance issues but after the initial investment it is not supposed to require a regular investment of any kind. And the holding is having a stable value among time.

As no new big investments are predicted among the company's assets a conservative approach was developed. For example, in terms of the metallic constructions it is assumed by the company that when needed certain machinery is easily transported, according to Martifer.

Segment	Relationship	2010	2011	2012	CAGR 2010-2012
Metallic Constructions	Investment/Revenues	2,1%	5,7%	4,0%	40%
	Depreciations/Investment	140,7%	69,8%	78,0%	-26%
Solar	Investment/Revenues	5,3%	9,5%	13,4%	59%
	Depreciations/Investment	19,7%	8,7%	8,8%	-33%
Redeveloper	Investment/Revenues	120,6%	135,6%	29,1%	-51%
	Depreciations/Investment	44,2%	31,8%	138,1%	77%

Table 51 Capital Expenditure and A&D recent performance

Source: Martifer 2012 Report

It would be interesting to analyze the percentage of the assets that are allocated to each segment but there is any released information covering that division. The analysis performed on table 51 is based on average values of the last 3 years (2010 to 2012). Considering the previous information, it is still possible to define a pattern. For instance, the investment in the metallic constructions are residual and barely offsetting the depreciations (in 2010 it was actually lower than it). The solar unit seems to be yielding a more focused investment strategy that will decrease in few years as no expansion plan is public; however it is indeed the business segment that requires some investment as it is one of the bets for the future. Considering the "Redeveloper" segment unit, it is mainly under an investment replacement levels situation.

The assumption about the performance of A&D and CapEx is based on expected trends according to the historical data already analyzed (although the future strategic planning was also included). The approach for the metallic constructions will be to invest the average of the capital expenditure per revenue of the last 3 years - which is 3,9%. The depreciations will be calculated as a % of the investment (being indirectly a % of the revenues), keeping the average of the last 2 years since the depreciations were exceptionally high in 2010. Nevertheless it is still needed to consider that the link to the revenue makes sense as if needed the growing business will be matched by the assets serving it.

The solar segment is Martifer's "cash cow" (considering BCG matrix terminology), with growth opportunities to yield in the future. On average, for the last 2 years, 11,5% of the revenues of this segment have been reinvested and it will keep the same rate until 2018. As the business will evolve, the usage of a historical rate that matches the relationship between investment and revenues seems to be a reliable source of information. In order to forecast the depreciations, the reasoning was the same as for the metallic constructions. Hence, it was based on historical data.

Regarding the holding and the "Redeveloper", it will be assumed on replacement investment levels. The "Redeveloper" conceives the existence of renewable energy assets which useful life is of 20 to 25 years.

4. Net Working Capital

Since the company does not disclose information about the specific cash flow management of each business segment, it was distributed based on the regular drivers of each items of the net working capital. So, concerning the receivables it was directly linked to sales of each segment; the payables were based on cost of materials, outsourcing and others (ignoring the salaries and wages); finally, the inventories were only linked to the growth of the cost of materials.

Consequently, different predictions were computed for each business segments. By studying the businesses of metallic constructions and solar, similarities in terms of net working capital and which drivers affect it were found. The payments by the clients, although the projects have different durations, end up matching. For instance, in the metallic constructions' business the terms are longer but the payments are made partially, when defined stages of the construction are attained; as it is defined in the agreement beforehand. In what comes to inventories both have a residual amount due to heavy carrying costs.

The company released in the presentation of 2012 specific information about the cash flow management. It was stated that in 2012 a remarkable management of net working capital was achieved. Not only the mature markets as France and UK, paid in very acceptable terms, but also the projects with the governments are representing less of the sales, which traditionally take longer terms to perform the payments. Considering the payables, historically there is a pattern of representing 40% of the costs, therefore on average the company takes 143 days to pay back the suppliers. In terms of inventories, the company is not used to have the materials for a long term in their warehouses, as it was previously referred. In fact, in the last 3 years, it varied between 30 and 40 days. Again, the maintenance of the stable historical performance was adopted for the predictions of the explicit period.

The cash conversion cycle decreased severely from 2010 to 2012, from 129 days to 70 days (being already 73 in 2011), which is a positive point in terms of liquidity risk reduction. Finally, the overall assumption was that the situation of 2012 is the basis for the forecasts, as the company defined its maintenance as a strategic objective.

5. Operational Forecast

The operational forecast includes not only the overview of the main business segments in terms of turnover, with a detailed analysis of revenue and cost drivers, but also a deep perspective for the "Redeveloper" segment. In spite of the latter not being one of the main segments of activity in the company, it is indeed important to perform its valuation, as it will be one of the units affected by the merger to be later assessed. This way, it was developed a

specific analysis by park the company is operating in order to understand the management and the practices.

As it is not disclosed by the company reports the detailed expenses for each business segment, it was computed seizing the EBITDA of the Revenues. In terms of type of costs, the historic average of the weight of the four types of cots (materials, salaries and wages, outsourcing and others) was equally assumed as a factor.

Costs by type	2010	2011	2012	avg
Cost Of Materials	44%	53%	46%	48%
Outsourcing	26%	19%	18%	21%
Salaries Wages and Employee Benefits	14%	14%	18%	15%
Other Operating Expenses (FSE)	16%	14%	18%	16%

Table 52 Costs Allocation

Source: Martifer 2012 Report

5.1. Metallic Constructions

This segment incorporates the activity related with the construction industry; however a part by producing components to windmills and oil & gas structures is also related with the energy segment. In general, the main link is to the construction sector. The industry is defined as building subcontractors, according to Bloomberg. In what comes to the improvements about the industry efficiency, it was assumed that the learning curve of the company is not possible to estimate. There are two main reasons for it absence: the diversity of components they already produced, and the fact that this segment exists since the beginning of the corporation therefore the type of response given is already efficient.

5.1.1. Revenues

The most reliable drivers are macroeconomic variables, since information about the industry in terms of forecasts is scarce and short-term. The positioning of this unit segment reveals the presence in the engineering and construction industry in general. However it is also important to state that there is a broader approach of the unit.

In terms of the future of the business unit and its drivers it was assumed that the link with the construction business is the greatest one. According to information released in 2012, the order backlog is 95% linked with the construction business, and 5% to the navy side. Included in the 95% stake of the "pure" metallic constructions is the oil & gas activities therefore it was performed calculations based on the GDP of the countries in the order back log.

A construction takes at least two years to be finished and the revenues are recognized as it is going forward. This way, for the first two years of forecast, it was considered a stable

geographical distribution of operations based on the order back log. For 2015 an onwards the approach was based on strategic expectations.

The perspective used, considering the division within the business segments (metallic structures: 77%; aluminum: 18%; navy: 5%) demands for different drivers. The metallic constructions segment was indexed to the GDP the same for the steel since it is the main material of the metallic constructions. For the aluminum stake, the demand forecast for the material in value sourced by Bloomberg is given by country hence considered as a reliable driver. The Navy business and since it represents only 5% of the order back log in 2013, the approach used was based on the Portuguese GDP estimations (the activity is linked to the location of the harbor). It was always performed in nominal terms for the sake of consistency in the estimations. The growth can be sustained by outsourcing in case the projects exceed the capacity of the company which is nowadays of 80000 tones/year. Nevertheless, there are 2 closed factories related to this segment (one in Portugal and another in Poland) and the Romanian factory has 75% of slack capacity.

Geographies According to information referred by the company as a strategic alignment for the future, the focus of the company are the growing markets as Africa and South America and developed countries in Europe, as France and UK. Although there are production units in Portugal, Romania, Australia, Angola and Brazil, the exposure of the company is broader, as for instance the production in Portugal is easily transported to the country through the harbor in Aveiro.

Weights In terms of importance of each geography, the next two years of the projections were based on the order backlog, since the average duration of each project is 2,5 years (based on company's data, Report 2011). For the next years, the weights were based on the countries the company is betting the most as it was referred before: mature ones and emerging markets in Africa and South America.

5.1.2. Costs

Firstly, it was studied the possibility of making a link with some commodity prices that play a crucial role in the production of the final product of the company. Within the materials the company uses the most the aluminum was the one that presented forecasts for the next years. Nevertheless, it was not a reliable source of information for two reasons. On one hand, the link between the historical prices of this material and the cost of materials of this segment was not proven by a correlation index that either yielded values of 4% to 43%, and never statistically significant (with different types of materials). Additionally, and having a more practical insight, the company does not buy the materials at its spot price but at large quantities negotiated by order. The complexity of the business considers the existence of several types of supplies with different purposes so that it would be severely intricate to consider them all.

Hence, the costs were derived based on the EBITDA margin the company defined as a target performance. As a matter of fact, the average of the industry is 8%, but historically 9% to 10% were already achieved. Considering Martifer's expertise within the sector, it will be assumed that until 2018, the 8% of EBITDA margin target will be an accomplished metric. This way, 2013 will already represent a positive margin of 4% growing every year at a constant CAGR until 2018. The main reasoning for the feasibility of such objective is related with the worldwide presence and the company's experience in the sector. The firm is already working with the main constructors in a worldwide basis, serving in developing countries in Africa and in the Latin America.

5.2. Solar

As time goes by, it becomes evident the strategic trend of Martifer's solar segment in operating on a business-to-business basis and less for the personal consumer. Additionally, the company redefined the strategy due to the changes in the cost structure of a project development. It is worth it to only act as the developers of the project, and use the expertise and experience in the turnkey project. The point is that no longer the sale of the solar panel itself is in the revenues structure, as they are not competitive enough. As a result, the branch is mainly driven by the sale of solar panels in terms of MW which is a large project metric. The data was provided by Citi Research on a note about solar energy, with forecast until 2020.

Solar	2013	2014	2015	2016	2017	2018-20
Volume Impact	36%	47,30%	16,80%	31,10%	23,00%	13,10%
Price Impact	-3%	-3%	-2%	-6%	-4%	-4%
Total Impact (mkt %)	1,70%	2,70%	1,10%	2,00%	1,90%	1,00%

Table 53 Global Demand of Solar (in MW) Growth rate and weightings based on order backlog and company strategy

Source: Citi Research, Company Information

Recently, according to Bloomberg Energy Finance (and the company also refers to this change in its Report), the cost of PV modules reduced heavily. In general, the entrance of China in the market created a fiercer competition; additionally, the effect is also based on the evolution of the technology. The reduction is shown above in Table 54 and Graph 22, but the remarkable number is from 2011 to 2012, when a decrease of 40% occurred. The efficiency improvement is likely to keep going for the next years and it will be later developed.

5.2.1. Revenues

The approach for the revenues was based on an industry report of Bloomberg Energy Finance in terms of demand for solar energy in MW. Dwelling the effects over the project pricing, the fact the costs are decreasing heavily will contribute to more competitive values (especially in the mature markets rather in the emerging ones due to competition). This effect will be assumed of impacting in the same proportion the revenues, as a fiercer competition in the market implies a generic adjustment. The possible growth in value was then multiplied by the

market share of Martifer in the markets, and assuming it will increase as Martifer's presence matures in each geography.

Geographies The countries that represent the largest percentage of revenues of this business segment are Portugal, Italy, USA, France and United Kingdom. However, it is present in 20 countries, and several projects in all of them have been part of the revenues therefore the accounting for the demand perspectives of them is crucial. The exclusion of Asia in general, only including India as an important region is one of the decisions that were taken in order to achieve a more accurate conclusion. For the 2013 estimations, the order back log of 2012 was assumed. Considering the years after, the information used was provided by the company expectations and the actual development of the industry in certain countries.

Weights First of all, the countries with greatest growth expectations for the usage of solar energy are in Asia: as China, Japan and India. Nevertheless, European and America also express a considerable growth for this type of renewable, the change in the type of support given due to a more strict approach in legal and incentives politics is important to keep in mind. Therefore, the computation was based on the market share the company already holds in each country.

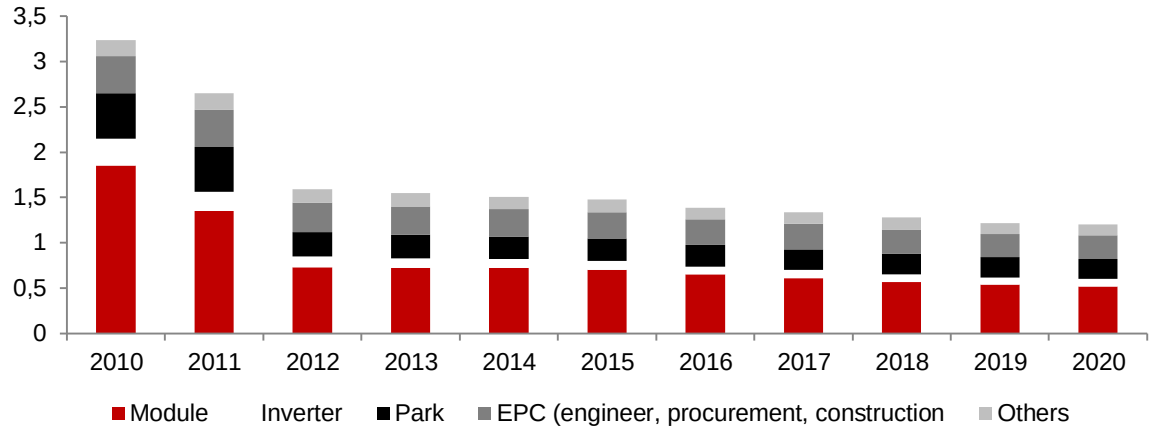
The forecast of this segment gathers information about the countries the company is looking for continue or start doing business in. The analysis of their market share based on 2013 demand and its order backlog by country in terms of MW allowed to perform a conservative average of business they are able to catch in each country, of 5,1%. However, in more stable markets and where they are present for a longer term like Portugal the share is of 13,4%. Hence, it was assumed that until 2018 the company will achieve a greater percentage of the business opportunities in any of those countries – reaching a 12,5% of share. This way, this final computation accounts for the fact that most of the projects available cannot be absorbed by the company. As the solar energy demand in megawatt represent an increase of the country's installed capacity, and not an automatic increase of megawatts installed by Martifer.

5.2.2. Costs

The costs of solar segment had a more specific analysis. As a matter of fact there are estimations released by Bloomberg Energy Finance (NEF) that Martifer also used for the 2012 Company presentation that show the huge decrease in the price of a project in this industry from 2011 to 2012. It is related with the development of the technology but also with the entrance of China in the market. Martifer was obliged to change its business strategy, if before they produce their own solar panels, now it is considered as a material they buy to more efficient suppliers in terms of costs. This way the reduction of the costs was linked to the expectations of NEF, shown in Graph 23.

The other costs were obtain by difference, the point is that the efficiency of the EBITDA margin evolve to the industry average of 9,1% until 2018, which implied a CAGR from 2013

after of 0,4% of its costs. The other three type of costs were allocated based on an average if considered only them, but decreasing to achieve the EBTIDA margin already mentioned.



Project Cost	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Project	2,65	1,59	1,55	1,51	1,48	1,39	1,34	1,28	1,22	1,20
Total Δ (in %)	-18%	-40%	-3%	-3%	-2%	-6%	-4%	-4%	-5%	-2%

Graph 21 Price of Solar Projects decrease (project type comparison), in million Euros

Table 54 Price per project and variation (forecast), in million euros and % of variation

Source: Bloomberg Energy Finance (NEF)

5.3. "Redeveloper"

The revenues of the "Redeveloper" business segment are based on the production of electricity (which is directly sold to the network) or in the payment of a fee due to the service of operation and management of the park (in this situation, the company does not own the park). Although this information is public, it is not known the breakdown within these two different types of businesses. Nevertheless it is assumed that the revenues are coming from the parks based on each one capacity in MW. In fact, it is reasonable to assume the link between the revenue efficiency of the park and the payment received by the company that manages it.

Type	Country	Name	Year Started	Remines cent Life	Capacity	Stake	Tariff type	Tariff (€/MW) for 2013	Margin	Obs
Solar	Spain	Eurocabs	2009	16	7,23	100%	Feed-in	267,7	70,5%	Info released by Martifer with Spanish Law
		Borox	2009	16	4,83	38%	Feed-in	267,7	70,5%	
		Moratalla	2009	16	4	49%	Feed-in	267,7	70,5%	
Wind	Portugal	V. Grande	2008	15	12	47%	Feed-in	75,0	73,5%	Info released by Martifer with PortugueseLaw
		SPEE 2 e 3	2008	15	18,9	50%	Feed-in	75,0	73,5%	
	Brazil	R. Ventos	2008	15	14,7	55%	Auction	79,0	76,3%	Info released by Martifer with PROINFA
		MS Brasil	2014	20	94,5	55%	Auction	79,0	76,3%	
	Romania	Babadag	2013	20	42	100%	Green certificates	77,4	74,3%	Law 220/2088 Romania

Table 55 Overview of the assets under operation

Source: Martifer 2012 Report and Laws of the countries

The valuation was performed on the basis of MW per country, accounting for the different regulations and technologies the company is exposed to. Additionally, in terms of historical performance, it is not possible to establish a pattern as projects were bought and sold, and in different parts of the process of Engineering, Procurement and Commercialization (EPC), therefore the contribution to the revenues is not known – apart from the ones held during the year of 2012 that follow in the table below.

It will be forecasted all the variables based on the rational that even the investments classified as ready to build will not get financed within the time of the valuation. As they are only in paper, it will be classified as having no value. In fact, it is the recommended approach by the auditing company. As a matter of fact, some of the only-licensed projects' book value was reduced through impairment losses; the value paid was assumed as a loss since there is no potential of being financed in the short term. The financial crisis and the hazy economic environment generated a foggy moment for the investment in general, but also to the alternative type (where this kind of projects are inserted in).

It is important to add to this segment analysis that, although the point is to value the units that generate cash flow, the consolidation presented in the reports does not provide a costs breakdown. The renewable projects management and the others related to the company's holding and innovation lab are consolidated. Thus, the point was to search for methodologies not linked to the performance of the operations, but directly to the sales – it will be further developed.

5.3.1. The assets

Although the parks in Poland were sold from 2011 to 2012: two under operation and one under construction, some renewable assets are still within Martifer's portfolio. It was concluded that the Romanian wind park, with a capacity of 42 MW, and the partial ownership of the parks in Portugal, are all in a steady state operation. Concluding, the company holds wind parks in Brazil, Portugal and Romania, and the solar ones are in Spain. Considering the Brazilian wind park that is under construction with 95,4 MW of installed capacity it was finished in the beginning of 2013.

When the assets are not fully owned by the company, the distribution of the revenues from them are done based on the percentage of ownership, therefore the valuation will be done based on the method stated in the company's report (which means that the asset will be evaluated and the correspondent percentage will be used for the sum-of-the-parts).

5.3.2. Relative Valuation

The valuation was performed based on a Deloitte Assignment that tries to generate a reliable multiple to companies that are focused in developing wind and solar parks. The research was done with multiple regression and the data base was 5 yearlong including several companies mainly in Europe (72 transactions, to be precise). The advantage of the multiple regression

technique is related with the possibility of finding out the multiple for each stage of the process of development of a renewable energy park and, for instance, by size as well. As a matter of fact, it was specifically developed in terms of installed capacity the companies with greater capacity than 200 MWs.

Wind Farm Analysis	Installed MWs
EV/MW multiple	1,6
Upper EV/MW multiple	1,8
Lower EV/MW multiple	1,5

Solar Farm Analysis	Installed MWs
EV/MW multiple	4
Upper EV/MW multiple	4,7
Lower EV/MW multiple	3,3

Wind farm including size	<200 MW	>200 MW
EV/MW multiple	1,2	1,7
Upper EV/MW multiple	1,5	2,4
Lower EV/MW multiple	0,8	0,9

Table 56 EV/MW for solar and Wind energy

Source: Deloitte[28]

For the wind assets it was used the lower than 200 MW average multiple and for the solar the mean as well. The solar assets yielded a value of 44 million euros in total, considering the partial ownership of the parks. The wind worth 92,3 million euros, under the same assumptions referred above.

It was also computed a multiple based on EV/EBITDA of comparable companies. The ideal multiple would be EV/Sales, since the EBITDA accounts for the holding of Martifer (impacting the EBITDA and not the Sales). Nevertheless both multiples were computed in order to get as much perspectives as possible. The conclusions varied between 104,25 and 74,9 million euros for Sales and EBITDA-based estimations.

Company	Sales 2012	EV/sales	EV/EBITDA
Etrion Corp	55,7	5,534	9,306
Abo Invest Ag	14,3	4,608	6,191
Capital Stage Ag	45,1	10,271	9,716
PNE Wind Ag-Reg	84,4	1,827	6,768
Energiekontor Ag	40,3	4,742	5,857
Harmonic[29] Average		3,989	7,242
Martifer		92,287	74,924

Table 57 Multiples based on Performance EV/Sales and EV/EBITDA

Source: Bloomberg

[28] Deloitte Research Report: http://www.deloitte.com/assets/Dcom-Belgium/Local%20Assets/Documents/EN/M&A%20Services/be_maservices_renewable-energy_valuing%20wind%20and%20solar%20developers%20analyse_2nd.pdf

[29] Baker and Ruback, 1999

In terms of the companies used it is important to clarify that the intention of a cluster analysis existed, nevertheless the sample of quoted companies in this business segment is very small, since both are private companies or funds that invest in alternative investments. The criteria was refined by certifying that the ones in the sample were actually in the same type of energy production, either wind or solar, or both (for instance 4 companies in the biogas sector were excluded as in terms of costs of production the operating model is completely different).

6. Taxes Treatment

The Portuguese tax regulatory system accounts for 25% as tax rate for the corporate income and 1,5% for the mayor. Additionally, for companies with a taxable income larger than 1,5 million euros, a tax from 3% to 5% over it goes to the State.[30]

In what concerns the cost of debt, it was already justified the choice of an "effective" interest rate. Considering taxes, the consistency with the first calculations was kept by using the Portuguese marginal tax rate (26,5%), but only when positive results were held by the segments. As a matter of fact the company already holds deferred taxes and as negative results seems to continue until half of the explicit period in both segments the calculations were made only for the terminal value as the value of that period would be a perpetuity. The point is that the deferred taxes the company holds by now, adding up the ones for the next periods of negative results will probably erase the possibility of having effective tax shields to value. At the end of 2012 the company held 11,4 million euros in deferred taxes to be used until 2017. Although only 45% are generated in Portugal, it will be assumed that the negative results that may or may not occur in the consolidated under the Portuguese jurisdiction will be a consequence of lower or below zero performance in the companies held abroad where there those would be also held.

Adding to the 11,4 million, in 2013 were held negative results which resulted in an additional deferred taxes of 6,52 since it was assumed all of the taxes were recognized as deferrable. This way this credit will be used until 2018, meaning that the company will not pay taxes until 2017.

7. Interest Tax Shields and Bankruptcy Costs

The computation of the interest tax shield was done separately to each segment, multiplying the amount of debt by its cost, previously defined in the topic 3 of this chapter.

The bankruptcy costs were based on Korteweg's conclusions, in 2007, about a specific probability of default per industry. Although the data is based on USA market only, it consists of a panel with monthly data on 244 publicly traded companies in 22 industries, between 1994

[30] Portuguese Corporate Tax Regime:
http://www.plmj.com/xms/files/noticias_imprensa/2013/FEVEREIRO_2013/NCB_IRC_Diario_Economico.pdf

and 2004, therefore it was assumed as being able to be used in this case. The industry scope presented is broader than the ideal. Nevertheless, it was performed a weighted average by the revenues in 2012 of builders standing for metallic constructions, and machinery for the solar segment (Appendix 19).

The maximum of leverage was assumed in order to be as conservative as possible, since from a general point of view, the company is highly leveraged. The consolidated company has a D/V ratio of 80% in 2012, the assumption was that this two segments were having the same leverage level. The costs of financial distress for the metallic constructions hold a percentage of 15,3% (being this applied to the Value levered of the segment); the solar was based on an average of machinery and utilities segment , since in terms of SIC codes those are the related sectors, yielding a 14,35% in terms of value unlevered represent the costs of financial distress.

Interest Tax Shields	
Cost of Debt	13,42%
Metallic	29,55
Solar	23,4

Costs of Financial Distress in Terms of Value Unlevered	
Metallic	15,30%
Solar	14,35%

Table 58 Costs of Financial Distress at maximum leverage

Source: The costs of financial distress across industries, A. Korteweg, 2007

$$Cost\ of\ Financial\ Distress\ (CFD) = \sum_{i=1}^{n} \frac{\%CFD_i \times Vu_i}{\left[1 + R_D + P(D)\right]^t}$$

The more generic approach in calculating this probability is based on Damodaran interest coverage ratio and. The fact is that the consolidated EBIT has been historically negative implies the usage of the forecast values of 2013 (if not the probability of default would be 100% which was not assumed). Accordingly, the probability of default attains 85% for the two segments metallic and solar, since in 2013 the interest coverage ratio falls in the 0,74 which is a C rating. Furthermore the proper discount rate was used according to the formula above.

Costs of Financial distress	V Unlevered	2013	2014	2015	2016	2017	2018	2019	2020
Metallic	95	9,412	7	6	4	3	3	2	2
Solar	447	53	40	30	23	17	13	10	7

Table 59 Costs of Financial Distress

8. Payout Ratio

It was assumed a plowback ratio of 100%, this means no money will be distributed so that the company can reinvest it since some of the segments are facing new opportunities in emerging markets for the short term. Moreover in the recent past no dividends were distributed as any positive results were produced.

9. Terminal Growth

Metallic	2018
TGR	0,945%
Reinvestment	14,26%
ROIC	6,63%

Solar	2018
TGR	3,21%
Reinvestment	32,00%
ROIC	10,20%

Table 60 Terminal Growth Rates

The approach developed in the literature review related with the ROIC or ROE stability was studied, yielding a terminal growth rate of 0,945% to Metallic Constructions and 3,2% for the Solar business. In the terminal value, the company's growth cannot exceed the growth rate of the economy the company is having activity in.

Country	2012/2014
Hungary	4,9%
Norway	4,5%
United Kingdom	3,6%
Denmark	3,5%
Slovak Republic	3,1%
Switzerland	2,1%
France	1,2%
Poland	1,0%
Sweden	0,6%
Belgium	0,3%
Italy	0,0%
Germany	-0,4%
Austria	-0,7%
Finland	-0,1%
Netherlands	-0,1%
Czech Republic	-6,0%
Ireland	-7,0%
Portugal	-13,1%
Spain	-23,5%
Average	-1,4%

Table 61 Euroconstruct estimations for 2012-2014

Source: Bloomberg

The terminal growth rate of the metallic segment is much lower not only because of the intensive investment it requires but mainly due to lower margin that yield lower returns. Dwelling in the formula of the g rate it is possible to realize that the ROIC is inferior to the unlevered cost of equity therefore the company is destroying value as time goes by. If the TGR is compared with the expectations of growth of *Euroconstruct* it is possible to realize that the growth in this industry for the mature markets will not be larger than 1%. Despite the company being tacking to diversify the geographies and produce to emerging countries, it is important to consider the efficiency in terms of revenue generation for the future (costs rising and seasonality events that require this type of projects), thus the 0,945% were adopted. Additionally the last equity report done about Martifer (with the detail of sum-of-the-parts) by Santander Global Banking & Markets, in April 2010, establishes a 1% growth for the terminal value of this segment as it can be seen in the Appendix 10.

The g rate for the solar segment is 3,2%. It was considered a reasonable value since the renewable energy segment is still a fast growing and a very young market with large opportunities to attain but looking for a more stable growth in 8 years from now.

10. Sum-of-the-parts overview

The division between the business segments of Martifer Group was already justified as a mandatory procedure to assure the accounting for the specific risk of the operations. Two different values were attained based on different methodologies: one purely based on multiples for each branch and other that used APV for metallic constructions and solar and a specific industry multiple for the "Redeveloper".

10.1. Combined Valuation: APV and Multiple

The metallic constructions and the solar businesses yielded an enterprise value based on APV and the value of the segment of renewable energy development was achieved through multiples, due to scarce specific information about it in the company reports. The holding and the innovation lab are consolidated together with the last unit referred.

The two units developed through APV required the calculation of bankruptcy costs over its value unlevered[31], therefore it was necessary to estimate the interest coverage ratio of the segments and since in 2012 the metallic construction had negative performance it was used the 2013 as it was referred in the topic 7 of this same chapter. The multiple used for the "Redeveloper" was EV/Sales based on, since it was considered the most reliable one. Additionally, it is also the median value of the multiples computed.

The net debt considered was the one presented in 2012, in total by all the company. However, an adjustment was performed since in the amount of debt considered by the holding was used to the other segments rather than just the "Redeveloper". When calculating the value of the equity of the businesses calculated through APV, it was allocated 30% of the holding's debt to each one, according to information given by the Investor Relations. The information provided was a range of about 50% to 70% of the debt of the holding being used in the main segments of activity, a percentage in the middle was adopted since the company's holding financing the other segments could not be ignored.

Method	SOTP	V Unlevered	ITS	CFD	EV	Net Debt+MinInt	Equity Value
APV	Metallic	89,03	29,5	33,86	67,86	290,55	65,96
APV	Solar	452,97	23,45	196,07	288,66		
Multiple	Redev	92,29	-	-	92,29	86,50	5,79
	Total				448,80	377,05	71,75
						Price/share (€)	0,734

Table 62 SOTP APV-based valuation (in million euros)

In terms of comparison of the price with the final today's stock price (€ 0,56), it has a small difference, representing 30% of upside value. Nonetheless, if analyzed in a larger time frame, within 2012 the price was at that level. The fact the Portuguese stock market is facing negative performance due to the overall situation obviously creates more turmoil and it blurs the market towards the understanding of the growth opportunities of the company.

[31] Enterprise Value$=V_u+[1\text{-}P(D)]\times PVTS\text{-}P(D)\times CFD$

10.2. Relative Valuation Only

10.2.1. Metallic Constructions

Company Name	EV/EBITDA	EV/Sales
Zhejiang Southeast Space Frame Co., Ltd.	24,55	1,4
Severfield-Rowen plc	8,35	0,46
KOMAIHALTEC Inc	10,30	0,35
Eversendai Corporation Bhd	5,78	1,00
Yongnam Holdings Limited	6,83	1,36
Harmonic Average[32]	11,76	0,91
Martifer Metallic Constructions	122,22	228,77

Table 63 Multiples of Metallic Constructions Industry

Source: Bloomberg

The relative valuation of this segment was performed based on the same peer group as for the Beta Regression. The fact the companies included are a very small sample and based only on strategic similarity criteria in terms of operations and strategy reveals less reliability of those. Within the two multiples possible to apply in terms of performance and having enterprise value as output, the one closer to the value estimated based on APV is the EV/EBITDA.

10.2.2. Solar

Company Name	EV/Sales	EV/Sales 2013e
Conergy AG	0,33	0,384
Solar Fabrik AG Fuer Produktion Vertrieb	0,71	0,962
aleo solar AG	0,57	0,732
Phoenix Solar AG	0,25	0,281
Centrosolar Group AG	0,45	0,551
Sunways AG	0,27	0,306
Solon SE	0,69	0,928
Harmonic Average[33]	0,467	0,592
Martifer Solar	107,817	144,11

Table 64 Solar Projects Developers

Source: Bloomberg

The fact the solar companies that are true comparables of Martifer Solar are older, generate a certain bias. Those older firms were heavily impacted by the financial crisis, therefore getting problems in funding their projects. As a consequence, a recent negative performance in terms of EBITDA arisen, with the multiple that relates that item with the enterprise value meaningless. This way it was used the EV/Sales as reliable solution. However, the value for the company is lower than the one estimated by APV. Additionally to the trailing multiple, a

[32] Baker and Ruback, 1999
[33] Baker and Ruback, 1999

forward one was computed based on sales of the next year. Although getting a higher value it is still less than one third of the APV's enterprise value.

10.2.3. Overview

Million euros	EV/EBITDA		EV/Sales
Metallic	122,22		228,77
Solar	144,11		144,11
Redeveloper	74,92 / 150,45[34]		92,3
Net Debt	377,00		
Equity Value	-35,75	39,78	90,80
€/per share	Na	0,407	0,924

Table 65 Multiples Valuation

Source: Bloomberg

The relative valuation was performed so that a comparison with the market is also included in this analysis. The consistency among the multiples used was limited by the particularities of the business segments. First of all, the group does not have an equity price for each business segment (as it is not separately quoted, only as a whole) therefore the multiples used were all based on enterprise value. Furthermore, in the case of the solar segment most of the companies are presenting negative EBITDA historically therefore in the column of the EV/EBITDA the value for the solar is the same as in EV/Sales as a "substitute" to get a company value. Additionally, the "Redeveloper"'s EBITDA, accounts for the holding performance (which is only a center of costs) reducing reliability to its value in terms of representativeness of the segment operational efficiency, so that the EV/Sales is more likely to attain an accurate value.

Comparing the APV values with those is also interesting in the sense that the multiples are based in the present of the industry and it is very much understandable by the difference between the growth opportunities that the APV expects for the solar segment: €320 million from APV versus €144 from EV/Sales. On the other hand, the metallic constructions segment estimation has a higher value through the multiple than in the discounted cash flow methodology.

11. Equity Research: Comparison

Firm Name	Analyst	Recommendation	Target Price
Caixa Banco de Investimento (ESN)	Jose Mota Freitas	Suspended coverage	na
BPI	Flora Trindade	Reduce	1,10
BCP Investimento	Antonio Seladas	Under Review	na

Table 66 Martifer Analyst Consensus

Source: Bloomberg

Since 2010, a reducing number of equity researches are being published by the firms that used to cover the Martifer stock price. Hence, no comparison was possible to be done, in spite of

[34] Calculated with EV/Installed MW multiple.

BPI last coverage in the end of 2011. The reliability of the price is questionable due to the inexistence of updates since then.

12. Sensitivity Analysis

In the APV model, the analysis of the impact of the variables becomes interesting not only in terms of terminal growth rate and the cost of equity, but also from an adjustment point of view since the cost of debt and the costs of financial distress are structural variables of the valuation. Consequently, it was computed the sensitivity for each business segment considering changes in the cost of equity and terminal growth rate (assuming constant tax shields and cost of financial distress); and the impact of changes in the items indexed to the interest tax shields and costs of financial distress assuming stability in the value unlevered.

No sensitivity analysis was performed for the "Redeveloper" segment since it was valuated only with multiples, not only performance-based ones but also industry specific (MW installed).

12.1. Metallic Constructions

	Cost of Equity				
In %	6,54%	7,14%	**7,64%**	8,14%	8,64%
0,0%	73,08	64,11	56,42	49,77	43,97
0,4%	80,22	70,03	61,40	54,00	47,60
TGR **0,9%**	89,70	77,80	**67,86**	59,43	52,21
1,4%	101,20	87,06	75,44	65,74	57,52
1,9%	115,44	98,29	84,49	73,15	63,68

	Cost of Debt				
In %	12,4%	12,9%	**13,4%**	13,9%	14,4%
10,8%	70,65	70,77	70,89	71,02	71,15
11,8%	69,06	69,20	69,33	69,48	69,62
CFD **12,8%**	69,06	69,21	**67,86**	67,01	66,17
13,8%	66,29	64,95	65,13	65,30	65,48
14,8%	63,51	63,68	63,86	64,05	64,24

Table 67 Martifer Metallic Constructions Enterprise Value Sensitivity Analysis

Considering metallic constructions segment, the enterprise value varies significantly with changes in the cost of equity rather than in the financing adjustments as CFD and cost of debt, since the variance is obviously smaller in the former referred. Additionally it is interesting to dig in the possibility of the segment undertake in a 0% terminal growth rate based on a non-growth situation for the terminal value. It represents the fact the company with the free cash flow generated in the last year of the explicit period, under the cost of equity of 6,14% still

creates a larger enterprise value than in the situation that was actually computed for the valuation.

12.2. Solar

		Cost of Equity				
	In %	5,50%	6,00%	**6,50%**	7,00%	7,50%
	2,2%	311,82	208,55	138,12	87,10	48,48
	2,7%	461,80	300,07	199,28	130,53	80,72
TGR	**3,2%**	740,41	446,53	**288,66**	190,26	123,15
	3,7%	1.437,41	718,61	431,70	277,57	181,50
	4,2%	6.334,66	1.399,25	697,42	417,28	266,78

		Cost of Debt				
	In %	12,4%	12,9%	**13,4%**	13,9%	14,4%
	13,6%	291,50	293,43	295,32	297,17	298,99
	14,6%	287,96	289,92	291,83	293,71	295,55
CFD	**15,6%**	284,51	286,49	**288,66**	290,33	292,20
	16,6%	281,15	283,15	285,11	287,04	288,92
	17,6%	277,88	279,90	281,88	283,83	285,73

Table 68 Martifer Solar Enterprise Value Sensitivity Analysis

The solar segment sensitivity analysis was computed within the same moving variables, however with different values for the cost of equity, terminal growth rate and cost of financial distress since it was based on the specific industry. Again, the impact of a lower or higher unlevered cost of equity or in the terminal growth rate is increasingly higher than in the tax shields or costs of financial distress. As a matter of fact, the most impactful variable is the terminal growth rate as 1p.p. would create an enterprise value more than three times larger the base case.

MERGED VALUATION

A. VALUATION WITHOUT THE SYNERGIES

1. Methodology

Martifer was valuated through APV model due to the fact the company has different industry activities. Therefore, the division of the segments did not allow performing a reliable debt allocation in percentage of the market value of the business segment (as it is required for the WACC D/V ratio). On the other hand, EDP R was firstly valued based on WACC methodology, although the segments are differently located, the activity is the same across region, then it was assumed the same leverage ratio as of today because of the alignment with the industry average. The merger requires consistency across the methodologies used, thus the APV of EDP R was computed.

1.1. EDP R APV valuation

In order to compute the value of the merged entity, the approach chosen was APV due to the possibility of easily assume a debt amount in euros for EDP R, according to the balance sheet of the forecasted (and a defined plan of future investment), and then consider the tax shields weighted by the installed capacity since the tax rates vary across the regions.

The discount rate used for the APV of EDP R took into account the differences between each business segment. It is an unlevered cost of equity based on the beta of a peer group computed before. However, the differences lay on the country default risk computed under the reasoning of the imputed risk premium of Professor Damodaran (2011).

Cost of Capital Assumptions	North America	Europe	Brazil
Market Risk Premium	5%	5%	5%
Beta Unlevered	0,627	0,627	0,627
Rf	1,75%	1,42%	3,90%
Default Spread for Region	0,00%	2,61%	2,63%
% of Equity @ Market Value	23%	0%	0%
Tax Equity Investor Return	9%	0%	0%
Unlevered Re	**7,24%**	**7,57%**	**10,06%**
Financial Debt (€M, 2012)		3.874	
Pre-tax Cost of Debt	**7,10%**	**6,90%**	**9,05%**
After-tax Cost of Debt	4,42%	4,83%	5,97%
Marginal Tax Rate	37,7%	30,0%	34,0%

Table 69 Unlevered Cost of Equity per Geographic Operations (in %, except Financial Debt)

The free cash flows computed were performed separately (as in the WACC DCF Valuation) consequently yielding an unlevered value per region. However, due to the fact the debt is a concept that EDP R does not disclosure in terms of financing the activities of each region (actually some are project finance and others are internally financed – but the separation is not publicly released) the inters tax shields were computed as an overall value of the company based on an weighted average of the tax rates (EBITDA of each region in 2012 as a division factor). Furthermore, the bankruptcy costs are two-step based in terms of assumptions: the costs of financial distress in percentage of unlevered value were extrapolated from Kortweg (2007), and it is 16,8% for the utilities segment; and the probability of default

that is based on Interest Coverage Ratio of EDP R that gives a 36,8% rate since the ratio in 2012 was of 2,2.

In comparison with the value of the WACC-based valuation, the differences are very small, as it yielded a €5,14/per share. Digging in, it is possible to realize the differences between the valuations of each business segment, and understand that the WACC generates lower values for all the segments, apart from the USA, probably because the WACC discount rate of that region becomes smaller due to a higher tax rate than the others, implying a lower cost of debt.

Value (in million euros)	APV	WACC
V Unlevered Europe	6.038,00	5.942,54[a]
V Unlevered USA	2.083,75	1.967,94 [a]
V Unlevered Brazil	298,30	281,17 [a]
Total V Unlevered	**8.420,05**	
Tax Shields (w/out P(D))	1.332,50	
Bankruptcy Costs(wi/out P(D))	2.994,62	
Enterprise Value	**8.160,18**	**8.191,65**
Net Debt	3.355,00	3.355,00
Minority Interests	325,00	325,00
Equity Value	**4.480,18**	**4.511,65**
Price Per Share	5,14	5,17

Table 70 Comparison APV and WACC EDP R Valuation (a: value per segment)

2. Valuation

The computation of the company merged without considering the positive impact of joining forces is, in theory, the simple sum up of their values. In terms of financial statements (Appendix 10), the combination of them is done line by line in the sense that although not exactly the same – and a broader overview creates potential for misunderstandings. However, the possibility of transaction within the companies could be an issue since them, if existing, should be eliminated, as it would be internally generated in the supposedly joint company. As a matter of fact, this information is not public thus it was considered that the possibility was ignored (Damodaran, 2005a).

Company	Segment	V Unlevered	ITS	CFD	EV	Net Debt + Min Int	Equity Value
EDP R	Europe	6.038,00					
	USA	2.083,75	1.332,50	2.994,62	8.160,18	3.680,00	4.480,18
	Brazil	298,30					
Martifer	MetalC	89,03	29,55	33,86	67,86	290,55	65,96
	Solar	452,97	23,45	196,07	288,66		
	Redev	92,29	-	-	92,29	86,50	5,79
Total							4.551,93

Table 71 Merged without the synergies

The logic of the sum-of-the-parts was the same methodology in the standalone valuations; therefore the performance of the sum-of-the-parts was kept when valuing the company as a unique corporation. The price per share was obviously not possible to attain since it has not been defined the number of shares. The sum up of the businesses through APV and a multiple for the Redeveloper business of Martifer yielded exactly the same amount as summing up directly the companies' equity values as it was expected.

It is important to underline that however a valuation should return a range of values rather than a specific number of the perspective about the company, when in an M&A campus it becomes crucial to define the target and actually value the positive outcome out of it. Thus, the values that were taken as reference were the ones from APV, in table 71.

B. SYNERGIES VALUATION

The benefit of blending two companies operations is one of the final steps missing in this thesis. The expectations in terms of the deal positive impact lay on two types of transactions' motivations: the vertical integration and consolidation of activities (Keller, 2011; Ghauri and Buckley, 2003). On one hand, the first is possible due to the industrial character of Martifer that can produce turbines' components to EDP R wind parks; the optimization of overlapping activities since EDP R has 7 GW of installed capacity (3rd largest player worldwide) being aware of the best practices in the management of wind parks, segment which Martifer also holds investments. Additionally, the expertise of Martifer in developing solar energy projects and managing them can optimize the existing one in Romania and the future installations in this type of industry. Hence, the diversification that EDP R already intends to will be emphasized by Martifer solar segment.

1. Methodology

The marginal value added by the merger of the companies will be valued through the sum-of-the-parts (of the 6 divisions presented in the section before) with the improvements possible due to the transaction.

The structure of the synergies analysis will be performed separately as for instance in a diverse type of synergies are expected. Hence, it is interesting to see the impact on each one in both valuations. In a nutshell, the expectations for synergies fall into cost and revenue type; financial and integration costs are also expected.

2. Value of Control and Synergies' Assessment

Control premia (or value of control) represent the improvement in managing the company that any owner can make when taking control of a company. It is considered a three step process, similar to the one developed with the synergies: a status quo valuation, a restructured one with the improvements to be performed by the acquiring company and the difference will be the value of control. However, it has nothing to do with the synergies' value. The synergy requires an effective partnership between two elements rather than control. The former has to do only with the acquired entity.

In the specific case under consideration, there is not enough information to consider the existence of value of control. As a matter of fact, for instance, Martifer is highly leverage but it was demanded by the impairment losses presented in the last years and lack of operational efficiency in the main segments. Additionally, since 2011, a complete plan of restructure of strategy and management was performed. It is being executed and some of the objectives were already attained. Thus, it was assumed that the company is being run at the best level. On the other hand, the business segment that is shrinking value and could be sold is going to be revitalized by EDP R to proceed with the vertical integration.

Professor Damodaran develops on this paper focused in the value of control several ways of increasing value purely through control: improved asset management, debt and cash administration. However, it was not considered to be changeable. Therefore, the assumption is that control may hold value but there is not enough information to correctly develop on this.

3. Synergies Analysis

Even though the consolidation of any business segment represents the increase of bargaining power, the small dimension of the target proportionally to the buyer establishes low expectations from that side. As far as it is concerned, synergies shall be more impactful for the target than the other way around, since the back-up of such a large company tackles uncertainties over Martifer default possibility, for example.

Despite the existence of optimization opportunities in Martifer, the company is undervalued by the market considering its present condition. Also, the joint company means diversification and integration of activities proving the positive impact of the transaction that is being assessed.

The valuation of the synergies should not be confused with the concept of value of control, which is other widely cited reason for the execution of an acquisition. The value of control is the incremental value that an acquirer believes can create by running a target firm more efficiently, and not the value-added of merging activities.

It is important to stress the fact that the synergies are based on estimations and scenarios of integration. Therefore, the value of the analysis is subject to a group of events that affect the potential of the transaction. A sensitivity analysis was wondered, although the lack of notion in terms of the advent or not of certain variables reduces interpretation value. For example, a 50% probability was assumed, but no justification exists to reduce it to 40% or increase to 60%, it was just the halfway in a decision tree of 100% of probability of occurrence with 0%.

3.1. Cost and Revenue Synergies

According to financial literature synergies based on costs are more credible, since they are limited to their value. The discount rate of those will be computed as the same as the free cash flow of each business segment since it represents an improvement of its final value.

3.1.1. Turbines' Components Internal Production

Martifer back in 2010 had a specific segment for energy systems. The partnership with a German company (Repower AG Systems) came to an end that year through the sale of the percentage of the joint venture to the foreign company, representing the closure of what was the REpower Portugal. Even though Martifer no longer owns the company, the factory is still in Portugal producing, owned by the German firm. Although in a very residual manner, Martifer also keeps producing parts of the windmills. This market presents a heavily consolidated structure (worldwide, the top 10 players represent more than 90% of the market

share – Graph 9) therefore the presence of Martifer is not competitive enough. Besides, the sale of the stake made sense in financial terms to face the challenges of a decreasing share price and hazy economic environment.

Even so, the know-how and the machinery are assets that still keep in Martifer's structure. Nowadays, the company has the capacity of producing 350 canopies and 400 towers per year in the Portuguese factory that is working in Oliveira de Frades.

Company	EBITDA margin (2012)
Vestas Wind Systems	6,50%
Gamesa Corp Tecnologica	10,20%
China Ming Yang Wind Power Gro	8,60%
Guodian Technologic & Enviromnt	11,20%
Huayi Electric Co Ltd	7,30%
Nordex SE	2,10%
Sinovel Wind Group Co	4,40%
Suzlon Energy Ltd	9,00%
Xiangtan Electric Manufacturing	7,90%
Xinjiang Goldwind Science	5,60%
Average	7,28%

Table 72 EBITDA Margin 2012 in Wind Components Producers

Source: Bloomberg

On the **other** hand, EDP R employs a diversified group of suppliers for the turbines (constituted by nine). The type of relationship held is on year-based contracts therefore the impact of a merger would take one year to start the effect. In addition, to the installed capacity and the reliability (or not) of Martifer limiting the possibility of being a larger supplier of turbines, it will only produce components of the structure not the complete one. The tower accounts for 18,3% of the total cost and the nacelle cover (canopy) to 3,6%. Due to the divesture in this segment of activity, a factory in Portugal (located in Benavente) and another in Poland are closed; the Romanian one is at 25% of its capacity. According to information provided by the Investor Relations, the capacity of the three factories are divided in 576 towers and 576 nacelles, in each of the Portuguese and Poland and 20% less in Romania (since the factory is smaller). Despite the plants are or were shared with the metallic constructions activity, the fact it is slack capacity creates no opportunity costs in terms of production[35]. The EBITDA margin of the average of the industry in the windmills production is 7,3% (considering the top 10 players referred in the industry analysis – Table 73).

in MW	Slack Capacity
Poland	576
Portugal	576
Romania (75%)	360
Total MW	936

Table 73 Capacity of the Factories in the Metallic Constructions Segment

Source: Martifer Website

Regarding the installed capacity in the investment plan, only the Romanian factory (with 75% of slack capacity) and the Polish one will be recovered (as Poland is more competitive in terms of costs and closer to the location of some of the future investments of EDP R, the Portuguese is going to

[35] Although it would if the demand for pure metallic constructions increase, since the EBITDA margin assumed to achieve as time goes by is of 8% in the metallic constructions segment – and the average of windmills industry is 7,3%.

kept closed). The impact is a decrease in the capital expenditure of EDP R (in value) and an increase in the revenues of Martifer that will be using the former's slack capacity. As a result, the assets that are in the balance sheet of Martifer as held for sale (account for the factories in Poland and Portugal) will no longer be there. Costs for the reactivation of those will also be accounted for.

As a matter, of fact, a conservative assumption was taken of only 50% of EDP R new installed capacity in MW was going to have Martifer components. The suppliers may not accept to send the turbine without the tower or the nacelle, although they are components integrated in the final stage of production.

Value (in million euros)	APV	Synergy Impact
VUnlev Europe	6.053,83	15,83
VUnlev USA	2.100,13	16,38
VUnlev Brazil	301,56	3,26
Total V Unlevered	**8.455,52**	**35,47**
Tax Shields	1.337,24	4,74
Bankruptcy Costs	3.007,23	12,61
Enterprise Value	**8.194,00**	**33,82**
Net Debt	3.355,00	-
Minority Interests	325,00	-
Equity Value	**4.514,00**	**33,82**
Price Per Share	5,17	0,04

Table 74 Breakdown of EDP R's synergy impact

To actually measure the impact of the added capacity, firstly, it is essential to understand each turbine's impact. It represents 2,4 MW on average (of course there are windmills with lower or greater energy production capacity, but the most recently installed own this characteristic). Assuming that Martifer capacity production of components will be used for EDP R as a warranty of business for next years: 18,3% + 3,6%, 21,9% in total, of the cost of a turbine is covered "internally". The EBITDA margin of this business will be initially assumed as 5% (as Martifer does not hold the best practices of the main players a lower rate than the average was assumed). The learning curve of this EBITDA margin until 2020 will meet the industry average converting into decrease in Capital Expenditure by EDP R due to lower expenses. In order not to double count this it will be assumed that Martifer will sell the components at a price so that it gets 50% of the EBITDA margin assumed. EDP R will decrease its capital expenditures by half of the EBITDA margin assumed in half of the new parks. The former benefit impacts as a decrease in the Capital Expenditures of EDP R (See table 75).

EDP R Capital Expenditure	2013	2014	2015	2016	2017	2018	2019	2020
Installed Turbines with Martifer Components	-	185,1	294,9	301,1	98,8	86,3	84,5	84,5
Price/MW (in million euros)	-	1,365	1,385	1,406	1,429	1,454	1,478	1,503
Martifer EBITDA Margin Improvements	-	5,0%	5,3%	5,7%	6,0%	6,4%	6,8%	7,3%
Saving for EDP R (in million euros)	-	1,4	2,4	2,6	0,9	0,9	0,9	1,0
Impact per MW (in million euros)	-	0,007	0,008	0,009	0,009	0,010	0,011	0,012

Table 75 Synergy impact

A new business segment was created, to be then integrated in the Metallic Constructions (as energy systems are already there). The depreciations of this segment were based on the assumptions of the metallic constructions segment (machinery is depreciated at 20% rate), as

well as its Capital Expenditure that was assumed to be 10% larger than the depreciations, and in the maturity they will be equal (Appendix 13).

Considering the costs of reactivating the factory it was assumed 1 million euros, in 2014, expense based on the fact there is no team in Poland by now, and some maintenance issues may exist. Nevertheless, the price/MW assumed was the same offered by the top companies; therefore it should be enough to cover the costs.

The total impact of this synergy is reflected in EDP R's and Martifer's firm values. For Martifer, the valuation of the Metallic Constructions is positively increased by 32,5 million euros since part of the company's slack capacity is recovered. As a matter of fact, the approach was quite conservative as the company can start producing to other clients the same components. Nevertheless, it was not considered since there is no market perspective of the extent and potential of more companies interested. EDP R's valuation is amplified on the three regions, in almost 34 million euros. The fact the company is investing heavily generates this great effect by achieving better prices for the components of the turbines.

Company	Segment	Value Unlevered	ITS	CFD	EV	Net Debt + Min Int	Equity Value	Synergy Impact
EDP R	Europe	6.053,83						
	USA	2.100,13	1.335,48	3.002,55	8.194,00	3.680,00	4.514,00	33,82
	Brazil	299,93						
Martifer	MetalC	135,40	30,49	51,49	100,30	290,55	98,41	32,45
	Solar	452,97	23,45	196,07	288,66			
	Redev		*(multiple based)		92,29	86,50	5,79	-
Total							4.618,19	66,27

Table 76 Consolidated Synergy Impact

The differences among the values are mainly justified by the different cost of capital discounting the cash flow as well as the assumptions related with the interest tax shields and costs of financial distress, since the gross benefit should be equivalent (by equally sharing the percentage of EBITDA margin).

3.1.1.1. Contingent valuation of Turbines' Components Internal Production

Valuing flexibility through a specific model where a more complex analysis about the future is taken reveals its value added – although it is not directly comparable to the previous valuation. The approach chosen is the decision tree analysis as it perceived as more transparent to managers, at the same time it fits better by the inexistence of a consistent value for the variance of the cash flows. The valuation of a flexible cash-flow based project was developed in the literature review, centered on Luehrman (1997) and Koller et al (2005).

When forecasting the impact of the development of a new business segment, a probability of 50% conversion of the suppliers of EDP R, by accepting a partial participation of Martifer,

was assumed. However, it could be studied the impact of a more intricate situation. For example, a sensitivity overview of the synergy based on different scenarios could be performed. On the other hand, the possibility of expanding activities as well as the need of the opening of the factory in Portugal, increasing the average cost initially, is also a prospect.

The fact the probability of the suppliers accepting or not is completely undisclosed by the market (no public information in terms of other deals of the same sort or the suppliers of the wind towers producers), the development of the valuation would be purely academic and useless as no quality figures would be added, neither it would be comparable to the previous valuation. For the record, the type of estimation performed was basically a decision tree analysis where the initial investment of reactivating the factory was discounted at the risk free and the estimation of the cash flows were based on the limitations of the information available, respecting the capacity of the assets (with a 50% probability already justified).

3.1.2. Martifer Solar Turnkey Project

The type of knowledge and expertise that Martifer holds may create a positive effect in the solar park in Romania, and all the other that EDP R is willing to invest in. The measurement will be in terms of EBITDA margin again, as certain costs are possible to improve, increasing the efficiency. The Investor Relations of Martifer allowed the access to some internal data in Appendix 12 related with the margin efficiency of the solar parks that Martifer operates of 91,1% (improvement from 74% EBITDA margin).

Value (in million euros)	APV	Synergy Impact
Vu Europe	6.042,59	4,58
Vu USA	2.086,04	-
Vu Brazil	298,30	-
Total V Unlevered	**8.424,64**	**4,58**
Tax Shields	1.333,11	0,61
Bankruptcy Costs	2.996,25	1,63
Enterprise Value	**8.164,55**	**4,37**
Net Debt	3.355,00	-
Minority Interests	325,00	-
Equity Value	**4.484,55**	**4,37**

Table 77 EDP R Standalone impact

Apart from this, in terms of CapEx it is also predictable a slightly decrease for the costs of the project (not the one that already started since the contract is signed)[36]. Martifer Solar is one of the top players in turnkey projects for the solar segment, therefore synergies shall be produced. However, as no specific solar investments are planned (neither location nor amount) this possibility was not considered. The potential strategic gain was not ignored, although the value of the synergy is not tangible by now. EDP R has clear intentions of keep investing in the solar segment due to the fast decrease in CapEx/MW, and the expectations of the renewable energy breakdown until 2020 is for this energy holding 17% of the installed capacity worldwide. In fact, the announcement of the investment in Romania already comprises a sign of bringing forward the execution of this strategic decision that was planned to 2014/2015.

[36] When considering the synergy of the previous topic (related with investment costs) this specific solar unit in Romania was not included, since it is a different type of renewable energy.

Albeit the operational impact is in the value unlevered of the European unit, the tax shields and bankruptcy costs vary, decreasing the positive effect of 4,56 million euros to 4,34 million euros.

3.1.3. Martifer Wind Parks

The Martifer Wind Parks were evaluated through multiples. Despite the existing information about revenues and EBITDA margin of the segment it is inexistent the level of Capital Expenditures, Depreciations, or breakdown of the business in terms of fees from managing parks or electricity sale. Therefore, in order to assess the improvement in terms of the best practices that EDP R possesses it was considered that the EBITDA margin of 58% would grow to the average of the EBITDA margins of the wind parks of EDP R in the same location (Portugal: 81%; Brazil: 67% and Romania: 87%), achieving a 78% on a weighted average based on MW per country. To this percentage was then performed an average with the previous margin saying that in the first year of merged activity it will only achieve half of the improvements (68% of EBITDA margin for this unit of Martifer in 2013). The fact the breakdown of the activities in this unit was ignored due to non-disclosure of the firm requires a more conservative approach since the service-mix reduces the margin attainable (as the owner of the park does not give the entire margin to the manager). Hence, the approach in terms of the forward multiple EV/EBITDA (2013E) forecast-based, provided an increase to 93,9 million euros in the enterprise value. The 92,29 million euros was computed based on the same multiple in the non-merged case.

Company	EV/EBITDA 2013E
Etrion Corp	9,64
Abo Invest Ag	7,43
Capital Stage Ag	10,45
PNE Wind Ag-Reg	5,41
Energiekontor Ag	7,32
Harmonic Average	8,05
EBITDA 2013	11,66
Martifer	93,93
Variation from €92,3 M	+1,64

Table 78 Impact in Martifer's Valuation
Source: Bloomberg

Concluding, the estimations in terms of improvements were superficial due to the lack of information about the performance of each park, a weighted average was computed. Therefore the synergy will be of 1,64 million euros in this unit segment.

3.1.4. Other Operating Expenses

Although the companies actually develop business in overlapping locations it could not be assumed a straight cut on it due to the dissimilarities in the activities. Considering staff related costs, the number of employees and directors (that in Martifer are 30 and EDP R with 68 as Senior Offices) were not reduced in the attempt of not harmful the relationship through the execution of the acquisition. As a result, no synergies were predicted under this area.

3.2. Financial Synergies

The combination of the activity of two firms should create opportunities in terms of management of cash flow and taxes optimization. It is not always evident how to predict the impact therefore a careful analysis was performed in terms of the input changing. Moreover,

synergy and value of control differences were stressed. For instance, a better capital structure is not a synergy if a result of better management; it is then *value of control* (Damodaran, 2005c). As a matter of fact, the extent of this specific possibility is not known.

In terms of tax deductions, all of them are being exerted by Martifer within their useful life. The increase in debt capacity is not considered, as EDP R is already aligned with the industry and Martifer is looking for a capital structure improvement on the other way, by reducing the leverage ratio.

3.2.1. Debt Repayment

Generally, the optimization of the level of cash is a possibility, although the increase in the turnover level demanded high levels of cash for both companies in the explicit period. In a merged entity the unexpected events are less likely to occur (or at least less detrimental) so that the possibility of paying back debt and/or distribute dividends rises. The consolidated company would hold a level of debt of 4 billion euros, where 90% are EDP R's. On the opposite, the level of leverage of Martifer standalone is approximately 80%, comparing with 51% of EDP R hence the optimization of the Martifer level of debt is a current preoccupation but not related with the merger. In fact, the merged company will have a capital structure with a D/V ratio of 52% in the merged company[37].

In terms of cash management, it was assumed that the merger has no impact, apart from a healthier capital structure that implies value creation by reducing interests paid, and therefore lowers tax shields. The decreasing of the probability of default would also impact the valuation of the business segments of Martifer. Naturally for EDP R no changes were performed since the dimension of Martifer would have no impact in terms of the riskiness of the company (additionally the parent company of EDP R is a considerable strength). Later in this topic, it will be discussed the impact of improving the rating of Martifer.

3.2.2. Rating Implications

It is reasonable to assume that the fact companies are under the same umbrella (EDP as a parent company) generates a lower probability of default, as it is, in a consolidated panorama.

Probing the study of this possibility, it was concluded that the specific rating of the company within a group must be reflected in its valuation. Nonetheless, the small size of Martifer creates a reduced influence in the overall structure. As a matter of fact the company's rating has a circular effect with the cost of debt, in the sense that it was estimated based on the synthetic rating of Martifer, which is then implying a certain amount of interests paid. Hence, the

[37] This ratio keeps approximately the same either with or without the synergies computed. Assuming that the transaction is performed through cash.

approach was that Martifer's rating will be improved in a conservative manner, and not a drastic climbing towards EDP R rating, as it would not be realistic.

As stated before, Martifer's synthetic risk classification achieves a D level, which implies a 12% spread in the cost of debt (however, for the probability of default, it was assumed the C level of 85% - already explained in the topic of the standalone valuation). Conversely, EDP R's rating is B+, which represents a spread of 5% for the cost of debt.

EDP R	2010	2011	2012	2013E	2014E	2015E		2018E	2019E	2020E
Financial Debt	3.534,00	3.826,00	3.874,00	4.024,96	4.181,80	4.344,76		4.872,72	5.062,60	5.259,87
Interest Paid	166,90	189,50	205,00	251,55	281,00	282,51		287,09	288,64	290,19
EBIT	289,90	347,50	450,10	616,50	682,89	820,26		1.230,64	1.328,00	1.320,09
Int. Cov. Ratio (ICR)	2,95	1,98	2,25	2,45	2,43	2,90		4,29	4,60	4,55
Martifer	**2010**	**2011**	**2012**	**2013E**	**2014E**	**2015E**		**2018E**	**2019E**	**2020E**
Financial Debt	420,07	407,76	414,69	445,41	408,99	407,93		474,42	505,80	520,21
Interest Paid	42,12	24,47	27,47	44,79	51,41	51,28		59,64	63,58	65,39
EBIT	-21,00	-19,45	-15,76	23,13	30,86	37,26		69,49	75,97	81,89
Int. Cov. Ratio (ICR)	-0,50	-0,79	-0,57	0,52	0,60	0,73		1,17	1,19	1,25
Weighted ICR[38]	2,58	1,71	1,98	2,26	2,27	2,72		4,01	4,29	4,25
Consolidated ICR[39]	1,35	1,39	1,79	2,00	2,00	2,40		3,52	3,75	3,69

Table 79 Consolidated Interest Coverage Ratio (Complete table in Appendix 16)

The recalculation of the interest coverage ratio of the combined company generates a level of B, meaning a downgrade for EDP R. Consequently, the default spread to be assumed would be 6,5% to the whole company.

As far as it is concerned, EDP R is secured by EDP Group, therefore the impact of buying a small company like Martifer should not be so substantial as a downgrade (in fact the effective interest rate of EDP R is 5,4% due to internal financing with the parent company); on the other side, Martifer should not feel such an improvement (as a decrease in the default spread from 12% to 6,5%) in its rating since the level of leverage is high (80%) . Hence, the assumption, from a realistic point of view, was to improve Martifer's rating by one level due to the EDP R's control. Thus, the cost of debt decreases by 2 p.p. and the probability of default to 70%.

3.2.3. Discount Rate

The specific operating risk and geographic location is stressed by different discount rates for each business segment. In terms of market risk premium, in both companies, it was assumed a

[38] The interest coverage ratio was calculated separately for each company, weighted by financial debt.
[39] The consolidated IRC was performed as the company was completely merged, although the operational synergeis were not computed so that a conservative perspective was kept for the rating. If considering the synergies the rating will be improved by increased EBIT.

5%[40] rate as it fits the range recommended by the literature review in the issue. No changes were performed in this parameter, since the sum-of-the-parts methodology was kept.

In the specific case of the cost of debt, no changes should be incorporated in the way Martifer is being financed. If EDP R starts financing Martifer it would mean that this improvement was being paid by the acquirer's shareholders (Damodaran, 2005b). The higher value of the firm (increased by a lower cost of debt) would result in a transfer of wealth from the acquiring firm's stockholders, in the case EDP R's, to the Martifer's ones – which is not a synergy, if the lower financing was provided by the buyer. Nonetheless, the cost of debt was computed based on a synthetic rating. Thus, the former is going to be improved, based on an increase of Martifer's negotiation power towards Banks and EDP R's strategic control value, as it was discussed in the previous topic.

3.3. Integration and Transaction Costs

Albeit the positive impact in a merger is an intuitive thought, there are costs of implementing the combination of two firms that cannot be unnoticed.

The integration costs were accounted for case by case, when studying the synergy itself. Additionally, the synergies were mostly based on EBITDA margin improvements or the creation of a business segment that would provide a capital expenditure decrease, whereas the conservative approach undertaken was already covering the costs of integrating the businesses.
The transaction itself requires the involvement of experts such as investment bankers, lawyers and accountants – certain deals require the existence of a Chief Executive for the Merger, but in this case it was disregarded due to the small dimension of Martifer. As it was developed in the Literature Review, there is no right answer for the definition of transaction costs; therefore it was found reasonable the assumption of 5% of the transaction value corresponding to the item. The proxy was based on fees of the professionals previously referred that are commonly rising to this percentage amount. The attainable synergies and Martifer's firm value are then the independent variables of this function. Also, if the transaction is performed in cash, a lot of taxes must be paid. Secondly, the costs of turning operational the cost synergies were already justified and accounted for in the previous topic.

[40] Additionally according to the survey performed by Bruner, Eades, Harris and Higgins (1998) 48% of the corporations when valuating use a fixed rate from 4% to 6%. Hence, the rate assumed was kept in the 4,5%.

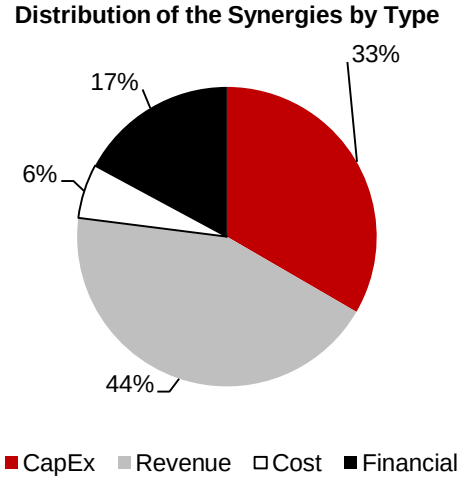
C. VALUATION WITH THE SYNERGIES

A generic overview permits to conclude that as the activities of the business segments of the target and acquirer are different, the impact is differently distributed across segments. The synergies, by being over an acquisition of a portfolio company, reveal that support structures and overlapping activities that could actually be merging are not being undertaken due to the existence of a possible downgrade in terms of performance.

The synergies provided by the vertical integration represent almost 80% of the total expected for this acquisition. In fact, it is interesting to understand the potential of slack capacity of this company. Martifer has not being able to position properly in the segment of the energy systems. The opportunity if acquired by EDP R becomes even more interesting because of the inexistence of opportunity costs. The enhancements considered in the solar and wind parks' segment account for the majority of the reminiscent synergies, based in the reasoning of consolidation and economies of scale. From a geographic point of view, it is in Europe assets that the synergies will be more impactful.

Value (in million euros)	APV	Synergy Impact
Vu Europe	6.056,12	20,41
Vu USA	2.102,42	16,38
Vu Brazil	301,56	3,26
Vu Metallic Constructions	135,40	46,36
Vu Solar	452,97	-
Vu Redeveloper	92,29	1,64
Total V Unlevered	**9.140,76**	**86,42**
Tax Shields	1.390,72	5,23
Bankruptcy Costs	3.262,53	37,99
Enterprise Value	**8.713,61**	**104,63**

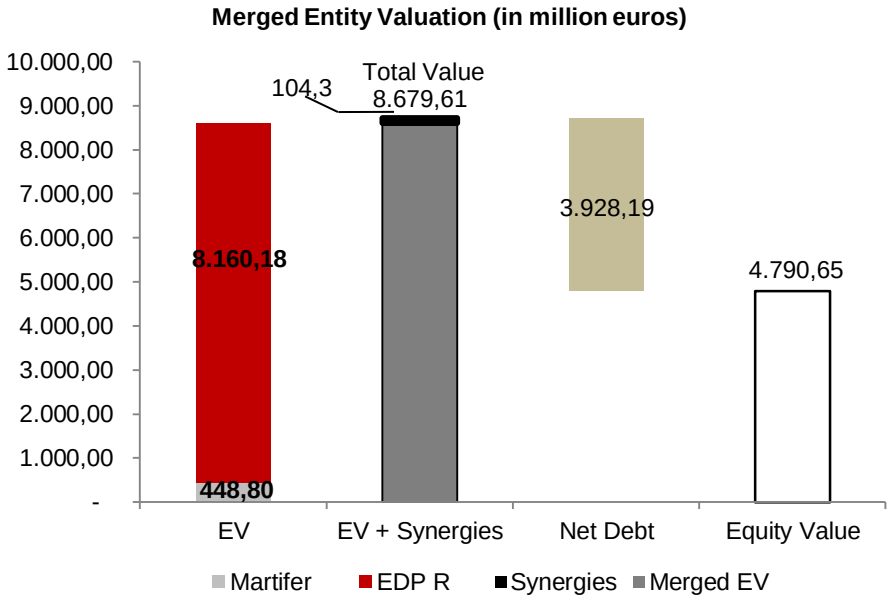
Table 80 Synergies breakdown by unit



Graph 22 Synergies by impact created

The synergies can then be divided in type of impact. 45% are created by EDP R and the reminiscent on Martifer, however the distribution by type, in terms of cost savings, does not only account for reducing costs by improving EBITDA margins, but also reducing investment expense. The revenues synergies are related with the synergies achieved by the components' production by Martifer. It is important to underline than in a business like energy production the revenue synergies are reduced due to the regulated character of the price.

The 104 million euros of the synergies do not account for transaction costs, since those will be covered by EDP R later. Besides, the target company other possible management improvements were not accounted for, since those are considered as being part of the value of control and not synergies. For instance, the fact EDP R has a considerable network, bargaining power and a great brand image are not synergies towards Martifer when merging activities, are advantages in being owned by EDP R whose feasibility is not 100% assured.



Graph 23 Merged Entity Valuation (in million euros

The net debt of EDP R increases because of a reduction in the level of cash, a consequence of the deal financing. The variation is worth the value considered for the acquisition, having as ceiling price 128,8 million euros, which was the amount paid considered for the derivation of the merged equity value. This price includes the payment of the synergies achieved by Martifer in the development of the new segment and the improvements of the wind and solar parks (the impact of the merger on EDP R is not included in the price paid). Additionally 50% of the financial synergies are also accounted for in the maximum offered price. On top of the acquisition price, the transaction costs account for 5% of the acquisition price (6,4 million euros), paid by EDP R.

THE ACQUISITION: MARTIFER GROUP AS A TARGET

The advent of a transaction including a portfolio company broadens perspectives about buying one of the target's segments rather than the whole company. In the case of Martifer, the potential of synergies with EDP R cross the several units through a vertical integration, EBITDA margin improvements in overlapping activities and expertise transaction. Hence, the approach was of a bid offer on the Martifer Group.

The next topics aim to define the type of approach according to certain crucial characteristics. The shareholders structure, the mode of payment and its financing, the premium offered, the potential existence of other bidders and finally the execution risk will be the main issues so that the effectiveness of the deal is finally assessed.

1. Shareholders

1.1. Target Firm

Only 18% of Martifer is traded in the PSI-Geral. Within its ownership there is a 43% slice owned by the Martins family and 38% of MotaEngil (the rest are treasury shares). It is unavoidable to face the issue of Martifer being a family-owned company whose attachment to the company and to its history is a reality.

Even though the company has been underperforming, the Martins brothers are keeping effort in developing the business and creating new opportunities so that it keeps going on. This attitude reveals an emotional value that may constitute an obstacle to this transaction.

There are two ways of taking control of the company: friendly and non-friendly. Obviously the first step is negotiation with the company and its main shareholders, in the case Martins family and MotaEngil. There is a second option that refers to the execution of a deal only with MotaEngil and buying shares through the stock market, achieving a larger stake than 43%. The company is so consolidated that there is not the hypothesis of a tender offer since the conversion of one of the major stockholders is demanded so that the takeover becomes effective.

The plan of the synergies' expectations should be an incentive to acceptance, by showing the potential of colluding with this acquisition (of course with limited disclosure). Nevertheless, the deal should include the maintenance of part of the Martins family as board members (even if a complete acquisition takes part) as well as the main directors. Although the former suggestion is more of a management and know-how sense rather than appraisement the target owners.

1.2. Acquirer Firm

The EDP R's shareholders are constituted by EDP Group directly with a share of 62% and indirectly through Hidroelectrica del Cantábrico with 15,5%: The reminiscent is free float of 25,5%. The decision of going further with the deal is basically on the side of the parent

company therefore it is not expected any obstacles from EDP R's shareholders, in the effectiveness of the transaction.

2. Other bidders

Martifer may become target of more companies if the rumor of an interest of EDP R is disclosed. Hence, it is worth to dig in the possibility since EDP R is not an obvious acquirer of the company, and other industries shall be analyzed. Not only this is not a pure horizontal acquisition by EDP R (the only type performed until now by the company), but also Martifer is underperforming although increasing turnover.

Martifer by being a portfolio company may have interested companies from different backgrounds due to the presence in more than one industry. A value-added proposal may come from different sectors

The metallic constructions segment is shrinking value, as the ROIC is lower than the cost of capital of the company. In fact, it can be considered a reason to believe that management efficiencies could be applied. However, the small size of the company makes it unknown and it may keep away other companies interested in bidding for the company.

The most attractive segment in terms of growth opportunities is the solar one. Nonetheless, the company would not be interested in selling only this unit as it is a valuable segment for the group as whole. EDP R may compete with others as the strategic impact and outcome of this deal is one step ahead of the industry so that other peers of EDP R (in the sense of same industry) may also become attentive.

The wind and solar parks are considered assets held for sale. It is then a possibility for EDP R, if the deal does not occur to buy only the assets that represent consolidation and diversification. In this competition, several other players may arise as the assets are operational efficient and strategically valuable, located in Portugal, Spain, Romania and Brazil.

Concluding, the possibility of other bidders appearing exists. But if happening, EDP R is in a good position not only in terms of strategic sense but also the existence of a parent group that could back a higher price than the one EDP R is able to pay (never going further than the ceiling value pre-defined).

3. Regulators

As the deal is going to occur within two European companies, both with direct links to the Portuguese legislation the approval of a certain authority may be required due to the energy prominence in both companies.

EDP R is headquartered in Spain, nevertheless by being quoted in Portugal and owned by a Portuguese company (EDP) the approval of buying other Portuguese company like Martifer

shall pass by the ERSE (Energy Services Regulatory Authority/Entidade Reguladora dos Serviços Energéticos). In fact, as none of the direct intervenient is directly distributor of electricity, the entity may not claim any role in the acquisition. The possibility of the emission of a judgment is related with the overlapping assets in an initiative: *Eólicas de Portugal*, which went to public auction for two separate times in order to assure a free market in the competition for the production of energy based on wind in the country.

Concerning the definition of the prices of wind and solar energy, it has a larger scope as the deal within the negotiations may lose value. By happening changes in the regulation of each country in terms of the remuneration, for example, but it is considered a risk of activity in the energy business rather than a specific possible jeopardy to the transaction.

4. Negotiation Process

The way the negotiations is started and handled is crucial for the success of the transaction. In order to avoid a potential winner's curse or failure in achieving the best output, a careful plan and position must be pre-defined.

Considering the small dimension of Martifer and its familiar character, it is recommended that the offer is initiated in a friendly manner and through negotiation meetings. The proposal must be disclosed to the shareholders when an agreement is achieved due to the fact both companies are quoted. According to the Portuguese Securities Market Commission's code (CMVM) the acceptance of 75% of the target's shareholders is required to effective the merger of the assets. Nevertheless, in this case the synergies may be enjoyed without a complete merger and just with the ownership and control by EDP R.

The possibility of integrating Martifer in the EDP R and therefore stop being traded in the PSI Geral would imply that, even if the transaction is performed with the two major shareholders (Martins Family and MotaEngil), the shareholders outstanding also accept the offer.

The agreement shall have more details then the price offered since some other details require arrangement. The due diligence is also mandatory in order to assure the expectations of EDP R with this deal. The transaction and integration costs developed in the previous section already accounted for those expenses as with experts, accounting and consulting firms and investment banks' fees.

5. The offer

The deal has its *pinnacle* in the decision of a price to be offered. In the literature review Warren Buffet was mentioned because of sentence that is a *motto* of the decision in pricing a company. The price paid and the value actually obtained is not the same and the price negotiations in an M&A transaction reflects that.

	In euros
Average Market Capitalization	70.404.544,8
Equity Value	71.751.310,9
Value of Synergies Allocated to Martifer	57.110.583,5
Acquisition Price	**128.861.894,4**
Premium	
With average market cap	44,8%
With Equity Value	44,3%

Table 81 Acquisition price

After analyzing the environment and the potential of this transaction the decision towards the price is given by a range of values. Martifer is worth 71,8 million euros according to the DCF Model previously developed. The market does not match the valuation performed, since the price per share is lower (€ 0,56 comparing with €0,73).

However the synergies carry risk and may not bear out when performing the acquisition. A share of the synergy value may be offered with the price. On the other hand, the first price proposed must be a sign of a friendly transaction and not to harm the relationships[41] for further moments of negotiation. The range has to be higher than the present stock price (€0,56), but not too high since it would be perceived as a hostile bid. If offered the theoretical value, comparing with the average market capitalization within 2012 it would be a lower value, since the average stock price was of €0,72. Both analyses were computed.

The synergies allocated to Martifer correspond to a part of the positive impact of producing the components of windmills internally. In addition there are also the synergies related with the revenues generation from the development of the energy systems segment and the improvement in the wind parks efficiency. The development in the solar park in Romania was not attributed to Martifer because it is owned by EDP R. On the other hand, the integration and transaction costs are going to be fully covered by EDP R. Half of the financial synergies were attributed to Martifer as well, since the company will have a rating benefit consequence of being acquired by EDP R.

The acquisition price proposed by the model still lets out a considerable amount of the synergies to be enjoyed by EDP R after the merger. Hence, the item referred as to acquisition price is not the maximum the company can offer, nevertheless it is considerable a reasonable

[41] Both companies have already transacted one unit of the Solar Business segment in 2010. The segment was called Home Energy, acting in the licensing of buildings concerning the energy requirements due to a new law created in 2009

proposal. If the acquisition price amounts to a larger value than the market value, as it is expected, it should be registered in the balance sheet an addition to the Goodwill.

In a nutshell, the acquisition price represent a value per share of €1,32 and it represents a 44% premium comparing with the theoretical price achieved in the previous section and the average market capitalization of 2012, respectively.

6. Premium Offered

As far as it is concerned, the concept of premium presented until now is purely based on synergies. Nevertheless the transaction may create value due to the management improvement implied by EDP R.

Meet the Premium Model	
% SynC	1,6%
% SynR	9,52%
EBIT margin	4,4%
%P	44,3%

Table 82 Meet the Premium Model

6.1.Synergy-Premium Model

The financial literature about M&A stresses that the effectiveness of this deal may create a new industry through the consolidation of a vertical integration in the utilities segment. In fact, the possibility of this type of synergies has no historical information since any similar transaction was found. Nonetheless, it is possible to analyze the recommended premium based on the "meet-the-premium" line regressed through the Synergy-Premium Model (already developed in the Literature Review: Sirower and Sahni, 2006).

The interpretation of the results of this model must be performed in a careful manner since, as it was already referred in the Literature Review, there is a certain bias[42]. The model bases its premium on a given amount of improvement in terms of cost reductions and revenue enhancements, as it can be seen in the formula below:

$$\%\,\text{SynC} \geq \frac{\pi}{1-\pi} \times (\%\text{P} - \%\,\text{SynR})$$ [43]

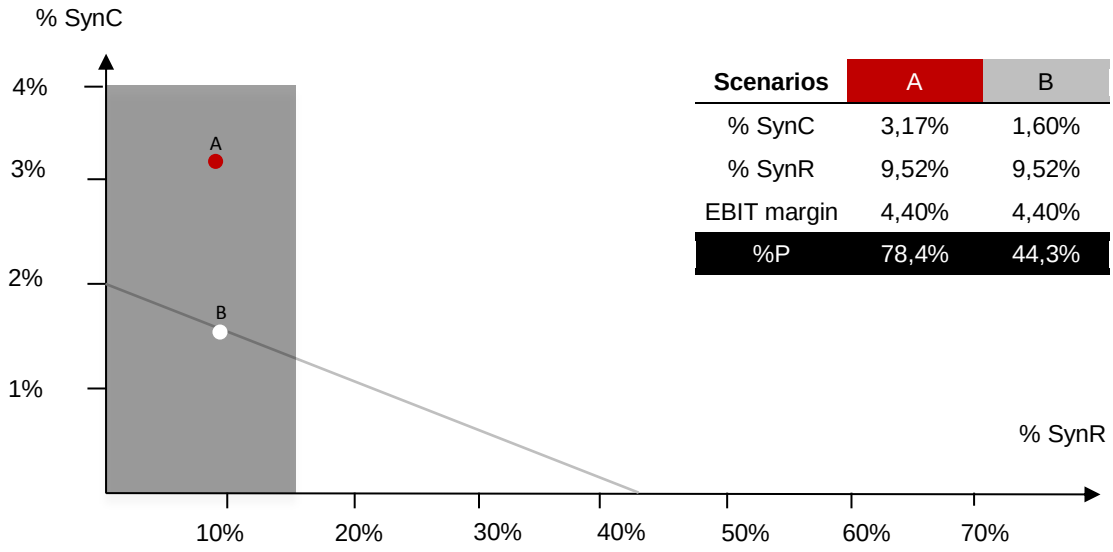
The EBIT of Martifer in 2012 was negative therefore it was computed the forward multiple based on the 2013 forecasted earnings[44] when performing the valuation. The cost synergies in percentage of the total cost structure yields 1,3%, and the revenues synergies represent 9,5% of Martifer's revenues in 2012. The minimum premium based on the previous data is of 78%.

[42] It assumes that an acquisition premium implies immediate and perpetual increase in earnings because the price-earnings ratio is always constant as it is shown by the formula. Moreover, the model assumes that all improvements occur in Martifer's structure. There is more information about the topic in the Literature Review Chapter.

[43] %SynC is the pre-tax cost synergies as % of original target's operating cost base; %SynR being the pre-tax revenue synergies as % of original revenue; π being EBIT margin; and %P being the premium paid as % of the target's market value before the bid.

[44] In fact the forward multiple have better results than the trading one (Liu et al., 2002)

Compared with the premiums considered in the acquisition price topic, it is higher, although this model outlines a minimum premium. On the other hand, in order to achieve the premium referred before, of approximately 44%, the synergies in percentage of the cost structure would have to be only 1,6% (assuming constant synergies in the revenue's side). And if no revenue synergies were verified, the offer of 44% premium is covered by the cost synergies.



Scenarios	A	B
% SynC	3,17%	1,60%
% SynR	9,52%	9,52%
EBIT margin	4,40%	4,40%
%P	78,4%	44,3%

Graph 24 Synergy-Premium Model

Red/White ball: represents case A/B (respectively)
Box: range of % SynC of 4% and % SynR of 14%

The graph was drawn so that it presents the two referred cases. The case A is referent to the real case in terms of synergies on Martifer's structure. The premium it yields is beyond the *Meet-the-Premium Line*. Instead, the case B is relative to the white ball and it is the *Meet-the-Premium Line* if the premium offered is computed. Besides, the box in grey is the plausibility box. The concept covers the possibility of larger synergies' percentage being computed and its relationship with the case A and B. As a matter of fact, it is worth it to enlighten that the box conceives the real case and a part of the meet-the-premium line; therefore it may be an actual reasonable premium, even considering only the revenue and cost type of synergies in percentage of Martifer's items.

6.2.Industry Control Premium

Although control is not required in this transaction it was performed an analysis of the literature[45] over the premiums common in each industry according to data of deals happening worldwide in 2012.

Sector	Average Control Premium
Constructions	28,60%
Industrial Machinery	57,60%
Electrical Machinery	66,50%
Utilities	37,70%

Table 83 Control Premium per Industry
Source: Global Mergers and Acquisitions Data

[45] Global Mergers and Acquisitions Data (2012): http://www.bvmarketdata.com/pdf/CPS1q12Sample.pdf

As Martifer is a portfolio company the target analysis was performed based on a variety of industries. It was included the industry where the acquirer would fit, which overlaps with the segment of Wind and Solar Parks of Martifer (there is not data about each type energy).

The industries' control premiums are in line with the premiums yielded in the offered price topic. In fact, the premium of the proposal is in line. If the premium was the average of the industry ones weighted by revenues (Martifer, in 2012) the premium would be of 42,3%.

7. Shareholders' Value at Risk

The concept of shareholders' value at risk was presented in the literature review and basically it refers to the risk of the acquirer's shareholders as the representativeness of the premium paid for the target in terms of the market value of the buying company.

Hence, the purpose of computing this metric was of understanding the possible impact of not realizing the synergies. The premium paid for Martifer represents 1,7% of EDP R market capitalization. In the case the acquisition is paid in the cash and none of the synergies transform into reality, the EDP R' shareholders will lose 1,7% of their value.

8. Method of Payment

The decision of acquiring Martifer, in terms of mode, is subject to three decision-making conditions. According to the model previously developed, EDP R is undervalued with an upside potential of 29%. This means that the possibility of financing with new equity by issuing new shares will result in dilution therefore an option to exclude since it will imply the a lower issuing price than the fair one.

The control issue is highly related with the payment mode. As a matter of fact the small size of Martifer comparing with EDP R would not impact severely in the dilution of shares. On the other hand, considering the reality of the shareholders of the company a pure cash transaction may not hold due to the fact the Martins family will want to keep a footstep in the company. EDP R's control is not crucial for the effectiveness of the synergies. However, the undervaluation of the former's shares produces a low interest in performing a stock transaction (at a lower price than its face value since EDP R shares were issued at €5). The payment in cash rises as the best possibility but with openness to certain peculiarities. For instance the continued presence of certain board members of Martifer shall be part of the agreement.

The signaling of paying with shares may also be percept as a reduced confidence in the deal, however execution risk of the synergies exist. Finally, the impact of changing the capital structure if choosing one way or another must be also assessed. Ideally, the deal should be financed mainly with cash, yet it is important to ensure that the investment grade rating will still be maintained.

9. Financing the deal

The deal may be financed internal or externally. Within the company there are two options available since it can be funded by cash or stock or a mix of them.

EDP R held positive free cash flow for the first time in 2012. After seizing debt repayment, interest costs and other expenses, the reminiscent is of 33 million euros. Furthermore, the cash pile of EDP R totals 236 million euros, as of 31st of December 2012. Although it holds an operational character it is reliable the assumption of reducing its amount to finance partially the transaction. The financial structure would be affected by the change as it represents a slight increase in EDP R's D/V ratio and interest tax shields.

EDP R would meet the median of the industry ratio if financing the deal purely with debt since it will increase to 54% (assuming the acquisition price and the debt as of 2012). Consequently, the performance of the deal with debt will not change the rating of EDP R, according to the interest coverage ratio methodology[46] (impacting in 2013 forecasts). Moreover, interest tax shields will be created out of this debt incurrence.

Traditionally EDP R in its short history of transactions financed based on debt. In fact, the acquisition of Horizon, in the USA, was purely financed with debt, as it was $2 billion US Dollars deal. In this case, the small dimension of Martifer, and consequently of the offering price implies a different type of structure. The complexity of the offer may be simplified by a pure cash option (as the company expects an increase of its results in the short-term). Nevertheless, a historical analysis of the cash and equivalents refers to the fact that the company is facing a lower value than the average. Hence, the solution was of financing purely with debt through the parent company EDP (as it refers to 76% of the existing debt). It will provide the opportunity to enjoy tax-shields. From 2012 to 2013, the long term debt item increases by 173 million euros. It is based on the requirements of investment considering the growth plan (and respecting the industry average of D/V ratio), where the acquisition of Martifer is included, with an offering price of 129 million euros.

10. Execution Plan

The riskiness of certain deals may be adjusted through a proper plan. The strategy should account for predictable issues that may urge. As a matter of fact the execution risks account not only for the specific business risks of the industry (that were already developed in the operational and financing issues of the stand-alone valuations), but also from the perspective of the challenges of a transaction of this type between two companies.

[46] The conservative perspective was kept, although it is very likely that in the case of needing more debt, EDP Group would finance at the usual rate of 5,4% approximately (based on historical data – EDP R Report 2012).

Firms are not only composed by buildings, machinery and materials. People and know-how are nowadays more and more valuable than any other asset, especially when the merger is not a pure horizontal one. The loss of the expertise and skills in the business may dictate strong problems, contributing to its failure.

As it was stated in the literature review, it is possible to classify a deal according to the type of synergies it yields. The purpose of analyzing the positive impact through Ghauri and Buckley (2003) model is to apply the best strategy in terms of transforming the synergies into cash flows, avoiding post-merger issues.

In terms of problems after acquisition it is important to drive the integration by specific opportunities to create value. It's about being as more efficient as possible in terms of production, development and implementation. The main task when post merging is the definition of key-people: the expertise is far more valuable that the technology developed so far. The size of EDP R may also struggle Martifer that is going to feel to part of a more bureaucratic one. The motto is "Need for speed" and "Your people" to integrate and avoid non-invented here syndrome. For instance Martifer and EDP R should partnership their innovation labs.

CONCLUSION

"I have found that when the market's going down and you buy funds wisely, at some point in the future, you will be happy. You won't get there by reading. Now is the time to buy."
Peter Lynch

The first chapter of the Thesis started with a quote of Warren Buffet. Hence, in order to conclude other important M&A expert is referred, Peter Lynch.

The Portuguese stock exchange is undoubtedly facing a turmoil moment which impact severely Martifer's stock price. The company's IPO was in June 2007. In December of the same year, the share was quoted at €8,15. However, at the end of 2012, the price has less than 10% of the latter value, priced at €0,56. The firm suffered several restructures and sold assets therefore it is not fair to directly compare both values. Nonetheless, the valuation performed yields an upside value of 30%. Therefore, the acquisition of Martifer's assets by EDP R represents by itself a valuable transaction, besides the potential of synergy gains.

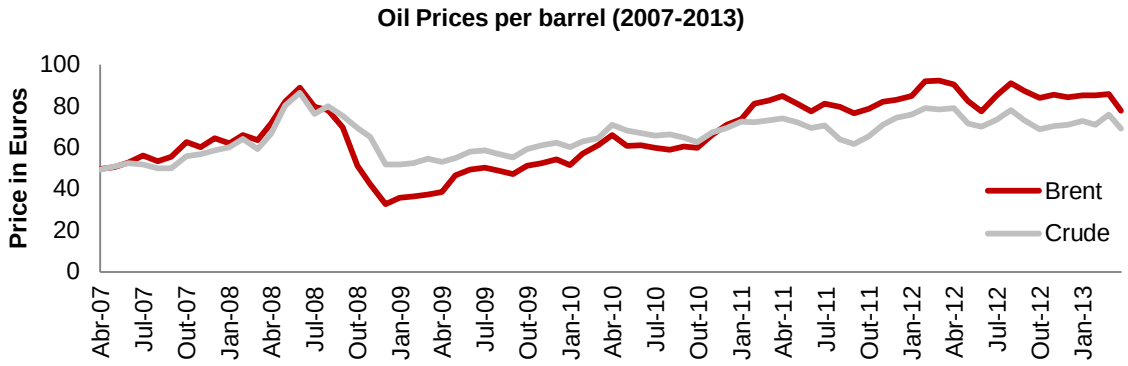
Due to the diversity in geographies, industries and level of the supply chain of the segments of the two companies, a wide range of variables was studied. It led to a deep analysis of the expectations towards the worldwide economy. As far as it is concerned, there are growth opportunities expected for both companies. The acquisition of Martifer by EDP R represents a complete type of merger as it conceives the existence of several sorts of opportunities to attain. Not only a vertical integration is include through the complementary businesses, but also the diversification of renewable energy type which consists in a form of hedging the risk towards the natural resources volatility. Additionally, Martifer is facing challenges in the debt management section, which EDP R financial strength would be important for. Challenges were not absent from the analysis, as the execution of such a complex deal is not smooth. For instance, people do not always surrender to changes in the environment of work, as well the proper integration costs. Moreover, the fact the target company roots are family-based represents an obstacle to the deal.

Regarding the acquisition, a conservative perspective was preferably kept. The foggy situation of Martifer, in terms of its management (as an 85% probability of default was assumed in the standalone valuation), and the possibility of one of the synergies not performing (since it requires the collaboration of a third party) are issues that may arise when a real negotiation starts.

Finally, the dissertation enclosed several details of the deal proposition. The concreteness of the transaction was assessed, albeit the singularity of this type of deal did not allow developing matters that required internal information: possible corporate management improvements, other integration costs, and lastly the availability of EDP R to actually promote this contract occurrence.

APPENDICES

1. Oil Prices per barrel (2007-2013); Source: Bloomberg



2. Progress In The Program 20-20-20; Source: Report from the Commission to the European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions, European Commission (In 27th March 2013)

Member State	2005 RNW Share	2010 RNW Share	1st Interim Target	2020 RNW Target
Austria	23,30%	30,10%	25,40%	34%
Belgium	2,20%	5,40%	4,40%	13%
Bulgaria	9,40%	13,80%	10,70%	16%
Cyprus	2,90%	5,70%	4,90%	13%
Czech Republic	6,10%	9,40%	7,50%	13%
Germany	5,80%	11,00%	8,20%	18%
Denmark	17%	22,20%	19,60%	30%
Estonia	18%	24,30%	19,40%	25%
Greece	6,90%	9,70%	9,10%	18%
Spain	8,70%	13,80%	10,90%	20%
Finland	28,50%	33%	30,40%	38%
France	10,30%	13,50%	12,80%	23%
Hungary	4,30%	8,80%	6,00%	13%
Ireland	3,10%	5,80%	5,70%	16%
Italy	5,20%	10,40%	7,60%	17%
Lithuania	15%	19,70%	16,60%	23%
Luxembourg	0,90%	3%	2,90%	11%
Latvia	32,60%	32,60%	34,00%	40%
Malta	0%	0,40%	2,00%	10%
Netherlands	2,40%	3,80%	4,70%	14%
Poland	7,20%	9,50%	8,80%	15%
Portugal	20,50%	24,60%	22,60%	31%
Romania	17,80%	23,60%	19,00%	24%
Sweden	39,80%	49,10%	41,60%	49%
Slovenia	16,00%	19,90%	17,80%	25%
Slovakia	6,70%	9,80%	8,20%	14%
UK	1,30%	3,30%	4,00%	15%
EU	8,50%	12,70%	10,70%	20%

3. Global Wind Cumulative Installed Capacity by region 2010-2024

by Region	*2010*	*2011*	*2012*	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR
Africa Middle East	*1.216*	*1.341*	*1.711*	2.171	2.661	3.226	3.816	4.476	5.190	5.970	6.860	7.847	8.941	10.163	11.521	15%
Latin America	*1.440*	*2.450*	*3.820*	5.052	6.252	7.537	8.957	10.437	12.198	14.198	16.418	18.873	21.503	24.268	27.157	15%
Asia Pacific	*54.695*	*73.321*	*93.665*	114.880	136.655	159.055	182.090	205.795	230.240	255.300	281.153	307.313	333.918	360.938	388.323	11%
North America	*44.726*	*52.480*	*60.298*	68.404	76.503	84.522	93.472	101.812	110.262	118.767	129.157	140.367	151.112	161.737	172.317	8%
Europe	*86.022*	*96.179*	*107.748*	119.516	131.260	144.090	157.470	171.194	185.958	201.208	216.747	232.111	248.119	264.800	281.951	7%
Total	*188.099*	*225.772*	*267.243*	310.024	353.332	398.430	445.805	493.715	543.848	595.442	650.335	706.511	763.592	821.906	881.270	9%

Only Considering countries where EDP has activity

European Wind Cumulative Installed Capacity by region 2010-2024

	2010	*2011*	*2012*	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR
Romania	*462*	*812*	*1.362*	1.862	2.362	2.862	3.362	3.962	4.562	5.062	5.412	5.612	5.769	5.931	6.102	10%
Poland	*1.107*	*1.457*	*1.807*	2.157	2.557	3.057	3.657	4.307	4.957	5.557	6.157	6.668	7.184	7.706	8.233	12%
Belgium	*716*	*826*	*936*	1.046	1.156	1.256	1.356	1.456	1.556	1.656	1.756	1.824	1.887	1.953	2.013	6%
France	*5.729*	*6.829*	*7.829*	8.829	9.929	11.229	12.629	14.129	15.629	17.129	18.629	19.998	21.084	22.186	23.303	8%
Portugal	*3.898*	*4.298*	*4.798*	5.098	5.398	5.648	5.898	6.048	6.198	6.348	6.448	6.601	6.760	6.924	7.096	3%
United Kingdom	*3.823*	*4.532*	*5.243*	5.955	6.671	7.396	8.146	8.906	9.685	10.481	11.295	11.890	12.505	13.186	13.896	7%
Italy	*5.797*	*6.597*	*7.297*	7.997	8.697	9.297	9.897	10.397	10.897	11.397	11.953	12.526	13.113	13.712	14.321	5%
Spain	*20.300*	*21.730*	*23.380*	24.930	26.430	27.880	29.330	30.780	32.180	33.580	34.980	36.430	37.889	39.341	40.792	4%
Total	*41.832*	*47.081*	*52.652*	57.874	63.200	68.625	74.275	79.985	85.664	91.210	96.630	101.549	106.191	110.939	115.756	6%

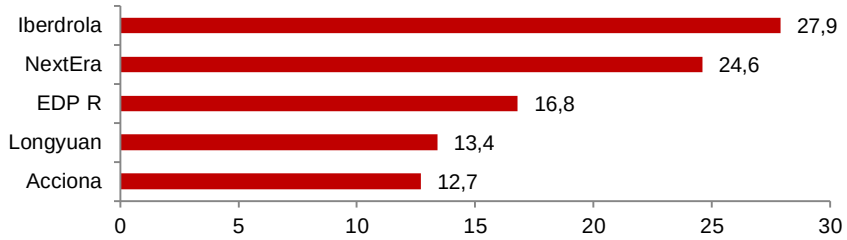
North America

	2010	*2011*	*2012*	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR
Canada	*4.019*	*5.766*	*7.273*	8.865	10.280	11.479	12.679	13.904	15.089	16.099	17.304	18.459	19.449	20.469	21.489	8%
US	*40.153*	*45.810*	*51.871*	57.871	64.051	70.471	77.371	83.636	90.151	97.096	105.531	114.436	122.991	131.496	139.356	8%
Total	*44.726*	*52.480*	*60.298*	68.140	75.985	83.854	92.204	99.944	107.944	116.199	126.139	136.499	146.344	156.219	165.449	8%

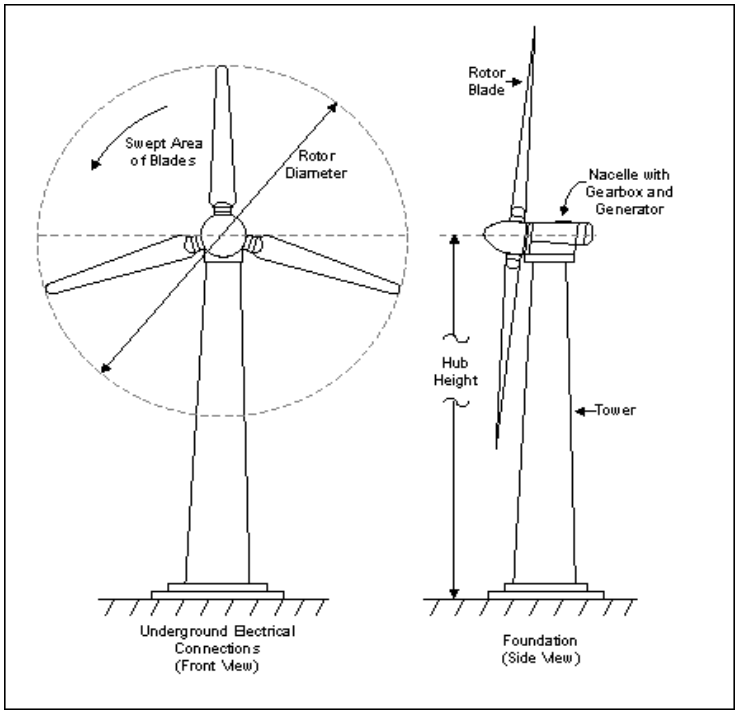
Brazil

	2010	*2011*	*2012*	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR
Brazil	*932*	*1.432*	*2.132*	2.832	3.532	4.332	5.182	6.182	7.432	8.832	10.432	12.332	14.332	16.432	18.632	17%

3.1. Top Players by Installed Capacity in 2011 (GW)



4. Structure of the Wind Tower



5. Analysis of Renewable Energy Law per country

5.1 Portugal

As of 31st of December of 2012, the legislation ruling was the DL 215B/2012 (a consolidation of DL 33A/2005) that included a different regime for the wind farms licensed before and after 2006. The fact the law changed, with the creation of DL 35/2013[47] (approved in March 2013), is not going to be incorporated because the new regime will give several options towards the investments, either willingness to change to different pricing schemes or not (15 years from the time the wind farm is online). In 2012, a consolidation of the legal terms was released through the DL 215B/2012, this way the valuation will include the price as of DL 33A/2005 formula. The regime relates negatively the operating hours and the tariff, being defined within a range of 2000 and 3000 annual hours, and then determined by linear interpolation. Since the units are adjusted according to CPI that is going to be the driver of the price in Portugal, and the price of 2012 will be assumed as being a weighted average of the different regimes, 101,8€/MWh.

It is important to define the situation of the stake in the consortium Eólicas de Portugal. From 2012 on, the revenues are being consolidated in the accounting since until then it was considered as deemed investment in associates. The assets were split by the participants of the consortium, being 480 MW (only 390 MW operating).

5.2 Spain

The regime changed as it was referred in the Industry Analysis due to the need to cut in the public expenditure, having a remarkable impact for the next years. But as it was known by the end of 2012, and approved in February and applicable to 2013, it was applied to the valuation. The CPI is the legal driver, nevertheless the price for 2013 is 81,2€/MWh, since EDP R have chosen the feed in tariff instead of poll with a premium – it is the riskless option. From a comparison point of view the two regimes in force in 2012 had a weighted average price of 87,7€/MWh in 2012 for EDP R wind farms, which is a 7% decrease due to the existence of an across the board tax on electricity generation.

The type of CPI to be used excludes food and energy from the calculations which, in 2012, was 200 bp lower than the published CPI (0,9% Vs 2,9%). Nevertheless the forecasts for CPI in the next years are the generic type.

Although the taxes have immediate impact the other change in the DL referred before will only be applicable to new infrastructures from 2013 on. As a matter of fact no new MW are planned in Spain for the time being.

[47] CS associados – Lawyers Office on Update of the Corporate Tax Regime in Portugal: http://www.csassociados.pt/xms/files/DESTAQUES/REGIME_REMUNERATORIO_DE_CENTRAIS_EOLICAS.PDF

5.3 France

Arrêté du 10 juillet 2006 (2006 Decree)

1. If the contract for selling electricity to the grid is requested in 2006, the applicable tariffs are those detailed in the "France" Section of text.

2. If that happens only after December 31, 2006, the applicable tariffs are those but they are instead indexed to the K coefficient described below.

3. In case that happens only after December 31, 2007, the applicable tariffs are those but indexed, on 1st January of the year of the request, to the coefficient $(0,98)^n$ x K, whereby K is as presented below and n is the number of years passed since 2007 (n=1 for 2008):

$$K = 0.5 \times \frac{ICHTTS1}{ICHTTS1_0} + 0.5 \times \frac{PPEI}{PPEI_0}$$

- ICHTTS1 is the last known value, as of 1st January of the year of the request, of the index of hourly labor cost in mechanical and electrical industries (including every kind of paid worker);
- PPEI is the last known value, as of 1st January of the year of the request, of the producer price index in the manufacturing sector and in the sector of manufacturing-support services rendered to companies (French market);
- $ICHTTS1_0$ and $PPEI_0$ are the last known values as of the date of publication of this decree.

4. Each electricity sales contract follows an indexation rule for the applicable tariffs; such indexation is made annually on 1st November by applying the L coefficient

$$L = 0.4 + 0.4 \times \frac{ICHTTS1}{ICHTTS1_0} + 0.2 \times \frac{PPEI}{PPEI_0}$$

- ICHTTS1 is the last known value, as of 1st January of the year of the request, of the index of hourly labor cost in mechanical and electrical industries (including every kind of paid worker);
- PPEI is the last known value, as of 1st January of the year of the request, of the producer price index in the manufacturing sector and in the sector of manufacturing-support services rendered to companies (French market)
- $ICHTTS1_0$ and $PPEI_0$ are the last known values as of the date on which the sales contract comes into force.

Below see the actual tariffs derived in the Model.

Feed in Tariff Old Regime (€/MWh)

For WFs with COD in:	Period 1 (5yrs)	Period 2 (10yrs)		
		2.000 h	2.600 h	3.600 h
2004	83,80	83,80	59,50	30,50
2005	82,57	82,57	58,63	30,05

Feed in Tariff New Regime (€/MWh)

For WFs with COD in:	Period 1 (10yrs)	Period 2 (5yrs)		
		2.400 h	2.800 h	3.600 h
2006	82,00	82,00	68,00	28,00
2007	82,50	82,50	68,42	28,17
2008	83,90	83,90	69,57	28,65
2009	83,36	83,36	69,13	28,46
2010	82,36	82,36	68,30	28,12
2011	81,81	81,81	67,84	27,94
2012	81,86	81,86	67,88	27,95
2013	82,15	82,15	68,12	28,05
2014	82,42	82,42	68,34	28,14
2015	82,65	82,65	68,54	28,22

Before the change in Spain, the French pricing scheme was probably the one giving the lowest returns within the countries where EDP R is currently under operation. The regime in France is defined by a complex formula shown in the Arrêté du 10 juillet 2006 (2006 Decree). The last regulation update was of Article 10 of Act 2000-108.

“Act 2000 provides that, operator of wind facilities may enter into long-term agreements for the purchase and sale of energy with Electricité de France (EDF). The tariffs are set by Order of July 10, 2006 wich was repealed in August 2008 due to formal defect in its approval, and then republished without any amendment in December 2008”, in EDP R Report.

To retain is that the during the first ten years of the EDF Agreement EDF pays a fixed annual tariff is set at €82/MWh being amended based on inflation; for the 11 to 15 years there are defined thresholds according to annual operating hours and respective remuneration. The K factor is 50% for the hourly labor cost in mechanical and electrical industries and 50% for the producer price index in the manufacturing sector. After 15 years of operation the electricity is supposed to be sold at market prices in an OTC market. In order to simplify the assumption it was performed the CPI as a reliable driver of the prices as time goes by.

5.4 United States of America

The pricing schemes in the USA include the power purchase agreements (PPA: contract with a fixed or escalating price for 10 to 20 years), merchant (full market exposure) and hedge (an intermediate form of the previous two presented since the electricity is sold to the market, renewable energy certificates are sold separately as in merchant case but a fixed price is contracted with brokers to balance with the floating price).

In the case of EDP R, 79% is under PPA (or hedge agreement) with a fixed tariff and respective escalators. And the rest is subject to the market price. Both are sorts of pricing schemes really hard to predict. The historical rates of prices are not stable. Nevertheless the incentives of the American government seem to be now aligned and defined quotas of renewable energy in each state were approved as well as a 10 year extension of certain incentives to the activity. The point is that the positive framework towards the demand seems to be clear. From 2011 to 2012 the evolution from the PPA was 3% and 2% for the market. By comparison with CPI in 2012 of 2,076% it seems to be an acceptable approach to use that rate.

From January 2016 on, only 8% of the investments in USA will be under merchant scheme since it was signed a power purchase agreement with Georgia Power. This transference was performed within the time line.
In terms of tax benefits the breakdown of 2012 was assumed as stable in the sense that 58% of the installed capacity was under a production tax credit type (which includes a benefit of $22/MW), the cash reimbursement was 28% of the MW, and the rest (14%) as cash flip tax.

As a result of American Taxpayer Relief Act of 2012 approved in January 2013, the wind projects that have begun construction until 31st December 2012, will qualify for 10 years of Production Tax Credits (“PTC”) on the electricity output by a remuneration of $22/MWh. Production Tax Credit is one of the components of the wind energy remuneration scheme, which were scheduled to expire on December 2012, for projects placed into service. The owners of the wind projects would also have the option to choose a 30% Investment Tax Credit (“ITC”) on the project cost in lieu of the PTC through the duration of the extension.

The towers to be online from 2016 on will be aggregated to the PPA since it fits the requirement (being already under construction until the end of the year). The 22$ benefit as of today will grow at inflation. The line of Income from Institutional Partnerships represents the recognition of the benefits of production tax credits,

investment tax credit and other tax benefits mostly from the accelerated tax depreciation bonuses. Historically the income from the institutional partnerships (in million dollars) represented always 4,5% of the installed capacity in megawatts. This way, it will the resolution for the next years. It was not accounted a possible inflation impact since it is a fixed factor calculated over the installed capacity.

5.5 Italy

The reference price for 2013 is 127€/MWh for onshore wind, in a Decree on Renewables based on a feed-in tariff support scheme, replacing the previous one grounded on green certificates. Considering the timeline, the new scheme will only be applied to wind farms built before December 2012, from 2015 on.

In the specific case of 40 MW that are operating since the fourth quarter of 2012, the price adopted is under a long term contract of market price plus a green certificate, where the green certificate is calculated through a formula of 0,78*(€180/MWh – p_{n-1}) where p_{n-1} is the average market price of previous year. From 2016 it is no longer a green certificate but a pool price plus a premium which is calculated the same way as the green certificate. For 2013, the green certificate as of 80,3€, and the average price of last year was €77,05/MWh. Considering this the inflation will be applied to the former value and calculated the remuneration based on that. The repetition of the calculation of the average market price and respective green certificate or premium is the best forecast within the complexity of a dual system of remuneration.

5.6 Canada

C$135/MWh rate for onshore wind is the feed-in tariff defined for Ontario at 2012 prices. The update was performed based on inflation however the wind farm will only producing in 2015 there is no other reliable option for the predictor.

5.7 United Kingdom

According to the company predictions the construction is about to start in 2015 and the production should start in 2020 therefore this project was not accounted for in terms of the valuation since it is not generating cash flow and in terms of balance sheet is an investment asset due to the existence of a partnership with Repsol for the Moray Project (which is 1,5 GW of the 2,4GW) and the Inch Cape project (under the same partnership the reminiscent 0,9 GW) still has non-defined dates to be started.

5.8 Belgium

As the country is divided between regions, Brussels-Capital, Flanders and Wallonia play different prices in terms of renewable regulation. The EDP R investments are all in Wallonia therefore the scheme is based on feed-in tariff and green certificates. As a matter of fact, in Belgium the selling price is stable at 112€/MWh due to the existence of a long-term contract to be in place for the next 10 years. A new tax for wind generators was approved within 2012 implying the payment of 0,54€/MW, which was considered to stay for the next period of time.

5.9 Brazil

In Brazil the type of agreement lays on the long-term contract option. These programs provide long-term visibility to sell the electricity produced for 20 years. The risk is reduced by stable and visible cash-flow generation throughout the projects' life.

The price per MW accrues an expected load factor adjustment and it is also linked with an inflation update, monthly performed. For the sake of simplicity and not being public the adjustment performed (it is only known that it holds a negative correlation between both), the inflation was used to update the price of the electricity in Real as currency.

5.10 Poland

In Poland, there is the option to choose between a spot price and a pre-defined price. EDP R is under the first segment of pricing scheme therefore in 2012 the price paid was historically low, at 102 €. The market price plus the green certificates or a regulated electricity price (PLN201.4/MWh for 2013). And also the possibility of negotiating long term power purchase agreements.

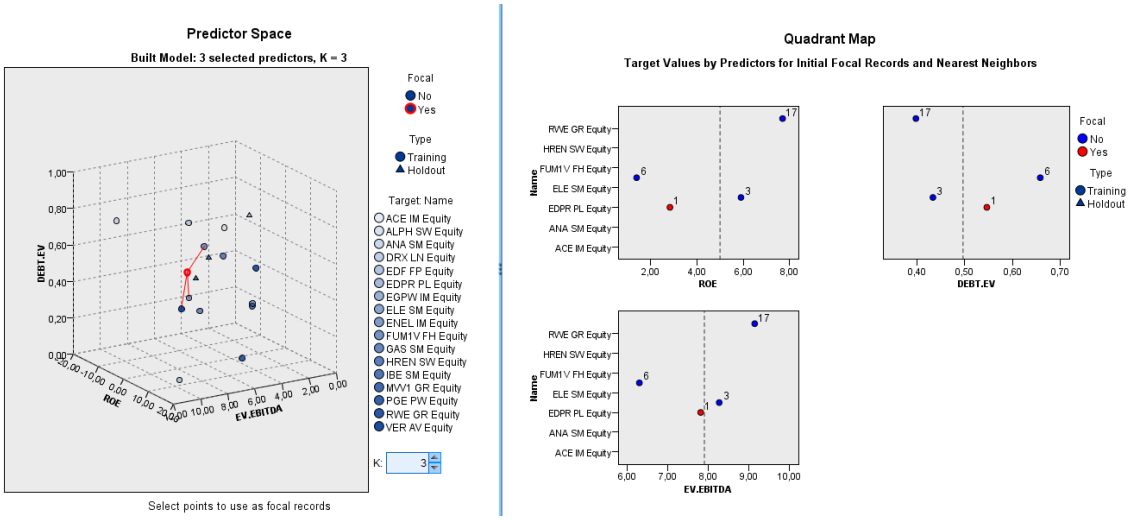
The driver used for the price of 2012 to be applied thereafter is the inflation in Poland; it is the best driver in terms of prediction of a market. The ideal was to confront the demand for electricity but the supply of wind type is not public information to check if that is any match.

5.11 Romania

Romania is the one country holding not only a wind project but also a solar one. Hence, the two prices regulation had to be studied. The type of payment is about market price plus green certificate, where for wind is 2 per MWh produced until 2017 (assumed to continue after the explicit period) and for Solar the remuneration if of 6 green certificates for each MWh for the next 15 years. The green certificates are being traded as end of 2012 between a floor and cap price of €28.9 and €58.8 boundaries, nevertheless the value per certificate (€68,55) of 2012 was assumed to be updated as time goes by

The prices are legally defined as being updated with Eurozone inflation, which reduces the exposure to the specific risk of the country.

6. Cluster Analysis of EDP R Peers



7. Debt/EV ratio in EDP R Peers

Company	Debt/EV
EDP Renováveis	53%
Iberdrola	66%
ENEL Green Power	43%
Acciona	82%
Endesa	37%
ENEL	66%
Gas Natural	67%
MVV Energie	54%
PGE	6%
Romande Energie Holding	14%
Acea	80%
Fortum Oyj	41%
RWE	56%
EDF	89%
Drax Group	5%
Alpiq Holding	70%
Verbund	40%
Average	51%
Median	54%

8. Deutsche Bank Analyst TGR forecast (7th March 2013)

Deutsche Bank Equity Research	
TGR	estimations of inflation
Portugal	1,3%
Spain	1,0%
UK	2,0%
US	2,0%
Brazil	4,5%
Spain	1,6%
UK	2,0%
other BRICS	2,0%

9. EDP R Valuation: WACC

Cost of Capital Assumptions	North America	Europe	Brazil
Market Risk Premium	5%	5%	5%
Beta Equity (Bloomberg)	1,16	1,16	1,16
Risk free	1,75%	1,42%	1,75%
Default Spread for Region	0,00%	2,61%	2,63%
Re (w risk premium)	8%	12%	13%
Rd (historical EDP data)	5,3%	5,3%	5,3%
Rd(1-t)	3,3%	3,30%	3,493%
D/V (31 Dec 2012)	51,1%	51,1%	51,1%
D/E (31 Dec 2012)	1,112	1,112	1,112
Marginal Tax Rate	37,7%	30,0%	34,0%
% of Production Tax Credit	11,3%	na	na
Return of Tax Equity Investors	9%	na	na
WACC	**5,7%**	**7,6%**	**7,9%**

10.EDP Renováveis Valuation Output

10.1 Profit & Loss

Consolidated Income Statement (€m)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Electricity sales and other	520,2	642	840,6	957,2	1.157,80	1400,43	1529,70	1774,97	1976,52	2260,52	2555,13	2719,65	2884,08
Income from institutional partnerships	61,2	82,7	107	111,6	127,4	145,50	145,50	172,50	172,50	198,48	198,48	224,46	224,46
Revenues	581,4	724,7	947,6	1.068,80	1.285,10	1545,92	1675,20	1947,47	2149,02	2458,99	2753,61	2944,11	3108,54
Other operating income	28,3	42,6	73	84,5	63,1	76,32	83,37	96,74	107,72	123,20	139,25	148,22	157,18
Supplies and services	-106,9	-148,3	-196,2	-225,1	-261,8	-292,93	-320,96	-374,97	-416,47	-478,91	-550,35	-595,57	-640,08
Personnel costs	-38,1	-42,5	-54,8	-60,8	-62,7	-70,16	-76,87	-89,80	-99,74	-114,70	-131,81	-142,64	-153,30
Other operating costs	-26,8	-33,8	-56,9	-66,7	-86,2	-103,70	-112,37	-130,63	-144,15	-164,94	-184,70	-197,48	-208,51
Operating costs	-143,5	-182,1	-234,9	-268,1	-347,6	-363,09	-397,83	-464,78	-516,21	-593,60	-682,16	-738,20	-793,38
EBITDA	**437,9**	**542,5**	**712,7**	**800,7**	**937,6**	**1182,83**	**1277,37**	**1482,69**	**1632,81**	**1865,39**	**2071,45**	**2205,90**	**2315,16**
EBITDA/Revenues	*75%*	*75%*	*75%*	*75%*	*73%*	*77%*	*76%*	*76%*	*76%*	*76%*	*75%*	*75%*	*74%*
Provisions	0,8	0,2	0,2	0,3	0	0,14	0,15	0,18	0,20	0,23	0,26	0,27	0,29
Depreciation and amortisation	-207,8	-314,3	-434,4	-468,5	-502,7	-584,75	-614,45	-685,64	-724,72	-795,48	-873,64	-913,00	-1032,12
Amortisation of deferred income (government grants)	0,7	2,4	11,4	15	15,2	18,29	19,81	23,03	25,42	29,08	32,57	34,82	36,77
EBIT	**231,6**	**230,8**	**289,9**	**347,5**	**450,1**	**616,50**	**682,89**	**820,26**	**933,70**	**1099,22**	**1230,64**	**1328,00**	**1320,09**
Financial income/(expense)	-77	-72	-174	-244	-278	-278,04	-278,08	-278,13	-278,17	-278,21	-278,25	-278,29	-278,34
Income/(losses) from group and associated companies	4,4	3,9	5	4,8	6,8	8,29	10,11	12,33	15,04	18,35	22,37	27,29	33,28
			28%	-4%	42%								
Pre-tax profit	161,2	162,5	120,8	118,7	182,1	346,75	414,92	554,47	670,58	839,35	974,76	1076,99	1075,03
Income taxes	-49	-44,8	-37,8	-28	-46	-148,07	-144,06	-204,62	-251,59	-321,74	-380,35	-423,51	-425,12
Profit of the period	**112,2**	**117,8**	**83**	**90,6**	**136**	**198,69**	**270,86**	**349,85**	**418,99**	**517,61**	**594,41**	**653,48**	**649,92**

10.2 Balance Sheet

Assets (in m€)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Property, plant and equipment, net	8.635	9.982	10.455	10.537	11483	12395	13737	15140	15868	16588	17292	18012
Intangible assets and goodwill, net	1.336	1.367	1.334	1.327	1240	1158	1082	1011	945	883	825	814
Financial Investments, net	60	64	61	57	61	60	59	60	59	59	60	59
Deferred tax asset	28	39	56	89	107,29	127,10	150,13	175,55	204,64	237,21	272,03	308,80
Inventories	11	24	24	16	17	18	21	22	25	26	26	26
Accounts receivable - trade, net	106	144	146	180	205	208	231	260	289	314	328	341
Accounts receivable - other, net	637	757	750	849	965	983	1092	1228	1362	1479	1548	1607
Financial assets at fair value through profit and loss	37	36	0	0	0	0	0	0	0	0	0	0
Assets held for sale	-	-	-	0	0	0	0	0	0	0	0	0
Cash and cash equivalents	444	424	220	246	444	707	797	1374	1008	1007	513	588
Total Assets	**11.294**	**12.835**	**13.045**	**13.302**	**13.634**	**14.243**	**15.575**	**16.523**	**17.744**	**18.579**	**19.838**	**20.581**
Share capital + share premium	4.914	4.914	4.914	4.914	4.914	4.914	4.914	4.914	4.914	4.914	4.914	4.914
Reserves and retained earnings	192	274	325	384	405,27	424,59	452,48	487,48	532,85	586,52	646,47	700,16
Consolidated net profit attrib. to equity holders of the parent	114	80	89	126	212,74	193,19	278,83	350,08	453,65	536,74	599,47	536,89
Non-controlling interests	107	126	127	325	341,34	356,18	377,59	404,48	439,32	480,54	526,58	567,81
Total Equity	**5.328**	**5.394**	**5.454**	**5.749**	**5.873**	**5.888**	**6.023**	**6.156**	**6.340**	**6.518**	**6.687**	**6.719**
Financial Debt	2.673	3.534	3.826	3.874	4025,0	4181,8	4344,8	4514,1	4690,0	4872,7	5062,6	5259,9
Institutional Partnership	920	1.009	1.011	942	942	942	1.242	1.242	1.530	1.530	1.818	1.818
Provisions	67	54	58	64	59	59	59	59	59	59	59	59
Deferred Tax liability	343	372	381	381	381	381	502	502	619	619	735	735
Deferred revenues from institutional partnerships	434	635	773	738	811	883	970	1056	1155	1254	1367	1479
Accounts payable - net	1.529	1.839	1.542	1.555	1.543	1.908	2.435	2.994	3.352	3.727	4.111	4.511
Total Liabilities	**5.966**	**7.442**	**7.591**	**7.553**	**7.761**	**8.355**	**9.552**	**10.366**	**11.404**	**12.061**	**13.152**	**13.862**
Total Equity and Liabilities	**11.294**	**12.835**	**13.045**	**13.302**	**13.634**	**14.243**	**15.575**	**16.523**	**17.744**	**18.579**	**19.838**	**20.581**

10.3 Investment Plan and EBITDA Forecast (Under Construction Red Colors represent each one project)

USA	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (PPA)	1,89	2,46	2,66	2,87	2,87	2,87	3,21	3,31	3,63	4,28	4,61	4,93
Installed Capacity (merchant)	0,74	0,76	0,76	0,76	0,76	0,76	0,76	0,664	0,664	0,664	0,664	0,664
Total Installed Capacity	**2,62**	**3,22**	**3,42**	**3,64**	**3,63**	**3,63**	**3,97**	**3,97**	**4,30**	**4,95**	**5,27**	**5,60**
Under Construction (GW)	0,60	0,20	0,22	0,00	0,68	0,68	0,650	0,650	0,650	0,650	0,79	0,79
Load Factors	32%	32%	33%	33%	32%	32%	32%	32%	32%	32%	32%	32%
Average Price PPA	52,39	53,88	50,79	51,67	52,62	53,52	54,52	55,62	56,85	58,13	59,45	60,79
Average Price Merchant	29,81	31,06	30,12	31,15	31,72	32,27	32,87	33,54	34,27	35,05	35,84	36,65
MW under PTC	2.024	2.024	2.123	2.123,0	2.123,0	2.123	2.798	2.798	3.448	3.448	4.097	4.097
MW under cash grant flip	202	401	500	500	500	500	500	500	500	500	500	500
MW under cash grant	398	799	799	1.014	1.014	1.014	1.014	1.014	1.014	1.014	1.014	1.014
Output (GWh)	5905	7689	9330	9937	10155,1	10155,1	11098,2	11098,2	12005,7	13820,8	14728,3	15635,8
Sales (in M$)	397,6	506,4	577	620,4	489,96	498,35	559,12	576,36	640,61	760,62	831,78	905,78
Costs (in M$)	99,6	124,1	200,9	212,2	154,664	157,314	176,497	181,936	202,218	240,102	262,566	285,923
EBITDA Margin	75%	76%	65%	66%	68%	68%	68%	68%	68%	68%	68%	68%
Income from Institutional Partnerships (in M$)	114,89	141,86	155,36	163,62	145,50	145,50	172,50	172,50	198,48	198,48	224,46	224,46

Canada	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)							0,03	0,03	0,03	0,03	0,03	0,03
Under Construction (GW)				0,03	0,03	0,03						
Load Factors							30%	30%	30%	30%	30%	30%
Average Price ($)				135	137,01	139,48	142,18	145,06	147,99	150,98	154,04	157,15
Output (GWh)							77,76	77,76	77,76	77,76	77,76	77,76
Sales (in M$)							11,06	11,28	11,51	11,74	11,98	12,22
Costs (in M$)							3,49	3,56	3,63	3,71	3,78	3,86
EBITDA Margin							68%	68%	68%	68%	68%	68%

Brazil	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	0,01	0,01	0,08	0,08	0,08	0,16	0,23	0,32	0,41	0,50	0,59	0,68
Under Construction (GW)	-	-	-	0,15	0,15	0,0897	0,0897	0,0897	0,0897	0,0897	0,0897	0,0897
Load Factors	22%	26%	35%	31%	31%	31%	31%	31%	31%	31%	31%	31%
Average Price (€)	262,51	254,43	278,41	286,39	303,95	318,33	332,66	347,62	363,27	379,62	379,62	379,62
Output (GWh)	26	31	170	231	221,96	415,32	608,67	846,26	1083,85	1321,44	1559,03	1796,62
Sales (in M€)	6,14	7,51	45,28	62,09	67,47	132,21	202,48	294,18	393,73	501,64	591,83	682,02
Costs (in M€)	2,70	8,56	14,80	20,56	22,20	43,50	66,62	96,79	129,54	165,05	194,72	224,40
EBITDA Margin	56%	-	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%

Portugal	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	0,60	0,60	0,61	0,62	0,62	0,70	0,79	0,79	0,79	0,79	0,79	0,79
Under Construction (GW)	-	-	-		0,09	0,09	0,01	0,01				
Load Factors	28%	29%	27%	27%	28%	28%	28%	28%	28%	28%	28%	28%
Average Price	94,46	93,82	98,65	101,82	102,54	103,60	105,19	106,74	108,37	110,01	110,01	110,01
Output (GWh)	1.275	1.472	1.391	1.444	1478,26	1682,58	1886,89	1886,89	1908,52	1908,52	1897,98	1897,98
Sales	123,12	140,25	138,58	149,33	151,58	174,31	198,49	201,41	206,83	209,95	208,79	208,79
Costs	21,47	24,57	27,83	30,67	29,38	33,78	38,47	39,03	40,08	40,69	40,46	40,46
EBITDA Margin	83%	82%	80%	79%	81%	81%	81%	81%	81%	81%	81%	81%

Spain	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	1,86	2,05	2,20	2,31	2,31	2,31	2,35	2,39	2,51	2,62	2,62	2,62
Under Construction (GW)	0,19	0,15	0,11	0	0,08	0,08	0,23	0,23				
Load Factors	26,17%	27,22%	25,31%	26,78%	26%	26%	26%	26%	26%	26%	26%	26%
Average Price (€)	84,04	79,13	82,53	87,71	81,20	82,42	83,66	84,82	86,08	87,36	87,36	87,36
Output (GWh)	3274,604	4355,306	4583,674	5105,571	5277,711	5277,711	5370,225	5462,738	5723,147	5983,556	5983,56	5983,56
Sales (in M€)	273,30	343,52	370,26	445,02	428,55	435,00	449,25	463,33	492,64	522,73	522,73	522,73
Costs (in M€)	48,29	71,52	84,41	100,90	94,70	96,12	99,27	102,38	108,86	115,51	115,51	115,51
EBITDA Margin	82%	79%	77%	77%	78%	78%	78%	78%	78%	78%	78%	78%

France	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	0,220	0,284	0,306	0,31	0,31	0,31	0,45	0,46	0,55	0,63	0,63	0,63
Under Construction (GW)	0,064	0,022	0,008	0	0,03	0,03	0,18	0,18				
Load Factors	23%	23%	23%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Average Price (€)	86,62	83,90	86,80	88,84	90,24	91,55	92,90	94,39	96,02	97,78	97,78	97,78
Output (GWh)	346	489	589	693	695,09	695,09	986,91	1014,59	1208,38	1402,17	1402,17	1402,17
Sales (in M€)	29,98	41,00	51,10	61,55	62,72	63,64	91,68	95,77	116,03	137,11	137,11	137,11
Costs (in M€)	9,300	3,703	12,998	3,669	8,454	8,577	12,357	12,907	15,638	18,478	18,48	18,48
EBITDA Margin	69%	91%	75%	94%	87%	87%	87%	87%	87%	87%	87%	87%

Italy	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	0,00	0,00	0,00	0,04	0,04	0,04	0,04	0,04	0,04	0,04	0,04	0,04
Under Construction (GW)	-	-	0,04	-	0,03	0,03	0,148	0,148				
Load Factors	-	-	-	-	29%	29%	29%	29%	29%	29%	29%	29%
Average Price	-	-	-	77,05	158,88	160,01	161,66	163,56	165,66	167,97	167,97	167,97
Output (GWh)	0	0	0	0	100,22	100,22	100,22	100,22	100,22	100,22	100,22	100,22
Sales					15,92	16,04	16,20	16,39	16,60	16,83	16,83	16,83
Costs	0,00	0,00	0,00	0,00	5,37	5,41	5,47	5,53	5,60	5,68	5,68	5,68
EBITDA Margin	0%	0%	0%	0%	66%	66%	66%	66%	66%	66%	66%	66%

Belgium	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	0,057	0,057	0,057	0,057	0,057	0,071	0,145	0,152	0,152	0,152	0,15	0,15
Under Construction (GW)	-	-	-		0,014	0,014						
Load Factors	23%	23%	23%	25%	24%	24%	24%	24%	24%	24%	24%	24%
Average Price	103,11	112,00	112,00	112,00	113,39	114,39	115,20	115,99	116,79	117,63	117,63	117,63
Output (GWh)	79	107	117	123	116,98	145,71	297,14	311,50	311,50	311,50	311,50	311,50
Sales	8,19	11,94	13,07	13,75	13,26	16,67	34,23	36,13	36,38	36,64	36,64	36,64
Costs		1,08	3,32	0,82	1,79	2,25	4,61	4,87	4,90	4,94	4,94	4,94
EBITDA Margin	-	91%	75%	94%	87%	87%	87%	87%	87%	87%	87%	87%

Romania(Wind)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	-	0,09	0,29	0,35	0,35	0,36	0,38	0,41	0,41	0,42	0,44	0,44
Under Construction (GW)	-	-	-	0,028	0,028			0,03	0,03			
Load Factors	-	-	16%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Average Price	-	-	89,11	137,11	139,48	141,59	143,66	145,90	148,31	150,83	150,83	150,83
Output (GWh)	-	15	245	476	630,84	656,09	681,33	735,44	735,44	762,49	789,55	789,55
Sales	-	-	21,81	65,32	87,99	92,89	97,88	107,30	109,07	115,00	119,08	119,08
Costs	0,00	-	5,55	3,89	11,86	12,52	13,19	14,46	14,70	15,50	16,05	16,05
EBITDA Margin	69%	91%	75%	94%	87%	87%	87%	87%	87%	87%	87%	87%

Romania(Solar)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	-	-	-	0	0,039	0,039	0,039	0,039	0,039	0,039	0,04	0,04
Under Construction (GW)	-	-	-	0,039	-	-	-	-	-	-		
Load Factors	-	-	-	15%	15%	15%	15%	15%	15%	15%	15%	15%
Average Price	-	-	-	411,32	418,44	424,77	430,99	437,70	444,93	452,48	452,48	452,48
Output (GWh)	-	-	-	-	50,54	50,54	50,54	50,54	50,54	50,54	50,54	50,54
Sales	-	-	-	0	21,15	21,47	21,78	22,12	22,49	22,87	22,87	22,87
Costs	-	-	0,00	0	5,56	5,65	5,73	5,82	5,91	6,01	6,01	6,01
EBITDA Margin	-	-	-	-	74%	74%	74%	74%	74%	74%	74%	74%

Poland	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Installed Capacity (GW)	-	0,12	0,19	0,19	0,26	0,32	0,37	0,59	0,81	0,81	0,81	0,81
Under Construction (GW)	-	-	-	0,13	0,094	0,094	0,441	0,441				
Load Factors	-	27%	27%	26%	27%	27%	27%	27%	27%	27%	27%	27%
Average Price	-	111,54	108,84	102,16	104,05	106,13	108,52	111,23	114,01	116,86	116,86	116,86
Output (GWh)	-	194	376	435	594,10	745,53	855,03	1368,75	1882,47	1882,47	1882,47	1882,47
Sales	-	21,62	40,95	44,45	61,82	79,12	92,79	152,25	214,63	219,99	219,99	219,99
Costs	0,00	0,00	0,00	0,00	8,33	10,66	12,51	20,52	28,93	29,65	29,65	29,65
EBITDA Margin	69%	91%	75%	94%	87%	87%	87%	87%	87%	87%	87%	87%

10.4 WACC Valuation Output

Europe	2013	2014	2015	2016	2017	2018	2019	2020
EBITDA	661,98	708,35	794,65	872,88	973,48	1027,83	1030,42	1030,42
Depreciations	-318,19	-329,21	-355,91	-376,79	-406,54	-420,81	-420,54	-419,27
EBIT	343,78	379,14	438,75	496,08	566,93	607,01	609,88	611,15
EBIT(1-t)	240,65	265,40	307,12	347,26	396,85	424,91	426,91	427,80
Depreciations	289,12	302,05	330,53	353,08	384,39	400,12	401,21	401,21
- Investmetn in NWC	11,31	11,31	-156,68	-3,59	246,67	19,03	-0,27	-0,33
-CapEx	-450,95	-442,59	-952,80	-1001,53	-308,75	-274,60	-275,29	-275,24
FCFF	90,13	136,18	-471,83	-304,78	719,17	569,46	552,56	553,44
NPV	83,73	117,51	-378,24	-226,96	497,50	365,95	329,86	306,91
TV	4864,2							
EV	5960,5							

North America	2013	2014	2015	2016	2017	2018	2019	2020
EBITDA	364,51	368,87	426,63	435,68	488,83	551,22	607,96	646,48
Depreciations	-293,05	-291,14	-316,05	-314,38	-336,42	-382,14	-404,37	-426,69
EBIT	71,46	77,73	110,58	121,30	152,42	169,08	203,59	219,79
EBIT(1-t)	44,50	48,40	68,86	75,53	94,91	105,29	126,78	136,86
Depreciations	263,98	263,98	290,68	290,68	314,27	361,45	385,04	408,63
- Investmetn in NWC	-8,91	-8,91	-174,55	-13,31	226,42	13,34	7,47	6,36
-CapEx	-388,88	-393,39	-305,68	-310,19	-321,68	-339,90	-345,12	-356,95
FCFF	-89,31	-89,93	-120,69	42,71	313,92	140,17	174,16	194,91
NPV	-82,66	-77,04	-95,70	31,34	213,26	88,14	101,36	104,99
TV	1702,17							
EV	1985,85							

Brazil & Others	2013	2014	2015	2016	2017	2018	2019	2020
EBITDA	16,74	32,81	50,24	73,00	97,70	124,48	146,86	169,24
Depreciations	-35,16	-38,55	-42,07	-46,92	-51,88	-56,94	-62,09	-60,82
EBIT	-18,42	-5,74	8,17	26,08	45,83	67,54	84,77	108,42
EBIT(1-t)	-12,16	-3,79	5,40	17,21	30,25	44,58	55,95	71,56
Depreciations	35,16	38,55	42,07	46,92	51,88	56,94	62,09	60,82
- Investmetn in NWC	11,80	-7,41	2,62	2,97	3,28	4,13	-3,48	2,69
-CapEx	-106,57	-73,55	-80,13	-87,68	-95,37	-103,20	-81,83	-85,50
FCFF	-71,76	-46,19	-30,05	-20,58	-9,97	2,45	32,72	49,57
NPV	-65,10	-38,01	-22,43	-13,93	-6,12	1,37	16,54	22,72
TV	389,29							
EV	284,32							

10.2 APV Output Valuation

Free Cash Flow	2013	2014	2015	2016	2017	2018	2019	2020
Europe	90,13	136,18	-471,83	-304,78	719,17	569,46	552,56	553,44
Discount Factor	1,08	1,16	1,24	1,34	1,44	1,55	1,67	1,79
Discounted Cash Flows	83,79	117,69	- 379,07	-227,63	499,33	367,57	331,56	308,72
TV	4.954,17							
V Unlevered	**6.038,00**							
USA	-89,31	-89,93	- 120,69	42,71	313,92	140,17	174,16	194,91
Discount Factor	1,08	1,16	1,24	1,34	1,44	1,55	1,67	1,79
Discounted Cash Flows	- 83,03	- 77,72	- 96,97	31,90	217,96	90,48	104,50	108,72
TV	1.806,57							
V Unlevered	2.083,75							
Brazil	-71,76	- 46,19	- 30,05	- 20,58	- 9,97	2,45	32,72	49,57
Discount Factor	1,10	1,21	1,33	1,47	1,61	1,78	1,96	2,15
Discounted Cash Flows	-65,20	- 38,13	- 22,54	- 14,03	- 6,17	1,38	16,73	23,02
TV	406,50							
V Unlevered	298,30							

Value (in million euros)	APV
Vu Europe	6.038,00
Vu USA	2.083,75
Vu Brazil	298,30
Total V Unlevered	**8.420,05**
Tax Shields	1.332,50
Bankruptcy Costs	2.994,62
Enterprise Value	**8.160,18**
Net Debt	3.355,00
Minority Interests	325,00
Equity Value	**4.480,18**
Price Per Share	5,136

11. Martifer Valuation: Country Risk Premium per segment

11.1 Metallic Constructions (Source: Damodaran)

Country	2013	2014	2015	Country Risk Premium	Volatility Factor
Portugal	13%	13%	9%	0,05	0,69
Spain	4%	4%	9%	0,03	0,95
France	23%	23%	7%	-	-
UK	6%	6%	10%	-	-
Romania	2%	2%	8%	0,03	1,40
Poland	1%	1%	9%	0,02	1,60
Brazil	27%	27%	13%	0,03	1,73
Angola	5%	5%	17%	0,05	1,50
Australia	1%	1%	4%	-	-
Peru	1%	1%	1%	0,03	2,17
Saudi Arabia	17%	17%	4%	0,01	1,50
Others	0%	0%	10%	0,02	1,50
Total Country Risk Premium (weighted)	1,99%	1,99%	2,54%		

11.2 Solar Segment (Source: Damodaran)

Country	2013	2014	Country Risk Premium	Volatility Factor
Portugal	18%	5%	0,05	0,69
Canada	7%	7%	-	-
United States	7%	15%	-	-
Italy	1%	0%	0,02	1,96
Romania	3%	3%	0,03	1,40
Greece	2%	0%	0,11	0,84
UK	13%	0%	-	-
Belgium	0%	0%	0,01	0,97
France	5%	0%	-	-
Ukraine	6%	2,5%	0,08	1,95
Spain	2%	2,5%	0,03	0,95
Mexico	33%	20%	0,02	1,63
Brazil	2%	20%	0,05	0,69
India	0%	10%	-	-
Total Country Risk Premium (weighted)	2,5%	1,9%		

12. Martifer Solar Parks

Type	Country	Name	Year Started	Capacity	Stake	Tariff type	Tariff before	Cost	Margin	Obs
Solar	Spain	Eurocabs	2009	7,23	100%	Feed-in	300,2	157,0	91,1%	Info released by Martifer
		Borox	2009	4,83	38%	Feed-in	300,2	157,0	91,1%	with Spanish Law
		Moratalla	2009	4	49%	Feed-in	300,2	157,0	91,1%	

13. Martifer Group Valuation Output

13.1 P&L

(In M€)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenues	587,23	531,85	481,39	521,17	541,26	562,18	586,07	609,95	635,00	649,79	665,04
Growth (YoY,%)	15%	-9%	-9%	8%	4%	4%	4%	4%	4%	4%	4%
Other Revenue	14,90	18,26	9,99								
Other Operating Income	2,76	3,80	-4,20								
Revenues	**604,89**	**553,92**	**487,18**	**521,17**	**541,26**	**562,18**	**586,07**	**609,95**	**635,00**	**649,79**	**665,04**
Growth (YoY,%)	-2%	-8%	-12%	7%	4%	4%	4%	4%	4%	4%	4%
Cost Of Materials	-240,72	-286,81	-222,67	-221,86	-224,46	-229,00	-230,24	-233,55	-236,31	-236,60	-238,27
Outsourcing	-142,79	-101,67	-87,33	-104,65	-108,28	-111,97	-116,14	-120,18	-124,28	-127,17	-130,15
Salaries Wages and Employee Benefits	-77,63	-78,15	-84,80	-76,90	-79,57	-82,28	-85,34	-88,30	-91,31	-93,44	-95,63
Other Operating Expenses (FSE)	-84,77	-78,33	-88,43	-80,39	-83,18	-86,01	-89,21	-92,31	-95,46	-97,68	-99,97
Total Costs	**-545,92**	**-544,97**	**-483,23**	**-483,79**	**-495,49**	**-509,26**	**-520,94**	**-534,35**	**-547,35**	**-554,89**	**-564,02**
Operating Costs	**-545,92**	**-544,97**	**-483,23**	**-483,79**	**-495,49**	**-509,26**	**-520,94**	**-534,35**	**-547,35**	**-554,89**	**-564,02**
EBITDA	**58,97**	**8,95**	**3,95**	**37,38**	**45,77**	**52,92**	**65,13**	**75,60**	**87,65**	**94,90**	**101,02**
Growth (YoY,%)	-12%	-85%	-56%	846%	22%	16%	23%	16%	16%	17%	17%
% of Revenues	10%	2%	1%	7%	8%	9%	11%	12%	14%	14%	14%
Depreciation and Amortization	-26,10	-18,25	-17,47	-14,24	-14,91	-15,66	-16,48	-17,30	-18,16	-18,92	-19,13
EBIT (Op Income)	**-21,00**	**-19,45**	**-15,76**	**23,13**	**30,86**	**37,26**	**48,65**	**58,30**	**69,49**	**75,97**	**81,89**
Total Financial Gains	40,30	32,20	19,04	30,51	30,95	31,39	31,83	32,28	32,74	33,21	33,68
Total Financial Losses	-57,35	-55,95	-53,49	-42,52	-39,04	-38,94	-40,97	-43,22	-45,29	-48,28	-49,66
Equity In Earnings of Affiliate/Joint Ventures	-3,85	-2,61	-1,81	-2,21	-0,14	0,00	0,00	0,00	0,00	0,00	0,00
Financial Expenses	**-20,90**	**-26,35**	**-36,26**	**-14,21**	**-8,23**	**-7,55**	**-9,14**	**-10,93**	**-12,54**	**-15,07**	**-15,98**
Income Before Income Taxes	**-41,90**	**-45,80**	**-52,02**	**8,92**	**22,63**	**29,71**	**39,51**	**47,37**	**56,95**	**60,90**	**65,91**
Income Tax Expense (Benefit)	-10,50	-0,71	-2,28	2,36	5,996	7,87	10,47	12,55	15,09	16,14	17,47
Deferred Tax				-2,36	-5,996	0,00	0,00	15,30	0,00	0,00	0
Net Income	**-52,40**	**-46,52**	**-54,30**	**8,92**	**22,63**	**21,84**	**29,04**	**34,82**	**41,86**	**44,76**	**48,45**

13.2 Balance Sheet

(in '000 €)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Goodwill	20,69	18,14	18,95	18,95	18,95	18,95	18,95	18,95	18,95	18,95	18,95
Intangible Assets	28,66	40,00	39,44	38,89	38,35	37,81	37,28	36,76	36,25	35,74	35,24
Property Plant & Equipment - Net	367,48	285,08	273,37	302,53	332,56	363,24	394,69	426,96	460,08	494,46	529,99
Trade Debtors And Receivables (Long-Term)	83,17	135,58	140,17	153,83	159,71	165,83	172,83	179,83	187,17	191,42	195,79
Total Non-Current Assets	**553,57**	**524,61**	**519,47**	**557,50**	**586,80**	**615,22**	**642,66**	**696,72**	**736,67**	**774,78**	**814,20**
Inventories	56,37	31,15	24,39	22,88	23,15	23,62	23,74	24,09	24,37	23,91	24,57
Accounts Receivable - Trade	218,88	191,11	150,36	153,83	159,71	165,83	172,83	179,83	187,17	191,42	195,79
Other Receivables (Short-Term)	34,39	43,07	62,27	63,71	65,19	66,69	68,23	69,81	71,43	73,08	74,77
Other Current Assets	165,39	128,12	125,72	118,65	124,38	120,17	128,95	145,75	161,16	184,79	214,56
Cash and Equivalents	76,67	77,89	38,02	67,55	29,65	57,70	102,33	133,86	197,70	282,22	360,34
Income Tax	-	2,37	2,69	- 2,36	6,00	7,87	10,47	12,55	15,09	16,14	17,47
Assets Held For Sale	-	-	35,11	35,11	35,11	35,11	35,11	35,11	35,11	35,11	35,11
Total Current Assets	**572,48**	**493,37**	**456,90**	**478,96**	**462,76**	**496,58**	**561,27**	**620,59**	**711,62**	**826,26**	**942,21**
Total Assets	**1.126,05**	**1.017,98**	**976,38**	**1.036,46**	**1.049,57**	**1.111,80**	**1.203,93**	**1.317,32**	**1.448,28**	**1.601,04**	**1.756,40**
Common Stock	50,00	50,00	50,00	50,00	50,00	50,00	50,00	50,00	50,00	50,00	50,00
Additional Paid In Capital	-	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50
Other Reserve	314,15	50,44	- 1,50	- 0,37	0,72	2,18	3,92	6,01	8,25	10,67	10,67
Net Income/Loss (Stockholders Equity)	- 54,89	- 48,59	- 55,85	- 46,93	- 25,44	- 4,69	22,89	55,97	95,74	138,26	184,28
Total Shareholders' Equity	**309,30**	**235,93**	**176,28**	**189,20**	**211,79**	**233,98**	**263,31**	**298,48**	**340,48**	**385,43**	**431,45**
Long Term Debt	167,44	215,44	164,90	187,18	171,88	171,43	180,39	190,26	199,37	212,56	218,62
Long Term Capital Lease Obligations	31,40	17,90	12,17	23,08	21,19	21,13	22,24	23,46	24,58	26,20	26,95
Other Noncurrent Liabilities	11,52	17,46	22,07	23,86	25,80	27,90	30,16	32,61	35,26	38,13	41,22
Provisions For Liabilities And Charges & Other	16,59	13,38	12,52	12,19	12,49	12,83	13,13	13,46	13,79	13,79	14,21
Total Noncurrent Liabilities	**237,28**	**268,04**	**215,24**	**249,89**	**234,93**	**236,88**	**245,91**	**259,79**	**273,00**	**290,69**	**301,01**
Short-Term Borrowings	212,65	167,21	229,03	226,70	208,16	207,62	218,47	230,43	241,46	257,44	264,77
Short-Term Capital Lease Obligations	8,57	7,21	8,59	8,45	7,76	7,74	8,15	8,59	9,00	9,60	9,87
Accounts Payable - Trade	197,53	202,29	165,01	160,66	164,55	169,12	173,00	177,45	181,77	184,27	187,30
Other Current Liabilities	43,88	66,75	80,23	99,65	123,75	153,69	190,87	237,05	294,40	365,62	454,07
Total Current Liabilities	**548,52**	**482,23**	**533,88**	**546,71**	**551,23**	**587,93**	**639,83**	**702,22**	**775,90**	**866,03**	**965,04**
Total Liabilities	**785,80**	**750,26**	**749,12**	**796,61**	**786,16**	**824,81**	**885,74**	**962,01**	**1.048,90**	**1.156,72**	**1.266,05**
Total Liabilities and Shareholders' Equity	1.126,09	1.017,98	976,38	1.036,46	1.049,57	1.111,80	1.203,93	1.317,32	1.448,28	1.601,04	1.756,40

13.3 EBTIDA Forecast by segment (in M€)

Revenues	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Metallic	348,1	240,2	250,3	259,77	272,34	288,212	305,9	323,09	341,32	344,55	347,8
Solar	220,8	293,2	230,8	243,32	249,82	253,825	259,0	264,51	270,17	280,54	291,3
Others	22,7	14,5	17,1	18,08	19,10	20,146	21,2	22,35	23,51	24,70	25,9

Costs	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Metallic	**331,8**	**260,3**	**274,90**	**249,38**	**259,83**	**273,00**	**287,33**	**300,59**	**314,02**	**316,98**	**319,98**
Cost Of Materials	157,94	123,91	130,86	118,71	123,68	129,95	136,77	143,08	149,47	150,89	152,31
Outsourcing	69,55	54,56	57,62	52,27	54,46	57,22	60,23	63,01	65,82	66,44	67,07
Salaries Wages and Employee Benefits	51,00	40,01	42,25	38,33	39,94	41,96	44,16	46,20	48,26	48,72	49,18
Other Operating Expenses (FSE)	53,31	41,82	44,17	40,07	41,75	43,86	46,17	48,30	50,45	50,93	51,41
Solar	**198,6**	**273,1**	**214,80**	**226,94**	**227,78**	**227,94**	**224,84**	**224,53**	**223,63**	**227,70**	**233,33**
Cost Of Materials	94,54	130,00	102,25	99,67	97,10	95,17	89,39	86,17	82,31	80,96	80,96
Outsourcing	41,63	57,25	45,02	50,78	52,13	52,97	54,04	55,20	56,38	58,54	60,79
Salaries Wages and Employee Benefits	30,53	41,98	33,02	37,40	38,40	39,01	39,80	40,66	41,53	43,12	44,77
Other Operating Expenses (FSE)	31,91	43,88	34,51	39,09	40,14	40,78	41,61	42,50	43,41	45,08	46,81
Others	**4,6**	**7,5**	**7,20**	**7,47**	**7,89**	**8,32**	**8,77**	**9,23**	**9,71**	**10,20**	**10,71**
Cost Of Materials	2,19	3,57	3,43	3,48	3,67	3,88	4,08	4,30	4,52	4,75	4,99
Outsourcing	0,96	1,57	1,51	1,60	1,69	1,78	1,87	1,97	2,07	2,18	2,29
Salaries Wages and Employee Benefits	0,71	1,15	1,11	1,17	1,24	1,30	1,37	1,45	1,52	1,60	1,68
Other Operating Expenses (FSE)	0,74	1,21	1,16	1,22	1,29	1,36	1,44	1,51	1,59	1,67	1,75

EBITDA	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Metallic	16,3	-20,1	-24,6	10,39	12,51	15,21	18,54	22,50	27,31	27,56	27,82
Solar	22,2	20,1	16	16,37	22,05	25,89	34,12	39,98	46,54	52,84	57,97
Others	18,1	7	9,9	10,61	11,21	11,83	12,46	13,12	13,80	14,50	15,22

13.4 APV Valuation Output (in M€)

EBTIDA	2013	2014	2015	2016	2017	2018	2019	2020
EBITDA Metallic	10,39	12,51	15,21	18,54	22,50	27,31	27,56	27,82
EBITDA Solar	16,37	22,05	25,89	34,12	39,98	46,54	48,33	50,18
EBITDA REDev	10,61	11,21	11,83	12,46	13,12	13,80	13,80	13,80
	37,38	45,77	52,92	65,13	75,60	87,90	89,69	91,80

Depreciation & Amortisations	2013	2014	2015	2016	2017	2018	2019	2020
Metallic Constructions	7,56	7,92	8,39	8,90	9,40	9,93	10,02	10,12
Solar	2,44	2,50	2,54	2,59	2,65	2,71	2,81	2,92
Others	4,25	4,49	4,73	4,99	5,25	5,52	6,09	6,09

Capex	2013	2014	2015	2016	2017	2018	2019	2020
Metallic Constructions	10,23	10,73	11,35	12,05	12,73	13,45	13,57	13,70
Solar	27,92	28,66	29,12	29,71	30,35	31,00	32,19	33,42
Others	5,26	5,55	5,86	6,17	6,50	6,84	7,54	7,54

Variation in NWC	2013	2014	2015	2016	2017	2018	2019	2020
Metallic Constructions	3,10	0,83	1,05	1,27	1,43	1,69	1,71	1,73
Solar	3,09	1,42	0,95	1,98	1,44	1,61	1,67	1,73
Others	-4,65	0,29	0,30	0,30	0,32	0,33	0,46	0,46

Metallic Constr.	2013	2014	2015	2016	2017	2018	2019	2020
EBIT	2,83	4,59	6,83	9,65	13,10	17,37	17,54	17,70
EBIT (1-t)	**2,08**	**3,37**	**5,02**	**7,09**	**9,63**	**12,77**	**12,89**	**13,01**
+Deprec	7,56	7,92	8,39	8,90	9,40	9,93	10,02	10,12
-Variation in NWC	-3,10	-0,83	-1,05	-1,27	-1,43	-1,69	-1,71	-1,73
-CapEx	-10,23	-10,73	-11,35	-12,05	-12,73	-13,45	-13,57	-13,70
FCFF	-3,69	-0,26	1,00	2,67	4,87	7,56	7,63	7,71
PV FCFF	-3,46	-0,23	0,81	2,03	3,45	5,00	4,71	4,44

Solar	2013	2014	2015	2016	2017	2018	2019	2020
EBIT	16,77	24,13	30,17	41,18	50,44	61,21	63,56	63,56
EBIT (1-t)	**12,32**	**17,74**	**22,17**	**30,26**	**37,07**	**44,99**	**46,72**	**46,72**
+Deprec	2,44	2,50	2,54	2,59	2,65	2,71	2,81	2,92
-Variation in NWC	-3,09	-1,42	-0,95	-1,98	-1,44	-1,61	-1,67	-1,73
-CapEx	-27,92	-28,66	-29,12	-29,71	-30,35	-31,00	-32,19	-33,42
FCFF	-16,24	-9,84	-5,36	1,16	7,93	15,09	15,67	16,27
PV FCFF	-15,25	-8,76	-4,50	0,92	5,92	10,64	10,42	10,21

Method	SOTP	Value Unlevered	Tax Shields	Costs of Financial Distress	Enterprise Value	Net Debt+Minority Interests	Equity Value
APV	Metallic	90,48	30,9	41,50	63,46	290,55	54,64
APV	Solar	497,53	29,49	257,36	281,73		
Multiple	Redev	92,29	-	-	92,29	86,50	5,79
	Total				437,48	377,05	60,43
						Price/share (€)	0,618

14. Merged Valuation Output without the synergies

14.1 P&L

(in M€)	2010	2011	2012	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Industry	587,23	531,85	481,39	521,17	541,26	562,18	586,07	609,95	635,00	649,79	665,04
Electricity	840,60	957,20	1.157,80	1.400,43	1.529,70	1.774,97	1.976,52	2.260,52	2.555,13	2.719,65	2.884,08
Income from institutional partnerships	107,00	111,60	127,40	145,50	145,50	172,50	172,50	198,48	198,48	224,46	224,46
Revenues	**1.534,83**	**1.600,65**	**1.766,59**	**2.067,09**	**2.216,46**	**2.509,65**	**2.735,09**	**3.068,94**	**3.388,61**	**3.593,89**	**3.773,58**
Other Operating Income	73,00	84,50	63,10	76,32	83,37	96,74	107,72	123,20	139,25	148,22	157,18
Cost Of Materials	- 436,92	- 511,91	- 484,47	- 514,79	- 545,42	- 603,97	- 646,71	- 712,46	- 786,66	- 832,17	- 878,35
Outsourcing	- 142,79	- 101,67	- 87,33	- 104,65	- 108,28	- 111,97	- 116,14	- 120,18	- 124,28	- 127,17	- 130,15
Salaries Wages and Employee Benefits	- 132,43	- 138,95	- 147,50	- 147,05	- 156,44	- 172,08	- 185,08	- 203,00	- 223,12	- 236,07	- 248,93
Other Operating Expenses (FSE)	- 141,67	- 145,03	- 174,63	- 184,08	- 195,55	- 216,64	- 233,36	- 257,25	- 280,16	- 295,16	- 308,48
Total Costs	**- 853,82**	**- 897,57**	**- 893,93**	**- 950,58**	**- 1.005,69**	**- 1.104,67**	**- 1.181,30**	**- 1.292,89**	**- 1.414,22**	**- 1.490,57**	**- 1.565,91**
EBITDA	**754,00**	**787,58**	**935,76**	**1.192,84**	**1.294,14**	**1.501,72**	**1.661,51**	**1.899,25**	**2.113,65**	**2.251,54**	**2.364,85**
Depreciations & Amortisations	- 460,50	- 486,75	- 520,17	- 599,00	- 629,36	- 701,30	- 741,20	- 812,78	- 891,80	- 931,92	- 1.051,25
Provisions	- 12,13	- 2,83	0,99	-	0,14	0,15	0,18	0,20	0,23	0,26	0,27
EBIT	**281,37**	**298,00**	**416,58**	**593,84**	**664,92**	**800,57**	**920,48**	**1.086,67**	**1.222,08**	**1.319,87**	**1.313,87**
Financial Gains (Losses)	- 191,05	- 267,74	- 312,45	- 290,05	- 286,18	- 285,68	- 287,31	- 289,14	- 290,79	- 293,37	- 294,31
Equity In Earnings of Affiliate/Joint Ventures	1,15	2,19	4,99	6,08	9,98	12,33	15,04	18,35	22,37	27,29	33,28
Income Before Taxes	78,90	72,90	130,08	355,67	437,54	584,18	710,09	886,73	1.031,71	1.137,89	1.140,95
Taxes Paid	- 27,30	- 27,29	- 43,73	- 150,43	- 150,05	- 212,49	- 262,06	- 334,30	- 395,44	- 439,65	- 442,58
Net Income	30,60	44,08	81,70	205,24	287,49	371,69	448,03	552,43	636,27	698,25	698,36

14.2 Balance Sheet

(In '000€)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Goodwill	20,69	18,14	18,95	18,95	18,95	18,95	18,95	18,95	18,95	18,95	18,95
Intangible Assets	1.395,66	1.374,00	1.366,44	1.278,67	1.196,65	1.119,98	1.048,33	981,36	918,76	860,25	849,52
Property Plant & Equipment – Net	10.349,48	10.740,08	10.810,37	11.785,92	12.727,56	14.100,10	15.534,59	16.294,67	17.047,60	17.786,42	18.542,03
Trade Debtors And Receivables	840,17	885,58	989,17	1.118,79	1.142,49	1.257,45	1.400,36	1.541,91	1.666,20	1.739,53	1.803,20
Other Non-Current	236,38	221,63	248,23	269,67	281,20	295,43	311,75	355,54	388,05	423,11	459,74
Total Non-Current Assets	**12.626,19**	**13.019,98**	**13.187,24**	**14.204,58**	**15.087,89**	**16.498,73**	**18.004,47**	**18.839,13**	**19.653,75**	**20.407,40**	**21.215,95**
Inventories	80,37	55,15	40,39	40,18	41,60	44,19	46,22	49,02	50,67	50,27	50,93
Accounts Receivable – Trade	362,88	337,11	330,36	358,42	368,07	397,27	433,09	468,61	500,75	519,64	536,59
Other Current Assets	165,39	128,12	125,72	118,65	124,38	120,17	128,95	145,75	161,16	184,79	214,56
Cash and Equivalents	500,67	297,89	284,02	511,37	736,33	854,64	1.476,33	1.142,16	1.204,53	794,75	948,83
Income Tax	-	2,37	2,69	-2,36	6,00	7,87	10,47	12,55	15,09	16,14	17,47
Total Current Assets	1.164,48	883,37	898,90	1.144,68	1.396,27	1.545,54	2.217,99	1.942,60	2.058,32	1.693,37	1.897,85
Total Assets	**13.963,05**	**14.066,39**	**14.282,24**	**14.670,60**	**15.292,43**	**16.686,75**	**17.726,45**	**19.061,22**	**20.027,01**	**21.439,26**	**22.337,06**
Common Stock	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00
Additional Paid In Capital	-	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50
Other Reserve	588,15	375,44	382,50	404,91	425,32	454,65	491,40	538,86	594,77	657,14	710,83
Net Income/Loss (Stockholders Eq)	25,11	40,41	70,15	165,81	167,75	274,13	372,97	509,62	632,47	737,73	721,17
Total Shareholders' Equity	**5.734,25**	**5.725,13**	**5.979,12**	**6.113,20**	**6.151,36**	**6.309,88**	**6.474,23**	**6.695,12**	**6.917,18**	**7.130,85**	**7.209,21**
Long Term Debt	3.701,44	4.041,44	4.038,90	4.212,14	4.353,68	4.516,19	4.694,45	4.880,22	5.072,09	5.275,16	5.478,49
Long Term CapitalLease Obligations	31,40	17,90	12,17	23,08	21,19	21,13	22,24	23,46	24,58	26,20	26,95
Other Noncurrent Liabilities	1.020,52	1.028,46	964,07	965,86	967,80	1.269,40	1.271,67	1.562,31	1.564,96	1.856,01	1.859,11
Provisions For Liabilities And Charges	70,59	71,38	76,52	70,86	71,15	71,50	71,79	72,13	72,46	72,46	72,88
Deferred Tax Liabilities (Long-Term)	382,33	384,85	384,58	384,58	384,58	505,72	502,14	618,70	618,70	735,26	735,26
Total Noncurrent Liabilities	**5.206,28**	**5.544,04**	**5.476,24**	**5.656,52**	**5.798,40**	**6.383,94**	**6.562,28**	**7.156,82**	**7.352,79**	**7.965,10**	**8.172,69**
Deferred Revenues LTPartnerships	635,00	773,00	738,00	810,75	883,50	969,75	1.056,00	1.155,24	1.254,47	1.366,70	1.478,93
Short-Term Borrowings	212,65	167,21	229,03	226,70	208,16	207,62	218,47	230,43	241,46	257,44	264,77
Short-Term CapitalLeaseObligations	8,57	7,21	8,59	8,45	7,76	7,74	8,15	8,59	9,00	9,60	9,87
Accounts Payable - Trade	2.036,53	1.744,29	1.720,01	1.704,08	2.072,48	2.604,36	3.167,11	3.529,28	3.908,44	4.294,85	4.698,49
Sundry Creditors And Accruals	63,62	38,28	50,50	50,80	46,53	49,28	48,87	48,22	48,79	48,63	48,55
Other Current Liabilities	43,88	66,75	80,23	99,65	123,75	153,69	190,87	237,05	294,40	365,62	454,07
Total Current Liabilities	**3.022,52**	**2.797,23**	**2.826,88**	**2.900,88**	**3.342,66**	**3.992,92**	**4.689,94**	**5.209,28**	**5.757,05**	**6.343,32**	**6.955,16**
Total Liabilities and Equity	**13.963,05**	**14.066,39**	**14.282,24**	**14.670,60**	**15.292,43**	**16.686,75**	**17.726,45**	**19.061,22**	**20.027,01**	**21.439,26**	**22.337,06**

15. Merged Valuation Output with the Synergies

15.1. P&L

(in M€)	2009	2010	2011	2012	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Industry	512,71	587,23	531,85	481,39	521,17	670,73	771,07	802,32	681,97	698,85	713,21	729,39
Electricity	642,00	840,60	957,20	1.157,80	1.545,92	1.675,20	1.947,47	2.149,02	2.458,99	2.753,61	2.944,11	3.108,54
Income from institutional partnerships	82,70	107,00	111,60	127,40	145,50	145,50	172,50	172,50	198,48	198,48	224,46	224,46
Revenues	**1.237,41**	**1.534,83**	**1.600,65**	**1.766,59**	**2.212,59**	**2.491,43**	**2.891,03**	**3.123,84**	**3.339,44**	**3.650,94**	**3.881,78**	**4.062,39**
Other Operating Income	42,60	73,00	84,50	63,10	76,32	83,37	96,74	107,72	123,20	139,25	148,22	157,18
Cost Of Materials	- 404,62	- 436,92	- 511,91	- 484,47	- 520,10	- 421,86	- 403,65	- 440,13	- 646,11	- 728,66	- 774,96	- 820,40
Outsourcing	- 144,44	- 142,79	- 101,67	- 87,33	- 104,65	- 108,28	- 111,97	- 116,14	- 120,18	- 124,28	- 127,17	- 130,15
Salaries Wages and Employee Benefits	- 113,97	- 132,43	- 138,95	- 147,50	- 148,33	- 157,06	- 172,76	- 185,89	- 203,82	- 224,01	- 237,03	- 249,88
Other Operating Expenses (FSE)	- 114,76	- 141,67	- 145,03	- 174,63	- 184,08	- 195,55	- 216,64	- 233,36	- 257,25	- 280,16	- 295,16	- 308,48
Total Costs	**- 777,79**	**- 853,82**	**- 897,57**	**- 893,93**	**- 957,16**	**- 882,75**	**- 905,03**	**- 975,53**	**- 1.227,36**	**- 1.357,11**	**- 1.434,32**	**- 1.508,92**
EBITDA	**502,22**	**754,00**	**787,58**	**935,76**	**1.331,76**	**1.692,05**	**2.082,74**	**2.256,03**	**2.235,28**	**2.433,09**	**2.595,68**	**2.710,65**
Depreciations & Amortisations	- 338,24	- 460,50	- 486,75	- 520,17	- 599,56	- 729,93	- 801,86	- 841,76	- 913,34	- 992,36	- 1.032,48	- 1.251,25
Provisions	- 1,88	- 12,13	- 2,83	0,99	-	-	-	-	-	-	-	-
EBIT	**162,09**	**281,37**	**298,00**	**416,58**	**732,20**	**962,12**	**1.280,88**	**1.414,27**	**1.321,94**	**1.440,73**	**1.563,19**	**1.459,41**
Financial Gains (Losses)	62,27	- 191,05	- 267,74	- 312,45	- 291,50	- 289,09	- 290,06	- 293,17	- 296,49	- 299,63	- 303,71	- 306,17
Equity In Earnings of Affiliate/Joint Ventures	3,76	1,15	2,19	4,99	6,08	9,98	12,33	15,04	18,35	22,37	27,29	33,28
Income Before Taxes	287,47	78,90	72,90	130,08	347,50	331,27	476,09	599,85	774,91	917,99	1.022,36	923,88
Taxes Paid	- 36,88	- 27,30	- 27,29	- 43,73	- 117,18	- 110,66	- 159,24	- 200,48	- 259,26	- 307,07	- 342,17	- 308,40
Net Income	234,85	30,60	44,08	81,70	230,33	220,61	316,85	399,37	515,65	610,92	680,19	615,48

15.2. Balance Sheet

Balance Sheet (in '000 €)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Goodwill	20,69	18,14	18,95	76,06	76,06	76,06	76,06	76,06	76,06	76,06	76,06
Intangible Assets	1.395,66	1.374,00	1.366,44	1.278,67	1.196,65	1.119,98	1.048,33	981,36	918,76	860,25	849,52
Property Plant & Equipment - Net	10.349,48	10.740,08	10.810,37	11.785,92	12.727,56	14.100,10	15.534,59	16.294,67	17.047,60	17.786,42	18.542,03
Other Non-Current	147,12	95,32	92,27	95,46	94,55	93,97	94,71	94,39	94,37	94,48	94,41
Trade Debtors And Receivables (Long-Term)	840,17	885,58	989,17	1.118,79	1.142,49	1.257,45	1.400,36	1.541,91	1.666,20	1.739,53	1.803,20
Deferred Tax Assets (Long-Term)	45,45	67,49	102,34	116,32	130,14	145,30	160,25	204,64	237,21	272,03	308,80
Total Non-Current Assets	12.798,57	13.180,61	13.378,47	14.470,69	15.366,64	16.792,20	18.313,56	19.192,32	20.039,47	20.828,06	21.673,31
Inventories	80,37	55,15	40,39	40,18	41,60	44,19	46,22	49,02	50,67	50,27	50,93
Accounts Receivable - Trade	362,88	337,11	330,36	358,42	368,07	397,27	433,09	468,61	500,75	519,64	536,59
Other Receivables (Short-Term)	34,39	43,07	62,27	63,71	65,19	66,69	68,23	69,81	71,43	73,08	74,77
Government	20,78	19,67	18,34	19,60	19,60	19,60	19,60	19,60	19,60	19,60	19,60
Other Current Assets	165,39	128,12	125,72	118,65	124,38	120,17	128,95	145,75	161,16	184,79	214,56
Cash and Equivalents	500,67	297,89	284,02	511,37	736,33	854,64	1.476,33	1.142,16	1.204,53	794,75	948,83
Income Tax	-	2,37	2,69	-2,36	6,00	7,87	10,47	12,55	15,09	16,14	17,47
Assets Held For Sale	-	-	35,11	35,11	35,11	35,11	35,11	35,11	35,11	35,11	35,11
Total Current Assets	1.164,48	883,37	898,90	1.144,68	1.396,27	1.545,54	2.217,99	1.942,60	2.058,32	1.693,37	1.897,85
Total Assets	13.963,05	14.066,39	14.282,24	14.670,60	15.292,43	16.686,75	17.726,45	19.061,22	20.027,01	21.439,26	22.337,06
Common Stock	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00	4.964,00
Additional Paid In Capital	-	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50	186,50
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Other Reserve	588,15	375,44	382,50	404,91	425,32	454,65	491,40	538,86	594,77	657,14	710,83
Net Income/Loss (Stockholders Equity)	25,11	40,41	70,15	230,33	220,61	316,85	399,37	515,65	610,92	680,19	615,48
Total Shareholders' Equity Exc. Min.	5.577,26	5.566,35	5.603,15	5.785,73	5.796,42	5.922,00	6.041,27	6.205,01	6.356,19	6.487,83	6.476,81
Minority/Non Controlling Int	156,99	158,78	375,98	391,99	407,79	430,60	459,36	496,14	539,44	585,48	626,71
Total Shareholders' Equity	5.734,25	5.725,13	5.979,12	6.177,73	6.204,22	6.352,60	6.500,63	6.701,15	6.895,63	7.073,30	7.103,52
Long Term Debt	3.701,44	4.041,44	4.038,90	4.212,14	4.353,68	4.516,19	4.694,45	4.880,22	5.072,09	5.275,16	5.478,49
Long Term Capital LeaseObligations	31,40	17,90	12,17	23,08	21,19	21,13	22,24	23,46	24,58	26,20	26,95
Other Noncurrent Liabilities	1.020,52	1.028,46	964,07	965,86	967,80	1.269,40	1.271,67	1.562,31	1.564,96	1.856,01	1.859,11
Provisions For Liabilities	70,59	71,38	76,52	70,86	71,15	71,50	71,79	72,13	72,46	72,46	72,88
Deferred Tax Liabilities	382,33	384,85	384,58	384,58	384,58	505,72	502,14	618,70	618,70	735,26	735,26

Total Noncurrent Liabilities	5.206,28	5.544,04	5.476,24	5.656,52	5.798,40	6.383,94	6.562,28	7.156,82	7.352,79	7.965,10	8.172,69
Deferred Revenue	635,00	773,00	738,00	810,75	883,50	969,75	1.056,00	1.155,24	1.254,47	1.366,70	1.478,93
Short-Term Borrowings	212,65	167,21	229,03	226,70	208,16	207,62	218,47	230,43	241,46	257,44	264,77
Short-Term CapitalLeaseObligations	8,57	7,21	8,59	8,45	7,76	7,74	8,15	8,59	9,00	9,60	9,87
Accounts Payable – Trade	2.036,53	1.744,29	1.720,01	1.704,08	2.072,48	2.604,36	3.167,11	3.529,28	3.908,44	4.294,85	4.698,49
Sundry Creditors And Accruals	63,62	38,28	50,50	50,80	46,53	49,28	48,87	48,22	48,79	48,63	48,55
Other Current Liabilities	43,88	66,75	80,23	99,65	123,75	153,69	190,87	237,05	294,40	365,62	454,07
Total Current Liabilities	3.022,52	2.797,23	2.826,88	2.900,88	3.342,66	3.992,92	4.689,94	5.209,28	5.757,05	6.343,32	6.955,16
Total Liabilities	8.228,80	8.341,26	8.303,12	8.557,40	9.141,07	10.376,86	11.252,22	12.366,10	13.109,83	14.308,41	15.127,85
Total Liabilities and Shareholders Equity	13.963,05	14.066,39	14.282,24	14.735,12	15.345,28	16.729,46	17.752,85	19.067,25	20.005,46	21.381,72	22.231,37

15.3 Martifer Energy Systems Synergy: Merged

EBITDA	2013	2014	2015	2016	2017	2018	2019	2020
Sales	-	129,47	208,88	216,25	72,02	63,85	63,42	64,35
Costs	-	126,15	203,17	209,94	69,78	61,73	61,18	61,92
EBITDA	**-**	**3,32**	**5,71**	**6,31**	**2,24**	**2,12**	**2,25**	**2,43**
Depreciations	-	0,56	0,56	0,56	0,56	0,56	0,56	0,56
EBIT	**-**	**2,76**	**5,15**	**5,75**	**1,68**	**1,56**	**1,68**	**1,87**
EBIT(1-T)	-	2,03	3,79	4,22	1,23	1,14	1,24	1,37
Pre-FCFF	-	2,59	4,35	4,78	1,80	1,71	1,80	1,94
- NWC	-	-	-	-	-	-	-	-
-CapEx	-	1,62	0,62	0,62	0,62	0,62	0,62	0,62
FCFF	**-**	**0,97**	**3,73**	**4,17**	**1,18**	**1,09**	**1,18**	**1,32**

16. Interest Coverage Ratio Consolidated and Weighted Computations

EDP R	2010	2011	2012	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Financial Debt	3.534,00	3.826,00	3.874,00	4.024,96	4.181,80	4.344,76	4.514,06	4.689,96	4.872,72	5.062,60	5.259,87
Interest Paid	166,90	189,50	205,00	251,55	281,00	282,51	284,03	285,56	287,09	288,64	290,19
EBIT	289,90	347,50	450,10	616,50	682,89	820,26	933,70	1.099,22	1.230,64	1.328,00	1.320,09
Interest Coverage Ratio (ICR)	2,95	1,98	2,25	2,45	2,43	2,90	3,29	3,85	4,29	4,60	4,55
Martifer	**2010**	**2011**	**2012**	**2013E**	**2014E**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**
Financial Debt	420,07	407,76	414,69	445,41	408,99	407,93	429,24	452,73	474,42	505,80	520,21
Interest Paid	42,12	24,47	27,47	44,79	51,41	51,28	53,96	56,91	59,64	63,58	65,39
EBIT	- 21,00	- 19,45	- 15,76	23,13	30,86	37,26	48,65	58,30	69,49	75,97	81,89
Interest Coverage Ratio (ICR)	- 0,50	- 0,79	- 0,57	0,52	0,60	0,73	0,90	1,02	1,17	1,19	1,25
Consolidated ICR (Weighted)	2,58	1,71	1,98	2,26	2,27	2,72	3,08	3,60	4,01	4,29	4,25
Consolidated ICR	1,35	1,39	1,97	2,00	2,00	2,40	2,72	3,17	3,52	3,75	3,69

17. Martifer Net Debt/EBITDA 2010-2020

Martifer	2010	2011	2012	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Financial Debt	420,07	407,76	414,69	445,41	408,99	407,93	429,24	452,73	474,42	505,80	520,21
Cash	76,67	77,89	38,02	67,55	29,65	57,70	102,33	133,86	197,70	282,22	360,34
Net Debt	343,40	329,87	376,66	377,86	379,34	350,23	326,91	318,87	276,72	223,58	159,87
Net Debt/EBITDA	5,82	36,87	90,61	9,27	7,66	6,07	4,55	3,79	2,77	1,98	1,22

18. Control Premium per Industry

15-17 Construction

Range = 0.0% to 74.4% *Median = 22.2%* *Average = 28.6%*

15 **Building Construction**

Range = 0.0% to 15.6% *Median = 7.8%* *Average = 7.8%*

1521	03/12/12	TR Shoji YK (Yasuragi Co., Ltd.)	-97.9%*
1521	03/05/12	GreenHouse Holdings, Inc.	-77.1%*
1522	09/08/11	Forever Prosperous Pte Ltd. (PT Royal Oak Development Asia Tbk)	0.0%
1531	03/12/12	MARUSEI Co., Ltd.	-98.3%*
1542	08/18/11	Sunway Holdings Bhd.	15.6%

16 **Heavy Construction**

Range = 2.6% to 55.3% *Median = 22.2%* *Average = 26.7%*

1611	10/05/11	ConnectEast Group	22.2%
1629	12/01/11	Global Industries Ltd.	55.3%
1629	11/11/11	CPB Equity Co. Ltd. (Christiani & Nielsen Thailand Public Co. Ltd.)	2.6%

17 **Construction - Special Trade Contractors**

1711	04/21/11	Eaga PLC	30.4%
1731	07/05/11	EnergyConnect Group, Inc.	74.4%

34-35 **Fabricated Metal Products, Industrial Machinery and Computers (continued)**

3559	08/22/11	Gerber Scientific, Inc.	35.5%
3571	08/04/11	Hypercom Corp.	126.1%
3571	05/20/11	Shenzhen Languang Electronic Group Co. Ltd. (Gansu Languang Science & Technology Co. Ltd.)	-54.6%*
3577	02/15/12	Blue Coat Systems, Inc.	47.7%
3577	10/01/11	Ralink Technology Corp.	10.5%
3577	09/26/11	silex technology, Inc.	73.1%
3578	08/24/11	Radiant Systems, Inc.	27.6%

36 **Electrical and Electronic Machinery and Equipment**

Range = 0.0% to 702.1% *Median = 38.4%* *Average = 66.5%*

3612	02/28/12	Newave Energy Holding SA	36.4%
3613	03/30/12	SMB United Ltd.	15.6%
3613	01/17/12	Energy Support Corp.	-97.2%*
3613	05/16/11	Technology Research Corp.	84.6%
3621	11/03/11	Harbin Electric, Inc.	702.1%
3621	08/26/11	Tognum AG	40.5%
3625	08/04/11	elexis AG	20.6%
3631	10/14/11	Sigdo Koppers SA (Cia Tecno Industrial SA)	11.9%
3631	09/01/11	Tong Yang Magic Co., Ltd.	31.1%
3632	12/21/11	KJK Fund SICAV-SIF (Snaige AB)	314.9%
3633	09/09/11	Paradise Capital Holding Co. (Olympic Group for Financial Investments Co.)	35.1%
3633	07/27/11	Schulthess Group AG	28.9%
3639	10/14/11	Sociedad Manufacturera de Electroartefactos SA	0.0%
3661	05/31/11	XETA Technologies, Inc.	43.2%
3661	05/10/11	Tollgrade Communications, Inc.	0.2%
3663	01/13/12	Ace & Partners Corp.	-99.9%*
3663	09/16/11	China Security & Surveillance Technology, Inc.	33.2%
3663	09/12/11	Maspro Denkoh Corp.	63.4%
3663	08/22/11	EMS Technologies, Inc.	33.1%

19. Kortweg Probability of Default

Industry	2-digit SIC	L = 0.1	0.3	0.5	0.7	0.9	Observed L
Oil & Gas	13	0.005	0.043	0.121	0.237	0.391	0.030
Builders	15	0.004	0.034	0.094	0.184	0.305	0.076
Food	20	0.012	0.104	0.288	0.565	0.934	0.032
Paper	26	0.004	0.037	0.102	0.200	0.330	0.038
Publishing	27	0.016	0.141	0.391	0.766	1.266	0.064
Chemicals	28	0.019	0.171	0.475	0.930	1.538	0.021
Petroleum Products	29	0.005	0.047	0.131	0.256	0.423	0.008
Primary Metals	33	0.002	0.019	0.052	0.102	0.168	0.018
Machinery	35	0.007	0.067	0.186	0.365	0.603	0.055
Electric Equipment	36	0.016	0.147	0.408	0.800	1.323	0.027
Cars	37	0.007	0.064	0.177	0.347	0.574	0.163
Instruments	38	0.007	0.065	0.180	0.353	0.584	0.017
Transport (Air)	45	0.006	0.050	0.140	0.275	0.454	0.129
Telecom	48	0.005	0.043	0.120	0.236	0.390	0.030
Utilities	49	0.003	0.025	0.070	0.138	0.228	0.058
Wholesale (Non-dur)	51	0.006	0.053	0.147	0.289	0.477	0.027
Retail (Misc)	53	0.008	0.068	0.188	0.368	0.609	0.031
Banks	60	0.003	0.024	0.068	0.133	0.220	0.073
Insurance	63	0.005	0.044	0.123	0.242	0.399	0.057
Patent & Royalty	67	0.003	0.025	0.068	0.134	0.222	0.064
Hotels	70	0.003	0.030	0.083	0.164	0.270	0.034
Equipment Services	73	0.008	0.071	0.198	0.389	0.642	0.019
Health	80	0.005	0.042	0.116	0.227	0.376	0.038
Average	-	0.007	0.061	0.171	0.335	0.553	0.048

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