



**Faculty of Economics and Business**

**FINAL DEGREE PROJECT**

**DOUBLE INTERNATIONAL DEGREE IN BUSINESS ADMINISTRATION  
AND MANAGEMENT AND ECONOMICS**

**CONSOLIDATING THE PRESENCE OF EOS PROJECT MANAGEMENT IN  
EUROPE**

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## 1. INTRODUCTION

Eos Project Management is a global consulting company that offers high qualified workforce for the supervision, administration and engineering of energy projects all over the world. It complements teams managing EPC projects (Engineering, Procurement and Construction) in the following sectors: renewable energy, oil&gas, mining, water, industry and civil engineering works.

The firm's workforce consists of many professionals working in Spain, France, United Kingdom, Canada, United States, Mexico, Colombia, Chile and Brazil.

The main objective of the present study is to determine the most favourable European country to expand the activity of EOS Project Management. Once determined, the next step is to conduct a thorough analysis of the potential country and the subsequent action plan.

The idea of this study has come from the company itself, which gave me the opportunity of developing a business plan focusing on Europe, as this is an area where EOS Project Management desires to expand its market share and intervene in new projects in the energy, automotive and aeronautical sectors.

On a general level, the objectives set for the preparation of this analysis were:

- Conduct a market research for each of the potential host countries.
- Determine which country is the most suitable for such an expansion.
- Having determined the country, develop a marketing strategy based on the country's macroenvironment and the industry's microenvironment.
- Determine a real action plan in order to consolidate EOS presence in the chosen market.

## **1.1. Business description**

### *1.1.1. Corporate name*

EOS PROJECT MANAGEMENT SL

### *1.1.2. Acronym*

EOS PM

### *1.1.3. Economic sector*

Consulting sector: Professional, scientific and technical activities.

CNAE Classification: (7112) Engineering services and other activities related to technical advice.

### *1.1.4. Social object*

- Research in information and communications technology
- Design and development of systems and software components
- Systems' marketing, distribution and sale.
- Training courses on technologies

### *1.1.5. Mission*

The mission of EOS Project Management is to build collaborative enterprise and social networking for their clients, transforming ideas into innovative solutions and services with high added value, in order to improve efficiency and create value in the relationship with its suppliers, customers and employees, contributing the development of their projects.

### *1.1.6. Vision*

Become a reference engineering consulting company nationally and internationally, through a wide network of qualified consultants.

### *1.1.7. Current objective*

To consolidate its national and international presence, especially in Europe.

### *1.1.8. EOSOL Group and EOS Project Management*

The EOSOL Group is a group of companies that carries on the development, construction and operation of renewable energy projects and infrastructure.

EOSOL ENERGY SL (2007) is focused in energy production and long-term projects. For that purpose it makes agreements with institutional investors to co-invest in projects and developed by the group.

EOS Engineering SL (2010) is responsible for the design, promotion, marketing, construction, and operation of solar projects, wind and other renewable energy, conventional energy such as biofuels, energy crops and biomass, and cogeneration projects, efficiency energy, and others.

EOS Project Management (2009) is a global consulting firm that provides highly qualified specialists with extensive experience in managing complex projects in all phases. Its function is to complement the customer team to manage projects in the following sectors: oil and gas, energy, industry, water, civil engineering and mining.

### *1.1.9. EOS Project Management history*

EOS Project Management Company was founded on May 21<sup>st</sup> of 2009, beginning its real activity in April 2010, when they signed their first contract. It is a young company with less than 6 years operating in the sector. The 40% of employees are fixed, while 60% are temporary. Its direction is composed of three men. The social capital of the firm was of 50.000€ in 2014 and the number of employees was near 50. The business turnover was about 1.5 million euros in 2014. Nowadays, the number of employees is almost 100, whereas its turnover has reached 8 million euros (according to 2015 internal data).



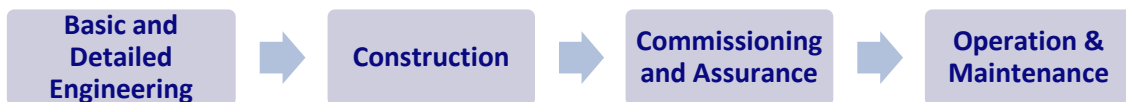
#### 1.1.10. *Detailed description of the firm's activity*

EOS Project Management S.L. (from now on EOS) is a consulting firm that provides technical assistance to large companies that want to undertake new projects. Its headquarters is located Orcoyen, Navarra, on the fourth floor of c/La Muga, 9.

Companies in the sector request EOS the search for highly qualified profiles to address certain temporary projects. That is when the EOS team starts working on finding workers with the necessary skills. Then the process of selection and screening starts.

Therefore, we can say that the main function of EOS is to act as an intermediary between its clients (companies) and workers (consultants).

EOS Project Management is a global consulting firm that provides highly qualified specialists and extensive experience in managing complex projects in all phases:



Its function is to complement the customer's team to manage projects in the following sectors: oil and gas, energy, industry, water, civil engineering and mining.

EOS company policy is based on transparency, teamwork, commitment to business ethics and international approach.

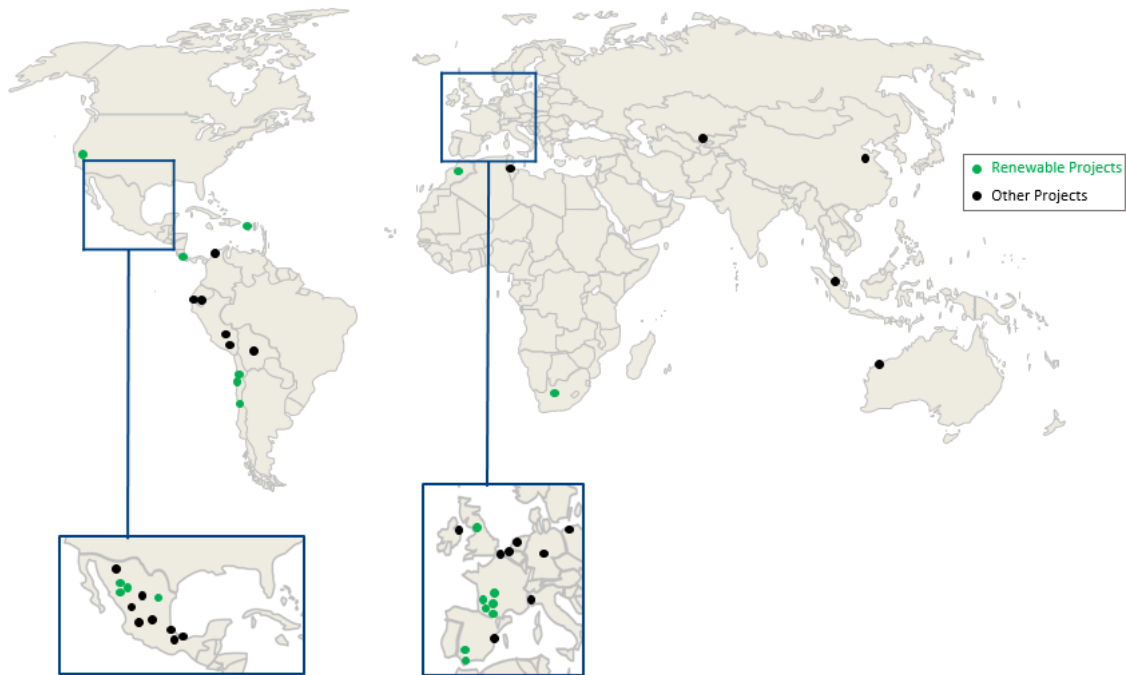
The advantages EOS provides to companies with their service are:

- ◆ Finding the most suitable professionals for each type of project.
- ◆ Complementing the technical team internalizing customer know-how required for a specific project on time.
- ◆ Do not overload the structure the customer on their peaks.
- ◆ Flexible client technical capabilities to meet new challenges.
- ◆ Resolve customer emergencies within short deadlines and expand the range of possible solutions (i.e. hiring local instead of expatriation).
- ◆ Global support through its offices and partners.

- ▀ Outsource steps that are not the core business of the client, generating savings of time, effort and money, to take over the professional from his selection to his expatriation (salary, visas, permits, etc.)

The National Classification of Economic Activities or CNAE of Spain classifies the Eos Project Management activity in the M Section "Professional, scientific and technical activities", 71<sup>st</sup> Division "Technical Architectural and engineering section; technical testing and analysis ; 711<sup>st</sup> group "Technical Architectural and engineering activities and related technical advice; and class 7112<sup>nd</sup> "Technical engineering services and other activities related to technical advice".

*Illustration 1. EOS' International Presence*



## 1.2. Competitors

EOS Project Management is ranked as the 752<sup>nd</sup> firm of its sector. What is more, it holds the 1.387<sup>th</sup> position of the businesses of Navarra and the 75.922<sup>nd</sup> of the overall firms in Spain.

### 1.2.1. Direct Competitors

Companies that are considered as direct competition are those working in management business, i.e., consultants whose main activity is to cover staffing needs of other companies. We have included companies operating nationally and internationally.

*Table 1. EOS' Project Management direct competitors*

Company	Operating Income (€)	Profit (€)	Assets (€)	Nº Employees	Profit per Employee
Alten	57.036.594	399.577	38.665.983	1.228	325,39
Altran	152.890.000	4.646.000	133.052.000	2.406	1931,01
Arghos	13.793.000	296.000	3.827.000	256	1156,25
Between Technology	7.072.276	547.217	3.221.884	200	2736,09
Binternational	111.960	3.010	39.691	3	1003,33
CT Ingenieros	42.363.155	1.018.020	40.667.002	425	2395,34
ECB Engineering	709.380	33.571	332.913	20	1678,55
Entecnia	835.232	5.194	594.179	9	577,11
<b>EOS PM</b>	<b>1.512.130</b>	<b>19.758</b>	<b>701.392</b>	<b>15</b>	<b>1317,20</b>
Formel D	10.951.230	1.072.467	6.423.711	77	13928,14
Isati	6.769.314	343.834	2.685.443	46	7474,65
KLB Group	6.584.064	-73.222	2.257.351	98	-747,16
Matis	5.384.803	-371.003	8.971.656	100	-3710,03
Quest	14.875.408	130.855	8.170.015	380	344,36
RDT	5.338.762	146.226	2.884.995	110	1329,33
Segula	37.924.000	1.692.000	31.147.000	449	3768,37
Simtec	1.536.555	2.721	290.606	37	73,54

*Source: SABI' data. Own elaboration.*

### 1.2.2. Indirect competitors

As indirect competition we need to consider those companies whose main business is not to recruit workers. This group includes the corporations (clients) per se that, in many cases, they perform the search themselves. Moreover we find business models in which consulting is a secondary activity, but operate in the same sector, as the local firm Talentix.

### **1.3. Clients**

#### *1.3.1. Contact with clients*

The ultimate goal of Eos Project Management is to satisfy its clients' workforce needs. There are three possible scenarios:

- 1) A company requests EOS a concrete worker profile.
- 2) EOS visits companies in order to check whether they need its services.
- 3) EOS tries to guess which profiles companies will need in the short run (through competition analysis and news reports about projects).

In most cases the companies themselves are the ones requesting workers for particular projects. However, the activity of the EOS commercials is crucial because they visit different firms and factories each week.

#### *1.3.2. Relationship with clients*

The relationship with clients has to be transparent and honest in order to agreements to work. After the first contact, the company proceeds to make the request. It can be sometimes very concrete and specified, while others it can be a broad description of some functions of the job. EOS tries to maintain a continuous relationship with its clients and potential ones so when they need help in recruiting, they first appeal EOS.

#### *1.3.3. Agreement with clients*

Once the demand is established, EOS mission starts. They look for concrete profiles in their data base or in the market (explained in the section below about consultants).

After the candidate agrees, EOS presents an offer to the client. This offer includes: the candidate's profile (without personal information, neither name), working conditions and the fare the client needs to pay to the firm. If the client accepts it, EOS will hire the candidate that will work for its client. Obviously the salary EOS will pay to the worker will be lower than the fare charged to the client. That way EOS earns its profit.

On the other hand, if the client denies the candidate, the process do not end. EOS will be following its client's actions because maybe they try to hire that candidate using other ways (direct hiring, other consultant agencies, etc.).

## **1.4. Consultants**

### *1.4.1. Portfolio of consultants*

EOS Project Management has a pool of more than 5,000 experts in different technical areas and management specialized in different disciplines, which allows them to be more agile and flexible in providing solutions to their customers. Specialties in which EOS's consultants are expert: Management and Supervision of work, Project management, Engineering and Design, Contract management, Planning and Control, Procurement & Supply Chain, Operation and maintenance, HSE / PRL, QA / QC, Civil work, Mechanics turbines, rotating equipment, structures, pipes, Electricity, Instrumentation and control, HVAC and PCI, processes, Chemical, Telecommunication and Operation.

### *1.4.2. Search of consultants*

Sometimes the current portfolio is not enough and EOS Project Management appeals to the market. The most used ways are LinkedIn and Info Jobs, both with professional recruitment accounts. They publish public job offers with some filters in order to make a better screening. When the candidates apply, EOS department of human resources makes the selection. The next step is to provide the candidates information about the position and make a formal offer. If the applicants accept, the process continues.

### *1.4.3. Relationship with consultants*

The bidirectional relationship between EOS and its consultants and clients does not finish yet. EOS tries to follow its now workers (previously candidates) performance throughout the whole contract development. When the contract expires or the project ends, the company always tries to search for new job opportunities for those consultants so that they never get unemployed. This phenomena is denominated “the wheel”, in which a consultant enters and travels through many projects in different countries indefinitely. They will become the first potential candidates whenever one new project appears in EOS's horizon.

## **1.5. EOS as an intermediary**

As said before, EOS is the agent of a double-way relationship: Clients ↔ EOS ↔ Consultants. The feedback from its clients and the consequent actions are crucial because those will determine their level of satisfaction. Furthermore, the level of satisfaction of the consultants will be important too, ensuring they will loyally continue working for EOS.

## **2. TARGET MARKET RESEARCH**

### **2.1. Why Europe?**

EOS Project Management is already positioned as leader in the Mexican market and already in the top positions in the rest of Latin America.

However, it is more complicated to expand in Europe, a crowded market in which big firms operate. Between the goals for the period 2017-2019 of EOS we find the one of increasing its presence in Europe and the Middle-East. In this paper we will focus on European countries with potential energy projects development.

Operating in Europe has attached a lot of benefits, since Spain is inside the European Union and is affected by its unique currency and trade agreements.

Single currency benefits. Having a unique currency allows companies to cut down costs and lower transaction risks. It also encourages investments and reduces uncertainty which is crucial for firms to be effective and efficient.

Cross border trade. A company can buy and sell throughout this area, paying and being paid in euro. There is no need to worry about fluctuating exchange rates. EOS market has been widened, meaning that its potential demand has increased as well as its number of potential suppliers. Trade within the euro area is estimated to have increased between 4% and 10% since the introduction of the single currency.

Better borrowing, better planning, more investment. With the euro, inflation has come down to a low and stable level, which also means low and stable interest rates. Firms can borrow more and more cheaply and can invest more confidently in the long term.

Better access to capital. Capital can flow more easily because exchange rate risks have disappeared and because financial market rules are being progressively harmonized – allowing investors to move capital to those parts of the euro area where it can be used most effectively.

## 2.2. Information targets

The purpose of this market research is to identify the most appropriate theoretical number of foreign markets for the company, make a process of selection to choose those that offer greater opportunities and finally select a single country for the expansion plan of Eos Project Management.



As commented before the countries to be included will be those in Europe:

*(Appendix I. Table I)*

- |                              |                   |                     |
|------------------------------|-------------------|---------------------|
| 1. Andorra                   | 18. Greece        | 36. Portugal        |
| 2. Armenia                   | 19. Hungary       | 37. Romania         |
| 3. Austria                   | 20. Iceland       | 38. Russian         |
| 4. Azerbaijan                | 21. Ireland       | Federation          |
| 5. Belarus                   | 22. Italy         | 39. San Marino      |
| 6. Belgium                   | 23. Kazakhstan    | 40. Serbia          |
| 7. Bosnia and<br>Herzegovina | 24. Latvia        | 41. Slovak Republic |
| 8. Bulgaria                  | 25. Liechtenstein | 42. Slovenia        |
| 9. Croatia                   | 26. Lithuania     | 43. Spain           |
| 10. Cyprus                   | 27. Luxembourg    | 44. Sweden          |
| 11. Czech Republic           | 28. Macedonia FYR | 45. Switzerland     |
| 12. Denmark                  | 29. Malta         | 46. Turkey          |
| 13. Estonia                  | 30. Moldova       | 47. Ukraine         |
| 14. Finland                  | 31. Monaco        | 48. United Kingdom  |
| 15. France                   | 32. Montenegro    | 49. Vatican City    |
| 16. Georgia                  | 33. Netherlands   | 50. Albania         |
| 17. Germany                  | 34. Norway        |                     |
|                              | 35. Poland        |                     |

### **2.3. Methodology and analysis of the target markets**

Eos Project Management has limited resources for internationalization. In order to make the decision we have to take into account its limited time, money, knowledge and capabilities; remarking also the efficiency and effectiveness of the decision-making process to implement the outcome of the decision. There will be costs associated of entering the wrong markets and opportunity costs of not entering the right ones.

The firstly selected countries were all those included in Europe as a continent, not only the ones engaged in the European Union. The reason was that I desire to analyse not only full developed countries like France or Germany but also countries which are experimenting a great growth in the last years (Russia, Kazakhstan, Hungary)

#### *2.3.1. General country screening*

##### *2.3.1.1. Population*

The first indicator to be included in the screening was population. Countries with higher population are preferred than the less populated ones, because if the population is above the optimum size, the country will be able to make better use of its resources. This is likely to stimulate investment and this may lead to introduction of new technology.

As a rule, the lowest 30% will be eliminated.

The results (*see Appendix I. Table II*) showed that the most populated ones were: Russian Federation (143.819.569 inhabitants), Germany (80.970.732 inhabitants) and Turkey (75.932.348 inhabitants). This gave us a first clue of the type of country we are looking for our expansion. The eliminated ones were: Lithuania, Albania, Macedonia FYR, Slovenia, Latvia, Estonia, Cyprus, Montenegro, Luxembourg, Malta, Iceland, Andorra, Monaco, Liechtenstein, San Marino and Vatican City, being the last one the less populated.

##### *2.3.1.2. GDP*

The second indicator included in the general screening was each country's GDP. (*See Appendix I. Table III*). This measures the GDP at market prices (current USD of the years 2014). We keep using the same rule: the lowest 30% will be eliminated. The eliminated ones were: Slovak Republic, Belarus, Azerbaijan, Croatia, Bulgaria, Serbia, Bosnia and Herzegovina, Georgia, Armenia and Moldova. The countries with highest GDP were Germany with 3,868,291,231,824 current USD of 2014, United Kingdom with 2,988,893,283,565 current USD of 2014 and Italy with 2,141,161,325,367 current USD of 2014. It can be seen that Germany was in both cases between the firsts positions.



#### 2.3.1.3. *Energy imports*

The third included indicator was “Energy Imports” (See *Appendix I. Table IV*). This indicator measures net energy imports estimated as energy use less production, both measured in oil equivalents. A negative value indicates that the country is a net exporter. Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. Consequently, we will only select countries above +50 points or below -50 points. The eliminated countries were: Finland, United Kingdom, Sweden, Czech Republic, Poland, Ukraine, Romania, Netherlands and Denmark. Only three countries were net exporters of energy: Russian Federation with -83 points, Kazakhstan with -107 and Norway with -486.

#### 2.3.1.4. *HDI*

We checked the Human Development Index. The Human Development Index (HDI) is a tool developed by the United Nations to measure and rank countries' levels of social and economic development based on four criteria: Life expectancy at birth, mean years of schooling, expected years of schooling and gross national income per capita. The HDI makes it possible to track changes in development levels over time and to compare development levels in different countries. All the countries got a “Very High” score, except Russian Federation, Kazakhstan and Turkey which had a “High” score. Since all values seemed acceptable, we carried on the screening without eliminating anyone of them. The average of the thirteen countries was 0.863, “very high” (See *Appendix I. Table V*).

#### 2.3.1.5. *Interconnections*

Finally, we checked the borders of each country, determining that just one interconnection was not enough (See *Appendix I. Table VI*). Two countries were eliminated: Ireland and Portugal, because they only share borders with one country. The average was 5 interconnections for each country.

#### 2.3.1.6. *Results of general screening*

Only eleven countries reached the end of the general screening. They were: Germany, Austria, Russian Federation, Hungary, Turkey, Italy, Kazakhstan, Switzerland, Belgium, Greece and Norway (See *Appendix I. Table VI*).

### 2.3.2. *Specific Country screening*

For the specific country screening we focused on the main field Eos Project Management operates in: Renewable sources of energy. Electricity produced from four sources will only be considered: Hydropower, Biomass and waste power, Solarpower and Windpower; not the power capacity of each country because we want to focus on the real electricity produced from those four sources. (See *Appendix I. Table VII*).

#### 2.3.2.1. *Electricity produced from Hydropower*

The country that generated the most electricity from hydropower sources was Russia, with 169010 GW. Norway was close to the leader with 134950 GW, whereas the others were further. The two last countries were Hungary (290 GW) and Belgium (270GW). (See *Appendix I. Table VII*).

#### 2.3.2.2. *Electricity produced from Biomass and Waste power*

The country that generated more electricity from biomass and waste power was Austria with 57740 GW, closely followed by Germany with 44250 GW. The rest of the countries were further, being Kazakhstan the only one that does not use this kind of renewable source. (See *Appendix I. Table VII*).

#### 2.3.2.3. *Electricity produced from Solarpower*

The country that generated more electricity from solar power was Germany with 33880 GW, followed by Italy with 24660 GW. The rest of the countries had lower values. There were three countries that do not use this kind of source at all: Russian Federation, Hungary and Kazakhstan; or maybe there is not record of its generation. (See *Appendix I. Table VII*).

#### 2.3.2.4. *Electricity produced from Windpower*

The country that generated more electricity from wind power was Germany with 57950 GW. The rest of the countries were really far from that quantity. Only Russian Federation and Kazakhstan did not use this source. (See *Appendix I. Table VII*).

#### 2.3.2.5. Results of specific screening

After collecting all the data we needed first to standardize the values, then to normalize them and finally to weight them.

For the values' standardization (*See Appendix I, Table VIII*), we calculated the mean and the standard deviation of each category. For computing a standard value (z) we need to apply the following formula:  $z = (\text{value } i - \text{mean}) / \text{standard deviation}$ .

For the values' normalization (*See Appendix I, Table IX*), we calculated the maximum and the minimum of each category of the standardised values in order to compute the range (Range=Max-Min). The following step was to normalize those values by applying the following formula:  $(99 * (\text{value } i - \text{minimum}) / \text{range}) + 1$ .

Once having every value normalized, we assigned different weights to each source of energy. (*See Appendix I, Table X*).

For EOS Project Management Windpower is currently the most important one, they are participating in many wind farms; so we assigned a weight of 0.35 out of 1.00 to it.

Furthermore, solar power could be classified as the second in importance for EOS, as the firm belongs to the group EOSOL Energy, so we assigned this second source a weight of 0.30. On the other hand hydropower generation plants are a new target for EOS, field in which they want to enter as soon as possible; so we assigned a weight of 0.20 to this source. Finally, Bioenergy and waste power was assigned with a weight of 0.15, being the fourth in importance for EOS.

As a result we got a mean of 20.189. Those countries above the mean were Russian Federation (21.520), Austria (23.195), Italy (42.263) and Germany (78.709).

We selected Germany as the target market for Eos Project Management due to the richness of its renewable energy sources and the geographical possibilities. (*See Appendix I, Table XI*)

## 2.4. Conclusion and recommendations for EOS Project Management

As a result of the previous analysis the recommended country to expand Eos Project Management in its branch of renewable energy was Germany (*See Appendix I, Table XI*). However, Russia, Austria and Italy need to be considerate by the firm in the short to medium term.

### 3. MARKETING STRATEGY

#### 3.1. General description of the country



It is well known that Germany is one of the most advanced and developed countries in the world. We can say that it is not an old country from an historic perspective because the German Reunification was only 26 years ago.

However, its macro indicators are significant: The Federal Republic of Germany consists of 16 states covering 357,021 square kilometres. As mentioned in the previous analysis, the population is 81.8 million inhabitants. Germany is among the leading political powers of Europe. In some fields, it is also deemed as the technological leader. The unemployment rate was 4.2% in March 2016, being one of the lowest in Europe.

#### 3.2. Macroenvironment: PESTEL Analysis

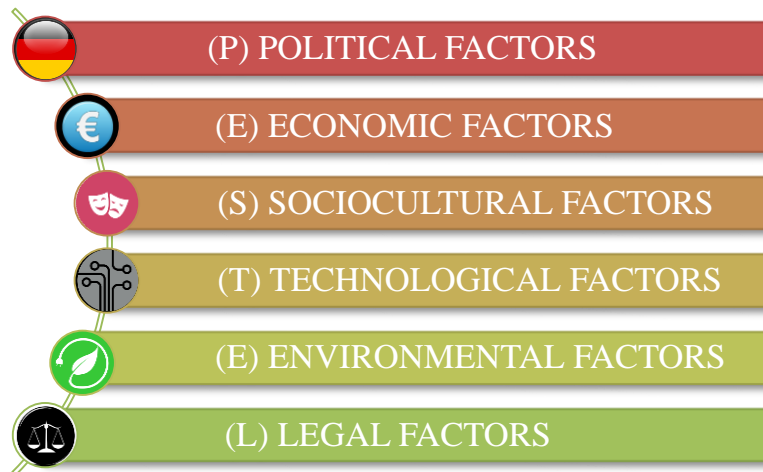
Germany has the 4th largest economy in the world. It is the 2nd largest exporter and 3rd largest importer. Over the years, Germans established a very high standard of living and social security. The nation takes pride as Germany was home to many influential scientists and inventors. But most of all, people know the country for its political and cultural history.

For decades Germany has been the global pioneer in applying renewable energies and environmental technologies. The new energy concept continues this path with ambitious goals to cut CO<sub>2</sub> emissions by 80% and increase the share of renewable energies at total energy consumption to 60% by 2050.

Investments into offshore wind, photovoltaic, geothermal and bioenergy projects will be necessary as well as the set-up of a new, smart energy infrastructure that can balance the fluctuating supply of renewable energies. Furthermore energy, water and resource efficiency technologies will play an even more important role.

We will focus on the key elements of the PESTEL analysis (Political factors, Economic factors, Sociocultural factors, Technological factors, Environmental factors and Legal factors) in order to determine which kind of energy project EOS will implement, when to start it, where locate it, how to do it and with whom to partner.

*Illustration 2. PESTEL Analysis*



### *3.2.1. Political factors*

Germany is a democratic republic. The political system functions under a system called Grundgesetz which was published in the 1949 constitutional document. The Social Democratic Party and the Christian Democratic Union leads the political system since 1949. The legislature, the judiciary, and the executive are the 3 wings which make up Government of Germany.

#### **Main Political Parties (2013 Federal Election)**

*CDU-CSU2 Christian Democratic Union/Christian Social Union.* Associated with conservative values and a moderate approach in economic policy in favour of the social market model.

*SPD Social Democratic Party.* The most important political party in the history of European social democracy. It was founded in 1875 as a Marxist party but progressively underwent significant ideological transformation. Supported by north and west areas of the country.

*Free Democratic Party.* Pro-business, liberal party that currently serves as the junior coalition partner to 'The Union'. It espouses pro-free market and socially liberal positions. The perception of FDP as the party of the privileged has always been a handicap.

*Greens Germany Alliance 90/Green Party.* Its campaign focuses on the goals of climate change prevention and sustainable development, with an emphasis on energy and transportation policies.

*Die Linke Left Party.* Committed to antiglobalization, an economically Keynesianist program and strict pacifist policies of non-intervention. Supported by the eastern area of the country.

The Piraten Party. They campaign on themes of web freedom and their base is made up primarily of younger voters.

Alternative for Germany. It is conservative and runs as a single-issue party: it is against the euro, advocating the return of Germany to the deutsche mark. Supported by conservative academics and business leaders. Labelled as Eurosceptic, nationalist and populist.

Illustration 3. Results of the European Parliament Election of 2014

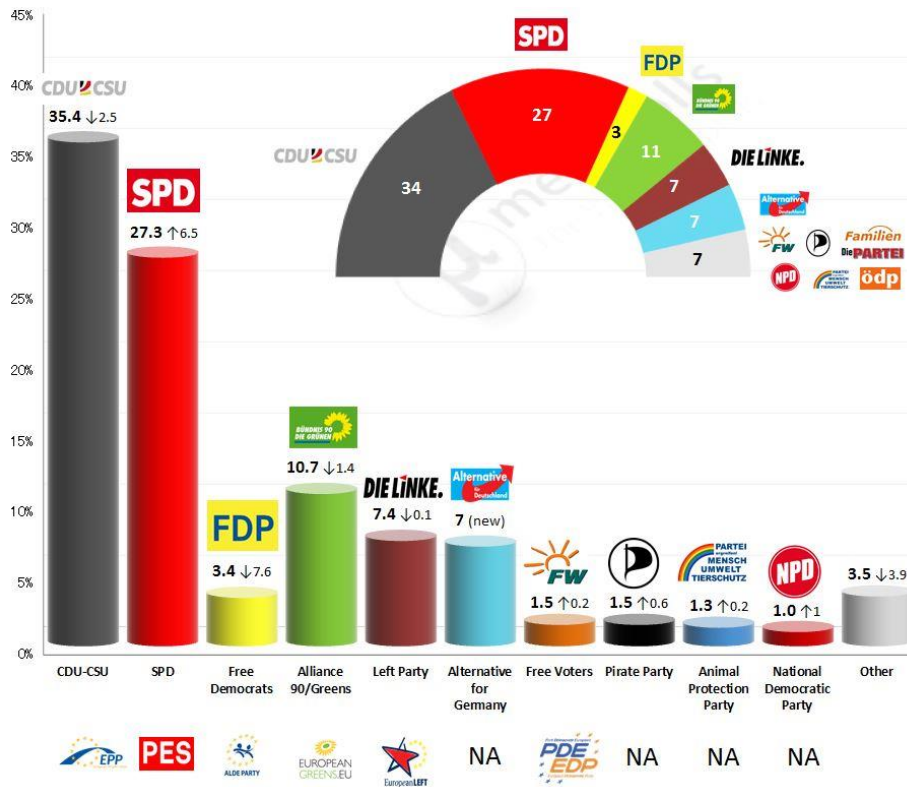
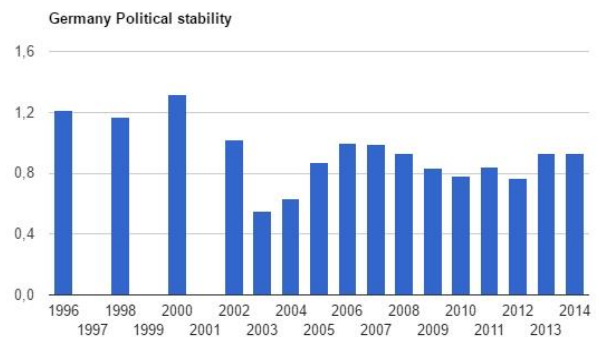


Illustration 4. Germany's Political Stability Index (1996-2014)

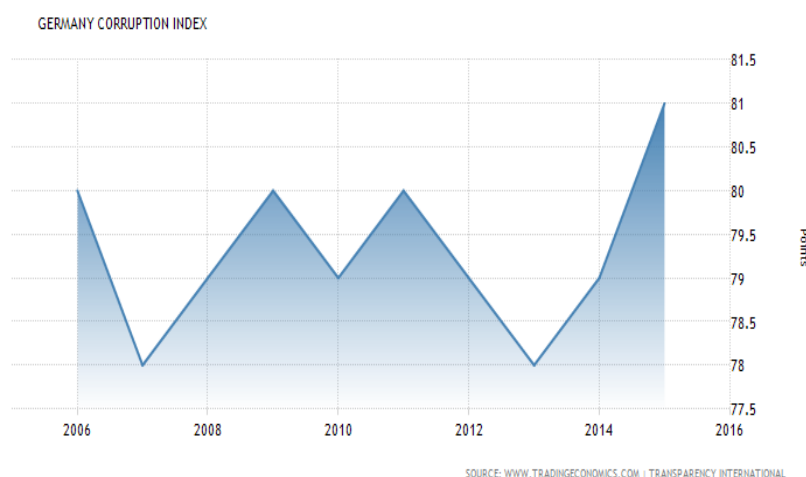
**Political stability.** Political stability index (-2.5 weak; 2.5 strong): For that indicator, The World Bank provides data for Germany from 1996 to 2014. The average value for Germany during that period was 0.92 points with a minimum of 0.55 points in 2003 and a maximum of 1.32 points in 2000. In general the country is quite stable.



Source: TheGlobalEconomy.com, The World Bank (govindicators.org)

*Illustration 5. Germany's Corruption Index (2006-2014)*

**Corruption.** The Corruption Perceptions Index ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 (highly corrupt) to 100 (very clean). The last update was 81 points out of 100, meaning the country is significantly transparent.



**Fiscal policy.** General government budget includes provisions for the future: In 2014, the general government budget returned to surplus for the first time since 2007. This marks the third year in a row that the budget has been close-to-balance. Germany is therefore in compliance with the aims of the Stability and Growth Pact, which stipulates that the general government budget should be close-to-balance or in surplus. A surplus of 1% of GDP is expected this year, partly as a result of the positive economic conditions and the low interest rate environment. This makes it possible to provide resources for the Local Authority Investment Support Fund, for the Energy and Climate Fund and for a reserve for tasks relating to the reception and accommodation of refugees and asylum-seekers in coming years. Consequently, an increased flow of resources out of these funds and reserves can be expected in 2016, meaning that the general government balance will decrease markedly. For this reason, the fiscal policy orientation of the 2016 general government balance must be categorised as expansionary, even if the budget will be close-to-balance.

**Trade agreements.** From the European and German perspective, EU free trade agreements merely supplement the WTO negotiations. All agreements negotiated outside of the WTO have to be compatible with existing WTO requirements.

The main goal for negotiations is to reach agreements with emerging countries as these countries are not only gaining importance in economic terms, they also often still protect their markets with high tariffs and other non-tariff trade barriers.

### 3.2.2. *Economic factors*

**GDP growth.** German's GDO growth rate was documented last time in March 2016 to be 0.7%. It is considerably higher than the growth rate of the last year that was between 0.2 and 0.3%.

**GDP composition.** Nowadays, the composition of the GDP on the expenditure side is the following: household consumption (55 percent), gross capital formation (20 percent, of which 10 percent in construction, 6 percent in machinery and equipment and 4 percent in other products) and government expenditure (19 percent). Exports of goods and services account for 46 percent of GDP while imports for 39 percent, adding 7 percent to total GDP.

**Unemployment.** The economic performance from January 2016 to March 2016 was achieved by 43.1 million persons in employment, which was an increase of 533,000 or 1.3 percent on a year earlier. German seasonally adjusted harmonised jobless rate fell to 4.2 percent in March of 2016 from 4.3 percent in the previous month and hitting a fresh 35-year low. The number of unemployed declined by 1.1 percent while persons in employment rose slightly by 0.1 percent. A year ago the unemployment rate was recorded at 4.8 percent. Unemployment Rate in Germany averaged 5.65 percent from 1950 until 2016, which is a great number.

**Interest rates.** Germany's benchmark interest rate is set by the European Central Bank. The benchmark interest rate in the Euro Area was last recorded at 0 percent; it averaged 2.23 percent from 1998 until 2016, reaching an all-time high of 4.75 percent in October of 2000 and a record low of 0 percent in March of 2016.

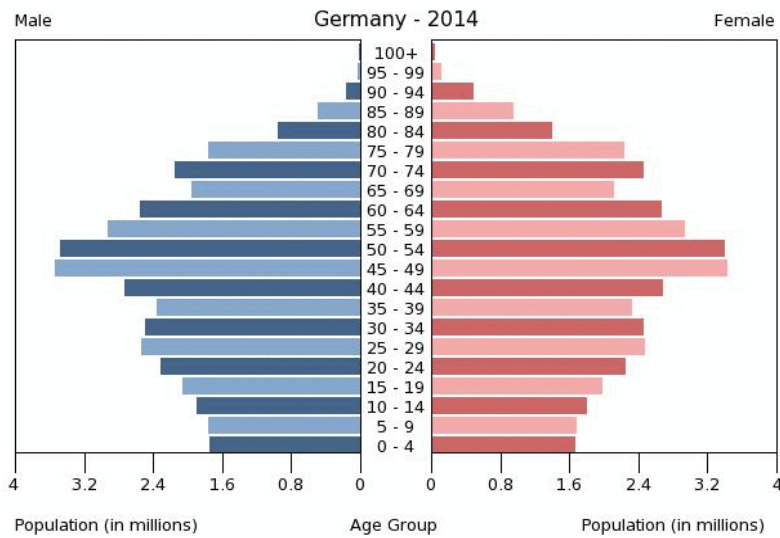
**Inflation.** Consumer prices in Germany fell 0.1 percent year-on-year in April of 2016, following a 0.3 percent rise in March and matching preliminary estimates. It is the first decline since January 2015. Cost of energy dropped further while cost of food and services eased.



*Illustration 5. Germany's Population Pyramid (2014)*

3.2.3. *Sociocultural factors*

**Demography.** The population of Germany is estimated to be about 82 million inhabitants, distributed as the following age structure: 0-14 years inhabitants represent the 13% of total population, 15-24 years represent the 10.6%, 25-54 years represent the 41.7%, 55-64 years represent the 13.6% and 65 years or more represent 21.1%. About 5 million Germans are living abroad.



The death rates was 11.29 deaths/1,000 population (2014), whereas the birth rate was 8.42 births/1,000 population (2014). Life expectancy at birth: total population: 80.44 years, Male: 78.15 years and Female: 82.86 years (2014)

The sex ratio in 2014 was: At birth 1.06 male(s)/female; 0-14 years 1.06 male(s)/female; 15-24 years 1.04 male(s)/female; 25-54 years 1.03 male(s)/female; 55-64 years: 0.97 male(s)/female; 65 years and over 0.76 male(s)/female. Total population: 0.97 male(s)/female (2014 est.), meaning there is more female population than male population.

Literacy, defined as the percentage of people aged 15 and over who can read and write, was of 99% in 2014, defined as complete.

**Labour mobility.** Immigration from the euro periphery to Germany is likely to increase in the coming years given the relatively promising employment outlook there. However, our analysis suggests that inward migration will rise only moderately.

**Minorities.** There are four groups considered "national minorities," which means their ancestors lived in their regions for many centuries. These groups are the Sorbs, Danes, Frisians, and the Roma and Sinti. There are about 50,000 Danes in the northernmost region of Germany. The Sorbs, who are a Slavic people, live in the Lustia region. There are large populations of Frisians in Lower Saxony and the western coast of Schleswig-Holstein.

**Religion.** The majority of Germans are Christian, either Roman Catholic (30.0%) or Protestant (29.9%), although 1.6% of the population are also Orthodox Christians. Islam is the second largest religion in Germany – about 4-5% of Germans are adherents. The largest single group, however, is non-believers, who make up 34.1% of the population.

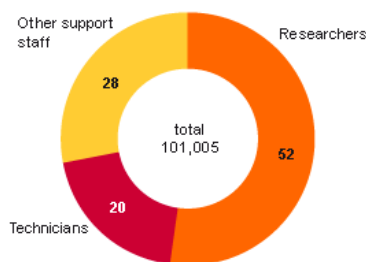
### 3.2.4. Technological factors

**Physical infrastructure.** Germany's logistics' infrastructure includes not only the port of Hamburg – Europe's second largest container port, but also Bremerhaven – Europe's largest car port for vehicle traffic, and Duisburg – home of the continent's largest inland port. Together with over 250 additional inland ports, Germany's port infrastructure facilitates the efficient delivery of goods in Europe's largest market. The Rhine and Elbe rivers serve as major arteries for barge traffic to the deep-water ports in various river bights and along the north and northwest coastlines. Germany has a dense network of airports, of which 23 offer international service. Frankfurt ranks the world's seventh and ninth largest airport in terms of cargo and passenger volume respectively. The country's highway system has one of the greatest kilometre density levels in Europe and the 37,900 km of railway tracks are nearly enough to circle the globe while its high-speed railway network, with speeds of up to 300 km/h, is the fourth largest in the world.

**Investment in R & D.** Research and development (R&D) are the cornerstones of the future of the German economy. Generous public funding programs contribute to the excellent conditions allowing companies from all over the world to carry out their R&D in Germany: setting the stage for international high-tech products "made in Germany." The public and private sectors have made a significant commitment to spend around three percent of national GDP per year on R&D activity. This amounts to approximately EUR 70 billion R&D spending annually. The German federal government promotes research through the so-called High-Tech Strategy. This initiative defines areas of particular significance due to their contribution to solving global challenges. Support is also granted to key technologies that act as innovation drivers.

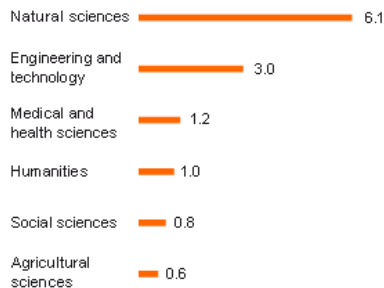
*Illustrations 6, 7 and 8. Germany's Research and Development (2014)*

**Research and development, 2014**  
Personnel in full-time equivalent, %



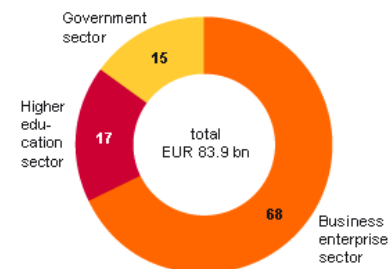
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**Research and development, 2014**  
Internal expenditure of the government sector, EUR bn



© Statistisches Bundesamt, Wiesbaden 2016

**Research and development, 2014**  
Internal expenditure, by sector, %



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### 3.2.5. Environmental factors

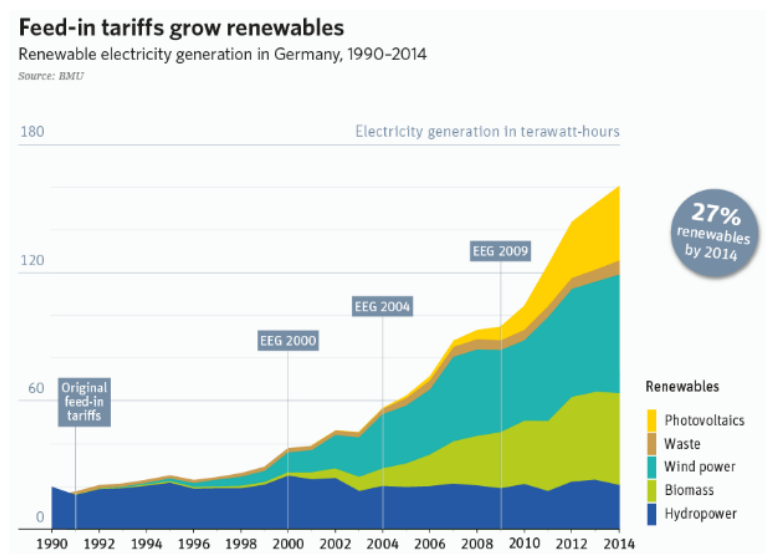
Internationally, Germany leads the way in climate protection and is a pioneer in the development of renewable energies. The exit from nuclear power is already under way.

Germany is pursuing a strategy of combining economic growth and environmental protection with a view to sustainable economics. In addition to the development of renewable energies, the main contributory factors to this are an increase in the efficient use of energy and resources, and the smart use of regenerative raw materials. It a strategy that pays off twofold, because on the one hand the impact on the environment and climate declines, while on the other new fields of business and jobs are created.

**Nuclear phase-out.** The nuclear phase-out is a central part of Germany's Energiewende. Germans view nuclear as unnecessarily risky, too expensive, and incompatible with renewables. In 2022, the last nuclear plant in Germany is to be shut down; at the beginning of 2011, 17 were in operation; in early 2015, nine were still online.

**Renewable Energy Act with feed-in tariffs.** The law specifies that renewables have priority on the grid and that investors in renewables must receive sufficient compensation to provide a return on their investment irrespective of electricity prices on the power exchange. The feed-in tariffs themselves are quite simple to explain. Basically, you take the cost of a particular system, divide that figure by the number of kilowatt-hours the system can reasonably be expected to generate over its service life (generally 20 years), and you get the cost of that system per kilowatt-hour. Now, tack on whatever return on investment (ROI) you want to provide, and you have your feed-in tariff. In Germany, the target ROI is generally around five to seven percent (although the levels vary in practice).

*Illustration 9. Germany's Feed-in tariffs*



**Emissions trading.** It is worth mentioning that Germany is one of the few countries that not only met its Kyoto targets, but surpassed them. Germany reduced its emissions by 24.7 percent by the end of 2012. At the end of 2014, the reduction had reached 27 percent.

Germany is not, however, on course to reach its 2020 emissions reduction target of 40 percent. Additional political action is needed. In December 2014, the government adopted a Climate Action Plan to help close this emissions gap, and in the spring of 2015, the government was also discussing the limiting emissions from old coal plants.

**Environmental taxation.** Tax the bads, not the goods – as the slogan puts it, environmental taxation increases taxes on environmentally unfriendly activities (such as fossil fuel consumption). But it is also revenue-neutral, for the tax revenue can be used to lower the costs of something society considers good (such as, in the case of Germany, labor, when the revenue is used to offset payroll taxes). The policy was very successfully implemented in Germany and created some 250,000 jobs even as it reduced fuel consumption and made German workers more competitive internationally.

**Cogeneration Act.** Germany wants to get 25 percent of its power supply from cogeneration units because cogeneration is much more efficient than separate power and heat generation. The Cogeneration Act therefore pays bonuses for cogeneration relative to system size irrespective of the feedstock.

**Renewable Energy Heating Act and Market Incentive Program (MAP).** Germany's Renewable Heat Act aims to increase the share of renewable heat to 14 percent by 2020. New building owners are obligated to get a certain share of their heat from renewable energy, and owners of old building get financial support for renovations. This funding was temporarily cut during the economic crisis although every euro spent here generated more than 7 euros in private investments. Now, the program is back in place.

**Act on Accelerating Grid Expansion.** The energy transition will need an expanded, adapted grid to cope with more renewable power. Neither has been progressing fast enough, so the German Parliament has passed the Act on Accelerating Grid Expansion. But there is no agreement on how much needs to be done where. Official plans are in place, but several of the projects remain contested.

**Energy-Conservation Ordinance (EnEV) and financial support schemes.** When it comes to the construction of new buildings, the German Energiewende began in 1990 with the development of highly efficient passive houses. Unfortunately, although many buildings can now be renovated to fulfil very ambitious standards close to the Passive House Standard,

a lot of progress still needs to be made towards increasing the energy efficiency of renovated buildings. To improve things, Germany is in the process of developing an Efficient Building Strategy.

**Ecodesign/ErP Directive.** The Eco-design Directive, another important energy transition tool, is the main regulatory instrument for cutting off the products with the worst environmental performance. This essential regulation was initiated throughout Europe; it remains one of the most important tools for reducing demand for new grids and power plants in Germany, thus making it a crucial part of the energy transition.

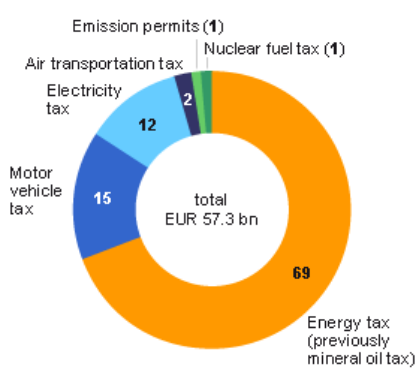
**International Climate Initiative.** Germany is the second largest donor of financing for climate protection worldwide. German climate funds promote action to mitigate climate change by enabling efficiency measurements, funding renewables, electric mobility, etc. Nevertheless, Germany is far behind the internationally agreed target of 0.7 percent of gross national income for Official Development Assistance. In 2013, the level was around 0.38 percent, a stable trend since 2008.

**Amendments to the Renewable Energy Sources Act (EEG) in 2014.** In August 2014, the German government adopted comprehensive amendments to its Renewable Energy Sources Act (EEG), which is the driver behind the Energiewende. It marks the attempt to address the issues of reliability of supply and affordability.

**Coordination with the European Union.** Energy has become a core issue for the European Union. However, the EU does not have an exclusive competence in this field. Making it a shared competence in the Lisbon Treaty of 2009 was a bold move forward, but it remains a natural field of conflict between Member States and many EU institutions.

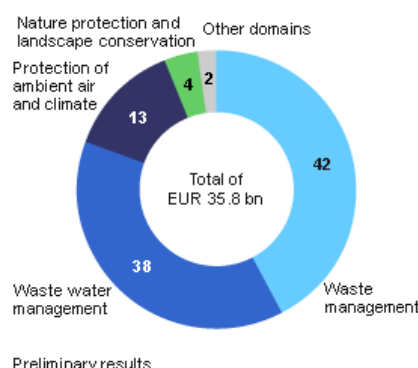
*Illustrations 10, 11 and 12. Germany's Environmental Taxes*

**Environmental taxes, 2014**  
Shares in %



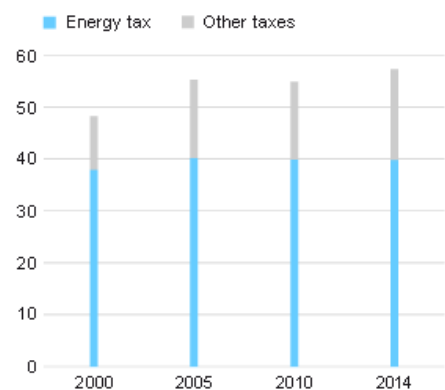
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**Expenditure per domain in 2010**  
in %



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**Environmental taxes**  
EUR bn



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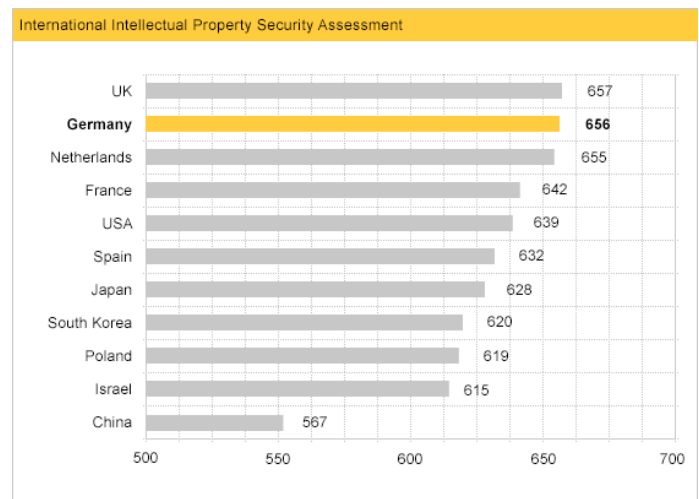
### 3.2.6. Legal factors

German business law is governed by the principle of freedom of economy, meaning that business activities generally do not require a specific permit or license. Moreover, German law usually does not make a distinction between Germans and foreign nationals regarding investments or the establishment of companies.

**Competition.** Germany is home to a legal environment rightly renowned for its stability and transparency. The World Economic Forum ranked Germany among the leading countries of 144 competitors for its judicial independence. Solid codifications and an effective enforcement system provide investors with a secure legal framework and the possibility to quickly enforce their rights. The legal stability attracts foreign companies and is to the benefit of investments and entrepreneurial activity in Germany. Laws are passed by the Bundestag, and decrees on the basis of laws are enacted by the Federal government. To control unfair market behaviour is within the responsibility of the Federal Cartel Office in Bonn. Fair competition is also safeguarded by the Act Against Unfair Competition.

*Illustration 13. Germany's International Intellectual Property Security Assessment*

**Trademarks and patents.** The German Patent- and Trademark Office is in charge of these registrations offering a strong protection. Germany is second overall in the renowned corporate law firm Taylor Wessing's Global Intellectual Property Index, just behind the United Kingdom.



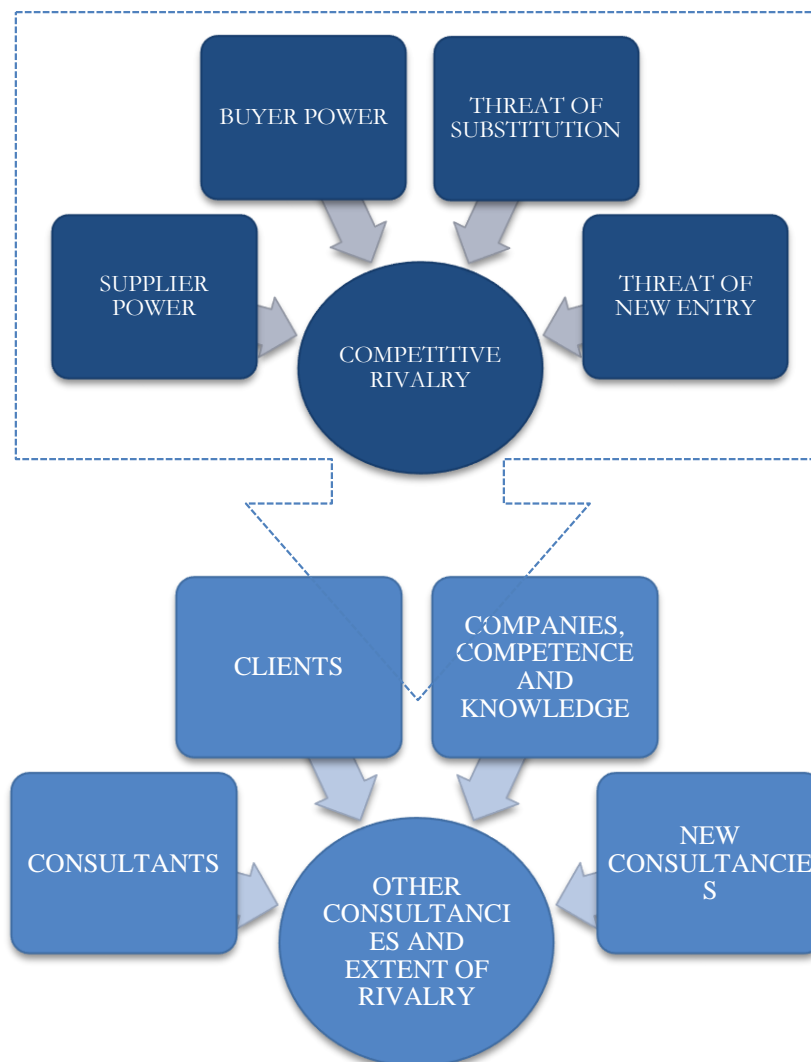
**Company formation procedures.** Swift and efficient, requiring only a few clearly defined steps to establish a new company. Company establishment costs are moderate and, more importantly, can be easily determined from the outset. The GmbH Act provides a set of model articles of association, which can be used for uncomplicated standardized formations of a GmbH. Public business registers provide transparent information pertaining to company legal representation and individual personnel authorized to conduct business transactions. This information is freely accessible to everyone.

### 3.3. Microenvironment: Porter's five forces analysis

For the purpose of being an academic paper, we saw the relevance of Michael Porter's article "how competitive forces shape strategy" where Porter's theory of the Five Forces has become a well-known model used by several companies. He discusses Five Forces that affect the expansion of firms into new markets. These are, the suppliers' power, the buyers' power, the threats of new entrants, the threat of substitutes and competitive rivalry in the industry. Porter believes that the company can create an optimal and well-rounded strategy that treats the crucial parts of entering a new market. The reason why we chose Porter's model is because it has been of relevance to several industries and is well known and used. We seek to use Porter to analyse the German consulting market to give us a picture of what factors are crucial for entering the market.

This is the basic Porter's Five Forces Model. For our purpose of analysing the German consulting industry we have modified it in the following way:

*Illustration 14. PORTER 5 FORCES Analysis*



### *3.3.1. Supplier power: Consultants*

This is the power of suppliers to drive up the prices of EOS inputs.

For the German Consulting Industry suppliers are one major part of companies' value chain. In this case we will refer to consultants as suppliers because they are the ones who provide services to Eos Project Management.

Firstly, we need to take into account the image and quality of the service. Companies like EOS strive to recruit the most talented consultants for their business, which can be a problem if the supply of these people is limited. For certain positions there are only few people in the world who have the knowledge and experience enough to perform a concrete task, so it is important to select the appropriate candidates and to retain them within the company.

On the other hand, consulting firms like EOS must be very careful when operating in a market like the German one, because the entrepreneurial spirit is higher than the one in Spain and consultants might work for a short period of time for a firm and then leave it to start their own business. What is more, those same consultants might start working directly to the hiring company instead of doing it through Eos Project Management; a direct contract is always more attractive than a subcontract one. For this reason EOS should reinforce its brand name and reputation in order to retain its consultants by making them dependent to the firm. If the consultants leave the company, they lose that knowledge and experience.

In the case of the German market, the number of consultants is higher than the one in Spain due to the more skilled workforce of the country. The main field of operations for EOS is engineering, field in which Germans are specialized. So we might assure that the number of suppliers (consultants) in this market is high. However, each person will be always difficult to substitute and costly to change.

The consultants' bargaining power is moderate to high as they usually can strongly negotiate about their salary and working conditions. On the other hand, the firm's power to substitute them might be high if the market is known. However, as we are entering for the first time the German Consultancy Market, this can be reduced as EOS does not know well the German market and its suppliers (consultants).



### *3.3.2. Buyer power: Clients*

This is the power of buyers to drive down EOS prices.

We understand for clients the firms that request EOS Project Management particular profiles for open positions within their workforce.

Clients might act on a regular basis if they already know EOS and its reputation or just occasionally. As we are entering a new market with new firms, at the beginning those agreements will be only sporadic. EOS needs to work on its client-relationship in order to build strong agreements and turn the occasional demand into a permanent one, in which companies take Eos Project Management into account for any selection process.

However, Eos should be careful with which companies it makes agreements. They must be high reputation companies with high operating income so that Eos makes sure it will get paid on time and that it will contribute to reinforce its image and brand name.

The bargaining power of clients might be high if their reputation and profits are high, because Eos will be willing to work with them.

In this case the type of service is very heterogeneous because each person delivers a different one even though being in the same position in the very same firm. The service's quality is more important than cutting costs, which means that price sensitivity is low.

We conclude by saying that the buyer power is medium, depending on the client's reputation and performance.

### *3.3.3. Threat of substitution: Companies, competence and knowledge*

This is the extent to which different services can be used in place of our own, limiting the company's profit.

Eos Project Management should be based on those services the German market is currently demanding. If the company is not operating in those sectors yet, it must focus on them in order to provide the services companies are demanding.

For example, EOS has just start working in the automobile sector, which is one of the most important in Germany, so the company will need to focus on that, by making market

researches, visiting automation companies, recruiting field experts, etc.

There is some cross-service substitution based on the fact that clients might decide to subcontract other company instead of EOS just because of cheaper costs and reputation; no matter if the quality of the service is worsened. However, in most cases quality will be the most important feature.

In the German Consulting Market the ability to “trade” is very high. Consulting companies can “import” and “export” consultants from all over the world, being that easier if it is done within the borders of the European Union (no need to get a special visa).

We can conclude the analysis of this force by saying that the threat of substitution might be high at the beginning but being reduced as the company’s reputation grows.

#### *3.3.4. Threat of new entry: New consultancies*

This is the ease with which new competitors can enter the market if they see it profitable; and then drive EOS prices down.

Entering the market is not very expensive due to the reduced initial capital investment needed for starting a new company. However, what it is really difficult to obtain is knowledge. Experience is also needed, and training is difficult to obtain (depending on the position)

We believe economies of scale are not important in the consultancy industry although there might be a sense of cutting costs by hiring the experienced consultants who can do the job at a faster time than a junior consultant.

Service differentiation is important in this industry. Fostering the brand name and creating an identity in the German consulting industry can entail great costs for the new entrant; because a good brand name and the building of a reputation are needed for the company’s credibility. It is also crucial to distinguish EOS services from others even though it might be the same type of service. We conclude the analysis of this dimension by stating that there are low to medium entry barriers for entering the German Consultancy Industry.

### 3.3.5. *Competitive rivalry: Other consultancies and extent of rivalry*

This is the strength of competition in the industry. Porter names this as “jockeying for position” –using tactics to gain a favourable position against the rivals.

Firstly, we need to remark that the number of competitors in the industry is very high and that there are many similarities among them.

On the other hand, the growth of the industry has not been high in the last years.

The most important part of this force is the loyalty of customers and the opportunity costs the company might face if it does not operate well in the market.

We also need to take into account that rivals are different and act different; they always try to be one step ahead.

The four main global consulting companies that represent a major threat and competence to Eos Project Management when operating in Germany are:



ALTEN. More than 1500 employees all over the world. The 70% of its workforce are engineers and it counts with a pool of 18.000 consultants. Alten has presence in 20 countries in the following sectors: Aeronautical, Aerospace, Automotive, Security and Defense, Energy, TIC, Electronics, Railways, Marine, Banking and Insurance, Telecommunications, Services and Distribution, Industrial Equipment and Processing Industries. With a turnover worth 1.540 million euros, it is one of the biggest competitors of Eos Project Management.



RDT. This consulting company is diversified in the following sectors: Engines and Turbines, Aeronautics, Automotive, Industry, Petrochemistry, Plant engineering, Wind, TIC, Railway, Aerospace, Equipment goods. With 110 employees and a turnover worth 6 million euros it represent almost the same company profile as Eos.



CT ENGINEERING. The CT Engineering group is an international engineering group with offices in Europe, America, Asia, and a leading supplier of industrial companies in the aviation, automotive, rail, marine, industrial plant, and renewable energy sectors. It is present in Australia, Belgium, Brazil, Canada, China, France, Germany, India, Portugal, the UK, and the United States. Its turnover was 63 million euros in 2013.

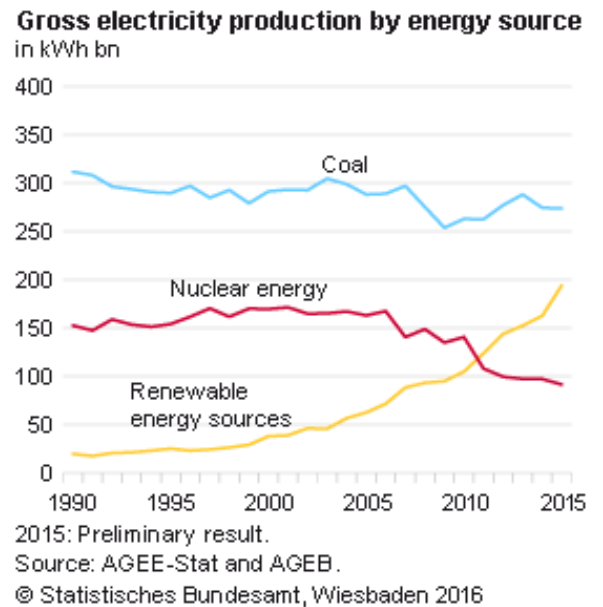
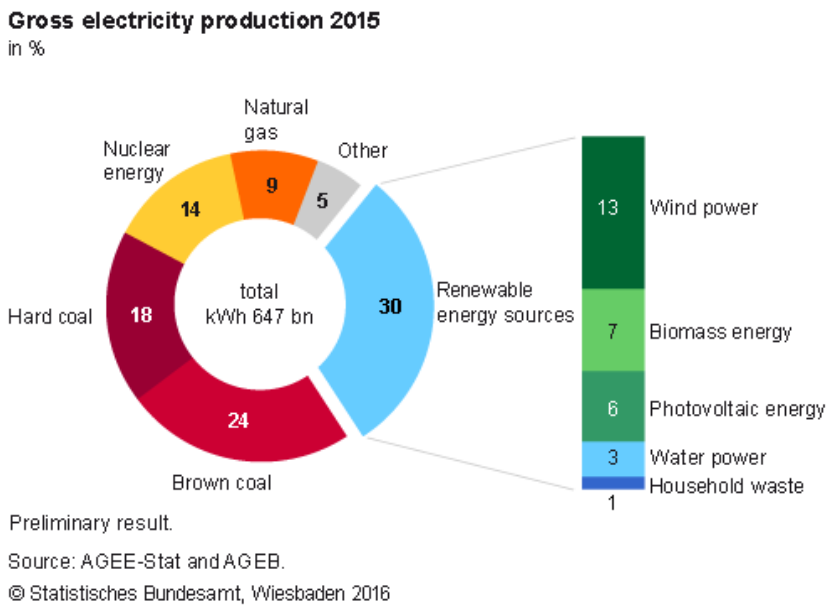
### 3.4. Energy Sector in Germany

The German Federal Government intends to reduce greenhouse gas emissions by 40% until 2020 from 1990. According to experts, this can only be done by shutting down old coal-fired power plants one by one.

In 2015 approximately 42% of the total gross electricity production was based on coal. This is a marked decrease from 1990 when brown and hard coal accounted for 57% of the power generated.

Coal still was the most important energy source in 2015 but the importance of renewable forms of energy is on the rise: while renewable energy sources had accounted for only just under 4% of total energy production in 1990, their share had risen to as much as 30% by 2015. Nuclear power, in contrast, is becoming less important: in 1990, 28% of the total gross electricity produced came from nuclear power plants but that figure was down to 14% by 2015.

*Illustrations 15 and 16. Germany's Gross electricity production distribution*



#### *3.4.1. Renewable energy sector in Germany*

In Germany, electricity from renewable sources is supported through a feed-in tariff. The criteria for eligibility and the tariff levels are set out in the Act on Granting Priority to Renewable Energy Sources (EEG). According to this Act, operators of renewable energy plants are statutorily entitled against the grid operator to payments for electricity exported to the grid. The EEG also introduced the so-called market premium and the flexibility premium for plant operators who directly sell their electricity from renewable sources. Moreover, low interest loans for investments in new plants are provided for by different KfW-Programmes.

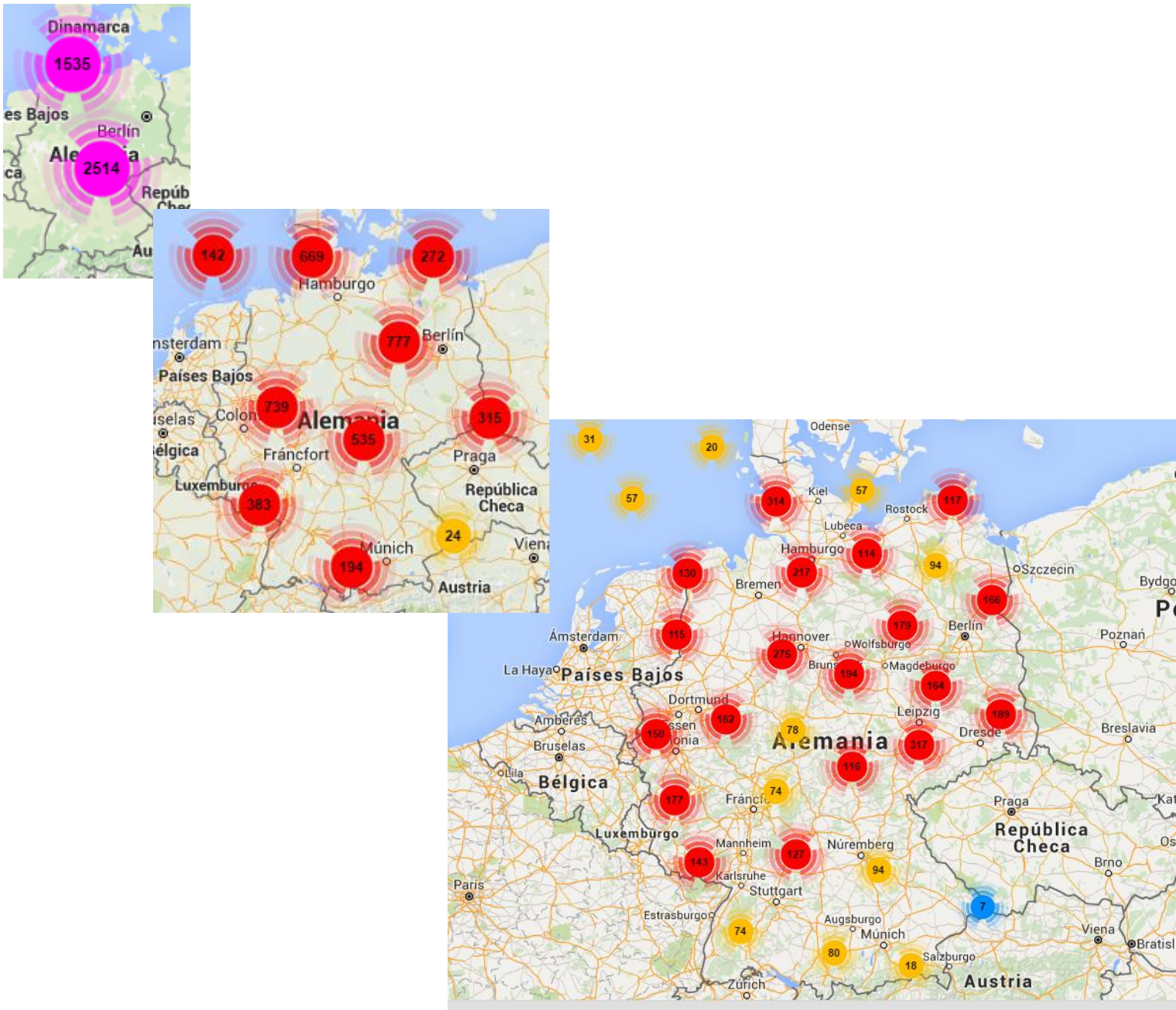
Plants for the generation of electricity from renewable sources shall be given priority connection to the grid. Furthermore, grid operators are obliged to give priority to electricity from renewable sources when purchasing and transmitting electricity. Moreover, those interested in feeding in electricity may demand that the grid operator expands his grid.

Germany provides policies for the promotion of renewable energy sources covering training, certification and research programmes, a self-commitment of public authorities, the support of district heating networks and the introduction of building obligations regarding the use of heat produced from renewable energy.

### 3.4.2. The German wind energy industry

Germany is the European top country in wind industry and the third in the world; only China and the United States have wider wind power capacities. Germany represents the 10% of the global wind energy produced. However, this renewable source of energy is unequally distributed across the country due to geographical and practical reasons.

*Illustration 17. Wind power distribution in Germany*



During 2015, 13,805.2 MW of wind power was installed across Europe, 5.4% more than in the previous year. 12,800.2 MW of it was in the European Union. Germany was the largest market in 2015 in terms of annual installations, installing 6,013.4 MW of new capacity, 2,282.4 MW of which was offshore (38% of total capacity installed in Germany). Almost half of the new capacity installed in 2015 came from the pioneering markets of Germany and Denmark. This is mainly due to the stability of the regulatory frameworks in these countries, which gives investors visibility on future projects' cash flows and favours investments in wind energy.

This gives us a clue about the close future of the wind industry in Germany. Companies are focusing on the offshore wind farms. In general, a power generating facility which contains a number of wind turbines is called a “wind farm”. The basic elements of the wind farm are wind turbines, monitoring facilities, substations and transmission cables. If they are offshore, wind farms also need port facilities for maintenance.

Recently, particularly in Europe, offshore wind farms have gained higher market shares as a result of supportive government policies, inspired by the idea that offshore wind is faster and more stable than onshore wind. However, the capital and maintenance costs of offshore wind farms are several times higher than for onshore wind farms.

*Table 2. Capital cost comparison for typical onshore and offshore wind power systems*

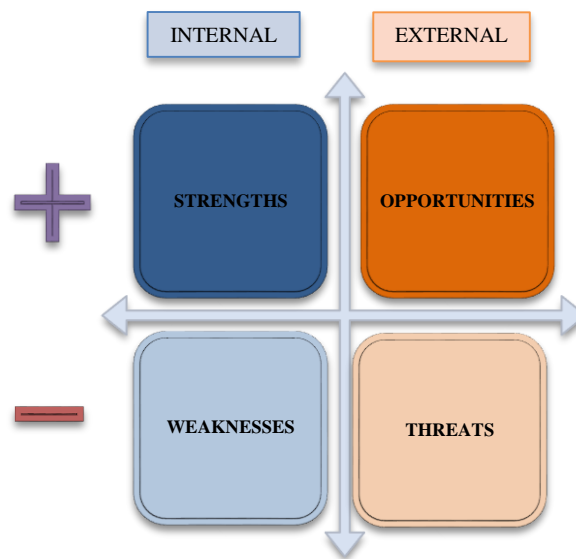
Cost share of: (%)	Onshore	Offshore
Wind turbine	64-84	30-50
Grid connection	9-14	15-30
Construction	4-10	15-25
Other capital	4-10	8-30
Capital cost (USD/kW)	1 280-2 290	2 700-5 070

Despite wide variation in the strength and speed of wind, the world's total wind energy resource is extremely large. One estimate suggests that using only 1% of the planet's land area for wind energy would be enough to equal roughly all power-generation capacity worldwide today (WEC, 2013). Offshore wind generation offers even greater resource potential, as well as less environmental impact, than onshore wind. The combined global potential of onshore and offshore wind is estimated to be at least 95 terawatts (TW) (WWEA, 2014).

### 3.4.3. SWOT Analysis: Offshore wind industry

Following the analysis, we will focus our study on the German offshore wind market. In order to do so, we should deeply reflect on our firm's strengths and weaknesses as well as opportunities and threats in the field of interest. We will use the SWOT analysis, a tool created by Albert S Humphrey in the 1960s that is still useful nowadays.

*Illustration 18. SWOT Analysis*



#### 3.4.3.1. Strengths

Eos Project Management has experience in the wind sector all over the world. This gives us a technical knowledge difficult to obtain, as well as performance expertise.

What Eos does better than anyone else is finding the appropriate person for each case and adapting its service to each situation. This flexibility is what most businesses that request Eos services are looking for.

The low-cost resource that Eos can draw upon that others cannot are salaries. The major part of the consultants of Eos are remunerated by Spanish salaries, which in any case are lower than German ones. So companies can reduce costs by using Eos services instead of hiring local consultants whose salaries will be higher.

Finally, one feature that makes Eos strong is its flexibility when it comes to cover a concrete position. They usually last less than a week to contact, interview and prepare the candidate to join a project.



#### *3.4.3.2. Weaknesses*

One great weakness of Eos in this case is the language barrier. Only few of Eos' consultants know German or might improve their skills on the language, so this is a major barrier that is needed to be overcome in order to operate in the country. However, most of Eos' consultants are able to perfectly speak English, which could be helpful.

Another weak point Eos has is its reputation. The company is well known in countries like Mexico, South Africa, Spain or France, but its presence in Germany has been limited until these days. However this can be seen as an opportunity because Eos Project Management has now the chance to build a good reputation there.

#### *3.4.3.3. Opportunities*

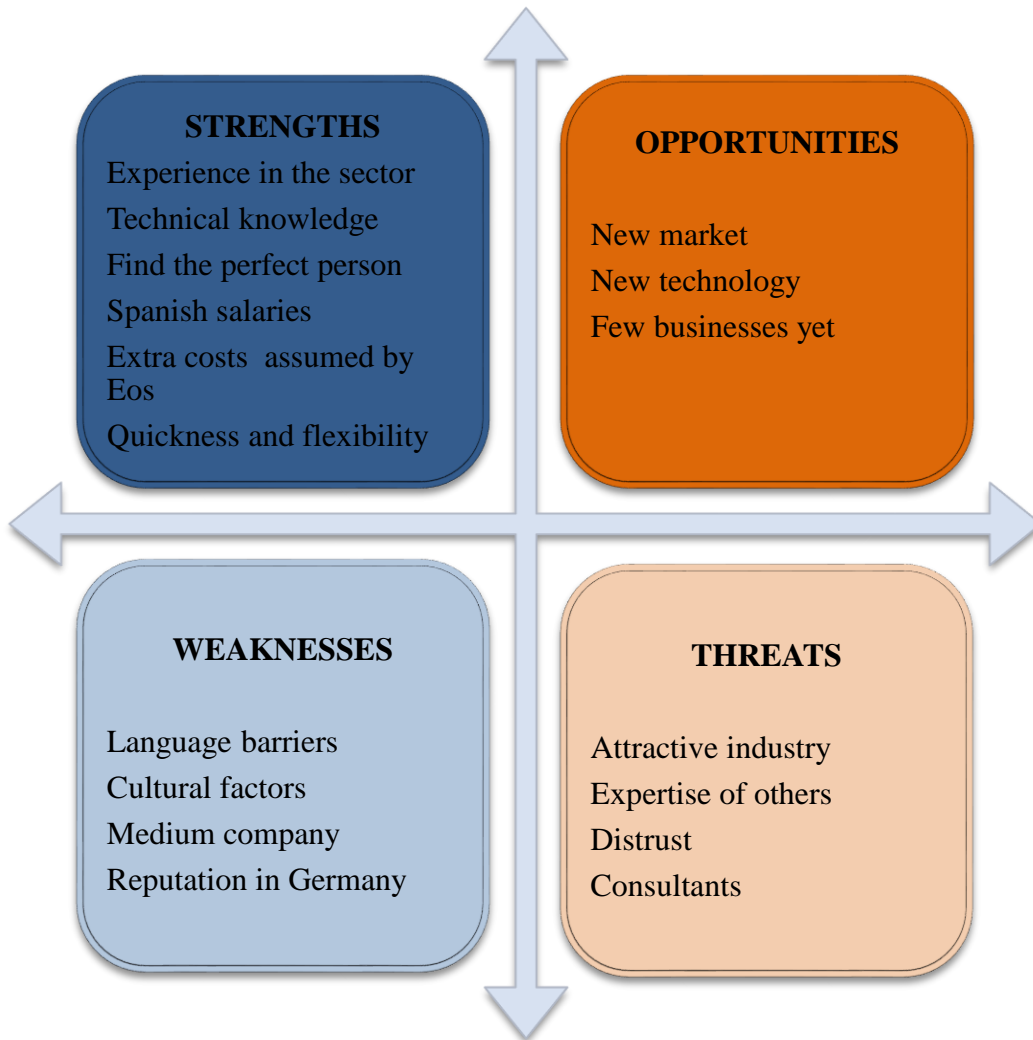
As part of the German government's commitment to reduce CO<sub>2</sub> emissions by 2020 to 40% below 1990 levels, the German government adopted a draft Renewable Energy Act (Erneuerbare-Energien-Gesetz – "EEG") in December 2007. The Act, which will replace the existing EEG, is aimed at further boosting electricity generation from renewable sources in Germany and, in particular, offshore wind farm projects around Germany's North Sea and Baltic Sea coast. For energy companies and investors keen to get involved in German offshore wind farm projects this might be the biggest opportunity. There are not so many business operating in the sector yet so the market share is not distributed, neither reputations are built.

#### *3.4.3.4. Threats*

As previously said, the obstacles Eos Project Management could face are language barriers, the company's size and distrust because of the lack of reputation.

Competitors are trying to quickly gain expertise through the intervention in similar projects. Also they are trying to position themselves on the German energy consulting market through business strategies and marketing plans.

*Illustration 19. SWOT Analysis of Germany's Offshore Wind Industry*



## 4. ACTION PLAN

Eos Project Management needs to develop a short-term plan in order to enter in the German Offshore Wind Industry in the sector's young phase.

### 4.1. Negotiation strategy

Before starting the arrangement of operation details Eos Project Management should develop a strategy and steps to follow for its entrance in the German consulting industry.

#### 4.1.1. *Consultants: Trust*

Individuals choose a company as a potential employer depending not only on the economic benefits it offers, but on its reputation. This matters especially for an experienced worker and concerned about the development of his career. The reputation of the brand as a reason to seek employment in a company is the second motivator, behind the description of employment and the compensation package. Eos needs to readapt its corporate web page to the country framework, because what potential consultants will do when hearing Eos name for the first time is visiting its webpage. Once the candidate is selected Eos needs to make personal interviews. For doing so it is recommended to travel to Germany and continue the process "in situ". If the candidate comes from Spain, the interview should be done in a central point like Madrid. When it comes to conduct the interview we recommend Eos a nice place and environment, respecting the according schedule, being self-critical and ask for the candidates' feedback. Regardless whether the candidate obtains the position or not, what matters is that the recruiting experience has been pleasurable because that person will speak about it. If Eos builds a corporate reputation the talent will come alone.

#### 4.1.2. *Competitors: Imitation*

Following Porter's analysis, Eos should carefully analyse their competitors or potential ones in Germany. In order to do so, we need to have a look to the top consulting companies in the country, their sales volume, connections and projects they have operated in. This should be done for two main reasons: The first one, once we have gathered all the information Eos will have to study their workforce profiles through different platforms (i.e. LinkedIn). In every company there are always discomfoted workers from whom Eos should take advantage on. Furthermore, we will need to identify those profiles because maybe those workers are willing for a career change and might start working for a new company like Eos

Project Management, adding their expertise in the field and in the country. The second one, Eos should be aware who is competing against. This can be done online and offline. Attending industry trade shows and conferences, as well as joining industry associations, can be a great way to learn about who Eos competitors are and what they are offering. We need also to analyse which kind of profile competitors are hiring as consultants and the kinds of jobs competitors are looking to fill. For example, if a company is hiring a wind project manager, they will include information about exactly what technologies the candidates need to know as well as experience and skills; which tells us how they operate. What is more, we need to look closely to the positions they are hiring: if they are looking for a patent attorney, they could be working on some big new inventions. If they are hiring for several HR, they may be preparing to expand overall.

#### *4.1.3. Clients: Building relationships*

The right choice of a partner is a key factor in the process that Eos started; we refer as partner to suppliers or clients, those who are going to undertake the project together with Eos Project Management. Fairs are an excellent showcase to start meeting suppliers or even potential clients; but EOS should distrust those who want a deal on the spot. Before initiating an agreement, we need to seek information about that potential supplier or client: company size, production, talking to companies who have worked with them, his financial solvency and compliance with deadlines. Having made the decision, it is essential that a relationship of trust and knowledge is created, both mutual and product or service offered and the market. For the Eos to strengthen the company's name and start building a reputation in Germany, making it more competitive, it is crucial that the chosen partner has a sound network of contacts and ability to expand, as well as financial stability.

#### *4.1.4. International tenders: Differentiation*

Is EOS a consolidated company, flexible, specialized and production capacity? If so, it will fit the profile of the companies than win tenders in international competitions. This is not an easy task because wanting to join this select club implies an active search for project information and business opportunities. Bids can be public or private and, at first, one will find them published in the official gazettes, websites of government agencies and conveners. In order to participate in tenders Eos Project Management should forget about the protectionism of the state and go outside; knowing that the cards that will make Eos win the game are basically the price and the quality offered.

## 4.2. Practical case: The Wikinger Project

Eos Project Management has identified a great opportunity in the offshore wind German market: The Wikinger Project. This project is conducted by Iberdrola, a Spanish company, which makes negotiation much easier for Eos than doing so with a German one.

Iberdrola's net profit grew by 3.3% in 2015, reaching 869 million euros. The multinational operates in different fields within the energy sector such as: Networks (46%), Liberalised Gen & Supply (27%), Renewables (22%) and Regulated Generation (5%).

In this case the area of Iberdrola in which Eos Project Management should try to enter is Iberdrola Renewables. The Wikinger Project is Iberdrola's first offshore wind project in Germany, which construction started in 2014 and still ongoing today. At €1.4 bn, Wikinger Offshore Windfarm is one of the Iberdrola Group's single largest investment projects this decade, and is anticipated to create benefit across the entire supply chain, in addition to supporting hundreds of long-term highly skilled jobs. More than 100 contracts have been signed, and from these German, British and Spanish companies (amongst other nationalities) have been involved in the tender processes.

The Iberdrola Group counts with a wide expertise in the construction of wind farms. In fact the group has constructed and operated several wind projects all over the world:

- Wind Farms in Spain: El Andévalo (Huelva), El Marquesado (Granada), Maranchón (Guadalajara), Higuera (Albacete), Sisante (Cuenca).
- Wind Farms in the United Kingdom: Harestanes, Duddon Sands I, II, III, IV and V.
- Wind Farms in the United States: Farmer's City, Pebble Springs, Groton (New Hampshire), Manzana (California), Peñascal I (Texas), Peñascal II (Texas).
- Wind Farms all over the world: Noblesfontein (South Africa), Ngong II (Kenia), Mel (Brazil), Bee Nee Stipa (Mexico), Kisigmand (Hungary), Skopies (Greece), Taverna (Italy), Catefica (Portugal), La Ventosa (Mexico).

Eos Project Management has worked together with Iberdrola in other projects such as:

- Ensenada Combined Cycle (Mexico)
- Dulces Nombres Combined Cycle (Mexico)
- Salamanca Cogeneration Plant (Mexico)

*(See Appendix II. Projects)*

#### 4.2.1. *Description*

The Wikinger Offshore Windfarm is a technically challenging project with difficult sea-bed conditions and deep waters. Located in the Baltic Sea, approximately 75 km from the mainland close to the Island of Rügen, Wikinger is in the northern part of an area known as Westlich Adlergrund that the German authorities have designated as a Priority Offshore Development Area. The site covers 34 km<sup>2</sup> and will host 70 Adwen AD5-135 wind turbines, generating up to 350 megawatts. At 5 megawatts, these are the largest turbines ever to be installed on an Iberdrola project.

#### 4.2.2. *Eos operations*

Although the Offshore Wind Farm is already in the construction phase, Eos Project Management should provide specialists in the following areas, in order to establish a reputation and make Iberdrola aware of its scope capabilities:

Initially, they should provide Engineering services such as Basic and detailed Engineering

- ✓ Technical and Environmental Reports
- ✓ Generation of technical documentation for permits and licenses.
- ✓ Product Engineering
- ✓ Process Engineering
- ✓ Programming / Automata / Calculation
- ✓ Electric Engineering / I&C
- ✓ Quality / HSE

Secondly, EOS should provide Supervision along the whole project:

- ✓ Site Supervision (construction, Commissioning and Start-Up and Operation)
  - Electricity
  - Instrumentation & Control
  - Quality / HSE
  - Mechanic / Turbines
  - Piping / Welding
  - Operation
- ✓ Instrumental specialist teams in the calibration and commissioning of instruments.

*Illustration 20. EOS' potential scope in the Wikinger project*



Finally, once the project is finished and commissioned, Eos should provide the Operation and Maintenance services, which has the longest duration. Monitoring facilities / Reporting

- ✓ Accounting/ Insurance/ Tax
- ✓ Subcontracts management and coordination
- ✓ Production deviations diagnosis
- ✓ Alarm and incidents management
- ✓ Planning and Monitoring
  - Preventive
  - Corrective
- ✓ Spare parts and stocks management

The firm should deliver a successful performance in all the stages of the project because, depending on it, Iberdrola will take EOS into account for future projects as well as the provided professionals.

What is more, EOS should take this project as an opportunity to demonstrate to any involved firm its ability to operate wide projects in an international contest.

#### 4.2.3. Cost analysis

Before entering any project, Eos should carefully analyse the costs associated to the incorporation of new consultants. In this case we assume the consultants will be expatriated from Spain to Germany.

For the offshore wind project in Germany, we have made a cost simulation for three different positions:

- Low: Operator
- Medium: Supervisor
- High: Manager

We have considered twelve months timing with twenty working days per month. The rotation of the workers will be 90 days in Germany, 15 days in Spain.

When the negotiations start, Eos Project Management would attend the meetings with four or five profiles for each position and their respective tariffs. It would not be easy to reach an agreement because both companies are profit-seekers. From those initially presented profiles, some will be rejected and others hired.

In order to build up the tariffs, Eos Project Management should take into account the following costs:

- ✓ **Administration – Structure:** Estimated as the 25% of the salary of two administrators at EOS' offices. This includes the time and effort dedicated to the profile search, contact, evaluation and decision.
- ✓ **Advisory:** Undertaken by a local firm called IGL. The cost estimate is 40'00€ per month for each position.
- ✓ **Visa:** Not necessary as Germany and Spain are under the European Union framework.
- ✓ **Medical examination:** Compulsory for each consultant once a year. The cost is 32'00€.
- ✓ **Insurance:** In order to cover the employee from accidents Eos should hire an accident insurance, which costs 70'48€ per year. Furthermore, the worker should have also a travel and medical insurance rated at 296'97€ per year.
- ✓ **Base salary:** This is the salary the employee will receive. For each position we have simulate the following salaries:
  - Operators: 2.500'00€ monthly / 30.000'00€ annually



- Supervisors: 2.750'00€ monthly / 33.000'00€ annually
- Managers: 3.500'00€ monthly / 42.000'00€ annually
- ✓ **Expatriation plus:** For positions abroad Eos Project Management adds an expatriation plus to the consultant's base salary. In this particular case, regardless the position, the employee will receive 1.000€ per month.
- ✓ **Social Security:** The Social Security Eos Project Management should pay to the Spanish administration is the 31'55€ of the base salary of each employee, for a maximum base of 3.642€.
- ✓ **IRPF:** Personal Income Tax (PIT). Individuals working abroad within the borders of the European Union are exempted of this tax due to the article 7p of the Law 35/2006 of the 28<sup>th</sup> November. So this cost will be null.
- ✓ **House renting:** Eos should provide each consultant with a flat in the nearest city to the project. In this case we looked for a two bedroom flat in Sassnitz. The renting price is 645€ per month.
- ✓ **Transport:** An additional pay of 200€ will be given to the consultant in order to defray the costs associated to transport (flights between rotations, metro, train, taxi).
- ✓ **Hotel:** The first three weeks the consultant will be staying in a hotel during the adaptation phase.
- ✓ **Car:** The necessary kind of car in this case is a 4x4 one, due to the fact that consultants have to travel through the park which is not paved.
- ✓ **Petrol:** Eos Project Management finances 0'10€/km with a maximum of 60 km per day. This means Eos has to assume a cost of 120'00€ per month.
- ✓ **Computer:** A basic laptop will be provided to each consultant. The approximate price will be 450€.
- ✓ **Internet:** The laptop will have internet access, which adds a cost of 150'00€ per year.
- ✓ **Mobile phone:** A basic mobile phone will be provided to each consultant. Assuming unlimited local phone calls the costs will be 50'00€ per month.
- ✓ **EPIs:** Individual Protection Equipments will be provided to each worker. This costs adds 1000'00€ per year (83'33€ per month).
- ✓ **PRL Education:** In order to meet the constructor requirements, it is compulsory that the consultants pass a PRL Education course special for wind farm constructions. The course is online and it adds a cost of 10'00€.

Table 3. Consultant's cost simulation in the Wikinger project

Type of cost	Description	Amount	MONTHLY			ANNUALLY		
			Operator	Supervisor	Manager	Operator	Supervisor	Manager
<b>Administration - Structure</b>	25% salary of two administrators = 500€ month	500,00 €	500,00 €	500,00 €	500,00 €	6.000,00 €	6.000,00 €	6.000,00 €
<b>Advisory (IGL)</b>	40€ per month	40,00 €	40,00 €	40,00 €	40,00 €	480,00 €	480,00 €	480,00 €
<b>Visa</b>	Not necessary	- €	- €	- €	- €	- €	- €	- €
<b>Medical examination</b>	32€ compulsory	32,00 €	32,00 €	32,00 €	32,00 €	32,00 €	32,00 €	32,00 €
<b>Insurance</b>	Accidents (70,48€/year), Travel and medical (296,97€/year)	30,62 €	30,62 €	30,62 €	30,62 €	367,45 €	367,45 €	367,45 €
<b>Base Salary</b>	12 pays. Depends on position	- €	2.500,00 €	2.750,00 €	3.500,00 €	30.000,00 €	33.000,00 €	42.000,00 €
<b>Expatriation plus</b>	1000€ per month	1.000,00 €	1.000,00 €	1.000,00 €	1.000,00 €	12.000,00 €	12.000,00 €	12.000,00 €
<b>SS employer</b>	31,55% (Base max 3642€)	31,55%	788,75 €	867,63 €	1.104,25 €	9.465,00 €	10.411,50 €	13.251,00 €
<b>IRPF</b>	Art 7p	- €	- €	- €	- €	- €	- €	- €
<b>House renting</b>	Two bedrooms flat, 645€ per month	645,00 €	645,00 €	645,00 €	645,00 €	7.740,00 €	7.740,00 €	7.740,00 €
<b>Transport</b>	90/15 Rotation 200€ per month	200,00 €	200,00 €	200,00 €	200,00 €	2.400,00 €	2.400,00 €	2.400,00 €
<b>Hotel</b>	3 first weeks	1.205,50 €	1.205,50 €	1.205,50 €	1.205,50 €	1.205,50 €	1.205,50 €	1.205,50 €
<b>Car</b>	4x4 Necessary	16.547,35 €	1.378,95 €	1.378,95 €	1.378,95 €	16.547,35 €	16.547,35 €	16.547,35 €
<b>Petrol</b>	0,10€/km - 60km/day	120,00 €	120,00 €	120,00 €	120,00 €	1.440,00 €	1.440,00 €	1.440,00 €
<b>Computer</b>	450€ basic	450,00 €	450,00 €	450,00 €	450,00 €	450,00 €	450,00 €	450,00 €
<b>Internet</b>	150€ per year	12,50 €	12,50 €	12,50 €	12,50 €	150,00 €	150,00 €	150,00 €
<b>Mobile phone</b>	50€ per month	50,00 €	50,00 €	50,00 €	50,00 €	600,00 €	600,00 €	600,00 €
<b>EPIs (Individual Protection Equipments)</b>	1000€ per year	83,33 €	83,33 €	83,33 €	83,33 €	1.000,00 €	1.000,00 €	1.000,00 €
<b>PRL Education</b>	10€ online	10,00 €	10,00 €	10,00 €	10,00 €	10,00 €	10,00 €	10,00 €
			<b>9.046,65 €</b>	<b>9.375,53 €</b>	<b>10.362,15 €</b>	<b>89.887,30 €</b>	<b>93.833,80 €</b>	<b>105.673,30 €</b>

In theory, for the proposed mark-up of 15% for each position, Eos Project Management should price the positions as following:

- Operator 10.403'65€ (monthly) / 103.3070'40€ (annually)
- Supervisor 10.781'85 (monthly) / 107.908'87€ (annually)
- Manager 11.916'47€ (monthly) /121.524,30€ (annually)

As we can see in the *table n° 4* there is not a significant salary gap between the operators and the supervisors. However, we there is a noticeable pay difference between both and the manager position.

*Table 4. Theoretical consultant's profit simulation in the Wikinger project*

	MONTHLY			ANNUALLY		
	Operator	Supervisor	Manager	Operator	Supervisor	Manager
REVENUE	10.403,65 €	10.781,85 €	11.916,47 €	103.370,40 €	107.908,87 €	121.524,30 €
COSTS	9.046,65 €	9.375,53 €	10.362,15 €	89.887,30 €	93.833,80 €	105.673,30 €
PROFIT	1.357,00 €	1.406,33 €	1.554,32 €	13.483,10 €	14.075,07 €	15.851,00 €
MARGIN	15,00%	15,00%	15,00%	15,00%	15,00%	15,00%
Mark-Up	15,00%	15,00%	15,00%	15,00%	15,00%	15,00%
Mark -Up Revenue	10.403,65 €	10.781,85 €	11.916,47 €	103.370,40 €	107.908,87 €	121.524,30 €
Revenue Deviation	- €	- €	- €	- €	- €	- €
Margin Deviation	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

In practice, agreements between companies are difficult to close. In this particular case the prices Eos Project Management would offer to Iberdrola are:

- Operator 10.500'00€ (monthly) / 100.000'00€ (annually)
- Supervisor 11.500'00 (monthly) / 110.000'00€ (annually)
- Manager 12.500'00€ (monthly) /120.000,00€ (annually)

The amounts are rounded out for practical reasons.

*Table 5. Practical consultant's profit simulation in the Wikinger project*

	MONTHLY			ANNUALLY		
	Operator	Supervisor	Manager	Operator	Supervisor	Manager
REVENUE	10.500,00 €	11.500,00 €	12.500,00 €	100.000,00 €	110.000,00 €	120.000,00 €
COSTS	9.046,65 €	9.375,53 €	10.362,15 €	89.887,30 €	93.833,80 €	105.673,30 €
PROFIT	1.453,35 €	2.124,48 €	2.137,85 €	10.112,70 €	16.166,20 €	14.326,70 €
MARGIN	16,07%	22,66%	20,63%	11,25%	17,23%	13,56%
Mark-Up	15,00%	15,00%	15,00%	15,00%	15,00%	15,00%
Mark -Up Revenue	10.403,65 €	10.781,85 €	11.916,47 €	103.370,40 €	107.908,87 €	121.524,30 €
Revenue Deviation	9635,25%	71814,63%	58352,75%	- 3.370,39 €	2.091,13 €	- 1.524,29 €
Margin Deviation	1,07%	7,66%	5,63%	-3,75%	2,23%	-1,44%

In the two cases Eos Project Management will not reach the mark-up of 15%: When hiring operators and managers in annual basis. However they have respectful margins: 11.25% and 13.56% respectively.

Eos might lower the mark-up depending on the firm they are willing to work with.

In this case Iberdrola is an important company at a national and international level, with energy projects all over the world. Eos should be aware of the potential market Iberdrola may open to the firm if long-term agreements are successful.

## 5. RECOMMENDATIONS AND CONCLUSION

Eos Project Management needs to think global and act local, referred as ‘glocal’ thinking by some authors.

By this we mean the company should adapt its international and exportable services around the particularities of a local culture such as Germany in this case. The process allows integration of local markets into world markets.

Once context (language, channel, and device) is understood and established with customers, the relationship can expand well beyond the basics of pre-sales, purchase, agreements and support. Creating transparency and accessibility to a wide range of services encourages customers to come back for more, and keeps Eos top of mind.

Eos should be always one step ahead of its competitors and potential ones. It would be recommended that the managers of Eos Project Management travel to Germany in order to personally meet the directors of their potential clients. By doing so, they will start building a transparent relationship from the beginning.

On the other hand, Eos Project Management needs to carefully select the consultants to work in this new market. If the company chooses to expatriate Spanish consultants, it must make sure they will perform according to the client’s expectations and also that all the consultants are able to speak correct German.

However, if the company decides to hire local consultants, German ones, it should first analyse each of the candidates. For doing that Eos Project Management has two options: The first one will be sending those German consultants to a current Eos project in other country not being Germany, so that their performance is measured. The second one, participating in a small project in Germany in which those German consultants will get a period of practice and training. After both cases, the company will decide if they are ready to join a big project such as the offshore wind ones.

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## **APPENDICES**

## APPENDIX 1

Table I. Source: Own elaboration

	COUNTRY
1	Albania
2	Andorra
3	Armenia
4	Austria
5	Azerbaijan
6	Belarus
7	Belgium
8	Bosnia and Herzegovina
9	Bulgaria
10	Croatia
11	Cyprus
12	Czech Republic
13	Denmark
14	Estonia
15	Finland
16	France
17	Georgia
18	Germany
19	Greece
20	Hungary
21	Iceland
22	Ireland
23	Italy
24	Kazakhstan
25	Latvia
26	Liechtenstein
27	Lithuania
28	Luxembourg
29	Macedonia FYR
30	Malta
31	Moldova
32	Monaco
33	Montenegro
34	Netherlands
35	Norway
36	Poland
37	Portugal
38	Romania
39	Russian Federation
40	San Marino
41	Serbia
42	Slovak Republic
43	Slovenia
44	Spain
45	Sweden
46	Switzerland
47	Turkey
48	Ukraine
49	United Kingdom
50	Vatican City

Table II. Source: Own elaboration

## POPULATION

	Country	Population (2014)	
1	Russian Federation	143.819.569	
2	Germany	80.970.732	
3	Turkey	75.932.348	
4	France	66.217.509	
5	United Kingdom	65.559.135	
6	Italy	60.789.140	
7	Spain	46.476.032	
8	Ukraine	45.362.900	
9	Poland	38.011.735	
10	Romania	19.904.360	
11	Kazakhstan	17.289.224	
12	Netherlands	16.865.008	
13	Belgium	11.231.213	
14	Greece	10.869.637	
15	Czech Republic	10.525.347	
16	Portugal	10.401.062	
17	Hungary	9.863.183	
18	Sweden	9.696.110	
19	Azerbaijan	9.535.079	
20	Belarus	9.470.000	
21	Austria	8.545.908	
22	Switzerland	8.188.102	
23	Bulgaria	7.223.938	
24	Serbia	7.129.366	
25	Denmark	5.638.530	
26	Finland	5.461.512	
27	Slovak Republic	5.418.649	
28	Norway	5.136.886	
29	Ireland	4.615.693	
30	Croatia	4.238.389	
31	Bosnia and Herzegovina	3.817.554	
32	Georgia	3.727.000	
33	Moldova	3.556.397	
34	Armenia	3.006.154	
35	Lithuania	2.932.367	1
36	Albania	2.894.475	2
37	Macedonia FYR	2.075.625	3
38	Slovenia	2.061.980	4
39	Latvia	1.993.782	5
40	Estonia	1.314.545	6
41	Cyprus	1.153.658	7
42	Montenegro	621.810	8
43	Luxembourg	556.319	9
44	Malta	427.364	10
45	Iceland	327.386	11
46	Andorra	72.786	12
47	Monaco	37.623	13
48	Liechtenstein	37.286	14
49	San Marino	31.595	15
50	Vatican City	-	
	Average	17.368.000	
	30% of 50 countries: Average of 15 least populated	1.102.573	

\*Spain and France are excluded because there are already branches on them

\*\*The Vatican City has no records of population

Table III. Source: Own elaboration

		<b>GDP</b>	
	<b>Country</b>	<b>GDP at market prices (current USD) (2014)</b>	
1	Germany	3,868,291,231,824	
2	United Kingdom	2,988,893,283,565	
3	Italy	2,141,161,325,367	
4	Russian Federation	1,860,597,922,763	
5	Netherlands	879,319,321,495	
6	Turkey	798,429,233,036	
7	Switzerland	701,037,135,966	
8	Sweden	571,090,480,171	
9	Poland	544,966,555,714	
10	Belgium	531,546,586,179	
11	Norway	499,817,138,323	
12	Austria	436.887.543.467	
13	Denmark	342,362,478,768	
14	Finland	272,216,575,502	
15	Ireland	250,813,607,686	
16	Greece	235,574,074,998	
17	Portugal	230,116,912,514	
18	Kazakhstan	217,872,250,221	
19	Czech Republic	205,269,709,743	
20	Romania	199,043,652,215	
21	Hungary	138,346,669,915	
22	Ukraine	131,805,126,738	
23	Slovak Republic	100,248,607,784	1
24	Belarus	76,139,250,365	2
25	Azerbaijan	75.198.010.965	3
26	Croatia	57,113,389,357	4
27	Bulgaria	56,717,054,674	5
28	Serbia	43,866,423,167	6
29	Bosnia and Herzegovina	18,521,475,376	7
30	Georgia	16,529,963,187	8
31	Armenia	11.644.438.423	9
32	Moldova	7,962,423,552	10
	*10 (9,6) is the 30% of 32		
	Average	174.576.664.285	

**Table IV. Source: Own elaboration**

<b>ENERGY IMPORTS</b>			
	<b>Country</b>	<b>Energy Imports (% of Energy Use) 2013</b>	
1	Ireland	83	
2	Italy	76	
3	Belgium	74	
4	Portugal	74	
5	Turkey	72	
6	Austria	64	
7	Germany	62	
8	Greece	60	
9	Hungary	55	
10	Switzerland	52	
11	Finland	45	1
12	United Kingdom	42	2
13	Sweden	29	3
14	Czech Republic	28	4
15	Poland	27	5
16	Ukraine	26	6
17	Romania	19	7
18	Netherlands	10	8
19	Denmark	3	9
20	Russian Federation	-83	NET EXPORTER
21	Kazakhstan	-107	NET EXPORTER
22	Norway	-486	NET EXPORTER
	Average	10,23	

Net energy imports are estimated as energy use less production, both measured in oil equivalents. A negative value indicates that the country is a net exporter. Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. We will take values above 50 and below -50.

**Table V. Source: Own elaboration**

<b>HDI</b>		
<b>Country</b>	<b>HDI</b>	<b>Range</b>
1 Norway	0,944	Very high
2 Switzerland	0,930	Very high
3 Ireland	0,916	Very high
4 Germany	0,916	Very high
5 Belgium	0,89	Very high
6 Austria	0,885	Very high
7 Italy	0,873	Very high
8 Greece	0,865	Very high
9 Portugal	0,830	Very high
10 Hungary	0,828	Very high
11 Russian Federation	0,798	High
12 Kazakhstan	0,788	High
13 Turkey	0,761	High

\*All of them have High or Very high values in HDI so we carry on the study

Average 0,863



Table VI. Source: Own elaboration

INTERCONNECTIONS

	Country	Borders	
1	Germany	9	
2	Austria	8	
3	Russian Federation	8	
4	Hungary	7	
5	Turkey	7	
6	Italy	5	
7	Kazakhstan	5	
8	Switzerland	4	
9	Belgium	4	
10	Greece	4	
11	Norway	3	
12	Ireland	1	1
13	Portugal	1	2

\*Just one connection is not enough

Ireland and Portugal are isolated compared to the rest

**Table VII. Source: Own elaboration****COUNTRY COMPARISON**

Country	Electricity production from			
	Hydropower (GW)	Bioenergy (GW)	Solar (GW)	Wind (GW)
Austria	39550	57740	570	3740
Belgium	270	6170	3000	4420
Germany	17130	44250	33880	57950
Greece	4280	310	2310	4210
Hungary	290	1980	0	710
Italy	54720	16320	24660	15150
Kazakhstan	7930	0	0	0
Norway	134950	1480	1020	2530
Russian Federation	169010	2800	0	0
Switzerland	37390	2460	770	120
Turkey	39620	1240	1000	9140
<b>Mean</b>	<b>45921,82</b>	<b>12250,00</b>	<b>6110,00</b>	<b>8906,36</b>
<b>Standard Deviation</b>	<b>53495,94</b>	<b>18991,22</b>	<b>11129,86</b>	<b>16115,71</b>

**Table VIII. Source: Own elaboration****STANDARDIZED VALUES**

Country	Electricity production from			
	Hydropower (GW)	Bioenergy (GW)	Solar (GW)	Wind (GW)
Austria	-0,119	2,395	-0,498	-0,321
Belgium	-0,853	-0,320	-0,279	-0,278
Germany	-0,538	1,685	2,495	3,043
Greece	-0,778	-0,629	-0,341	-0,291
Hungary	-0,853	-0,541	-0,549	-0,509
Italy	0,164	0,214	1,667	0,387
Kazakhstan	-0,710	-0,645	-0,549	-0,553
Norway	1,664	-0,567	-0,457	-0,396
Russian Federation	2,301	-0,498	-0,549	-0,553
Switzerland	-0,159	-0,516	-0,480	-0,545
Turkey	-0,118	-0,580	-0,459	0,014
<b>Minimum</b>	<b>-0,853</b>	<b>-0,645</b>	<b>-0,549</b>	<b>-0,553</b>
<b>Maximum</b>	<b>2,301</b>	<b>2,395</b>	<b>2,495</b>	<b>3,043</b>
<b>Range</b>	<b>3,154</b>	<b>3,040</b>	<b>3,044</b>	<b>3,596</b>

**Table IX. Source: Own elaboration****NORMALIZED VALUES**

Country	Electricity production from			
	Hydropower (GW)	Bioenergy (GW)	Solar (GW)	Wind (GW)
Austria	24,046	100,000	2,666	7,389
Belgium	1,000	11,579	9,766	8,551
Germany	10,892	76,870	100,000	100,000
Greece	3,353	1,532	7,750	8,192
Hungary	1,012	4,395	1,000	2,213
Italy	32,946	28,982	73,058	26,882
Kazakhstan	5,494	1,000	1,000	1,000
Norway	80,017	3,538	3,981	5,322
Russian Federation	100,000	5,801	1,000	1,000
Switzerland	22,778	5,218	3,250	1,205
Turkey	24,087	3,126	3,922	16,614

**Table X. Source: Own elaboration****WEIGHTED VALUES**

Country	Electricity production from				TOTAL
	Hydropower (GW)	Bioenergy (GW)	Solar (GW)	Wind (GW)	
Austria	24,046	100,000	2,666	7,389	23,195
Belgium	1,000	11,579	9,766	8,551	7,860
Germany	10,892	76,870	100,000	100,000	78,709
Greece	3,353	1,532	7,750	8,192	6,093
Hungary	1,012	4,395	1,000	2,213	1,936
Italy	32,946	28,982	73,058	26,882	42,263
Kazakhstan	5,494	1,000	1,000	1,000	1,899
Norway	80,017	3,538	3,981	5,322	19,591
Russian Federation	100,000	5,801	1,000	1,000	21,520
Switzerland	22,778	5,218	3,250	1,205	6,735
Turkey	24,087	3,126	3,922	16,614	12,278
Weight	0,2	0,15	0,3	0,35	1

**Table XI. Source: Own elaboration**

<b>Country</b>	<b>TOTAL</b>	<b>SELECTED</b>
<b>Germany</b>	<b>78,709</b>	
Italy	42,263	To be considered
Austria	23,195	To be considered
Russian Federation	21,520	To be considered
Norway	19,591	Not significant
Turkey	12,278	Not significant
Belgium	7,860	Not significant
Switzerland	6,735	Not significant
Greece	6,093	Not significant
Hungary	1,936	Not significant
Kazakhstan	1,899	Not significant
<b>Mean</b>	<b>20,189</b>	

## Appendix II

Economic Indicators 2016 Germany (Source: [www.tradingeconomics.com](http://www.tradingeconomics.com))

Table I: Overview






Overview	Last	Reference	Previous	Range	Frequency	
<b>GDP Growth Rate</b>	0.7 %	Mar/16	0.3	-4.5 : 2	Quarterly	
<b>Unemployment Rate</b>	4.2 %	Mar/16	4.3	0.4 : 14.2	Monthly	
<b>Inflation Rate</b>	-0.1 %	Apr/16	0.3	-7.62 : 11.54	Monthly	
<b>Interest Rate</b>	0 %	Apr/16	0	0 : 4.75	Daily	
<b>Balance of Trade</b>	26000 EUR Million	Mar/16	20200	-536 : 26000	Monthly	
<b>Government Debt to GDP</b>	71.2 %	Dec/15	74.7	54.8 : 81	Yearly	

Table II: Markets





Markets	Last	Reference	Previous	Range	Frequency	
<b>Currency</b>	1.13	May/16	1.14	0.7 : 1.87	Daily	
<b>Stock Market</b>	9953 points	May/16	9856	372 : 12375	Daily	
<b>Government Bond 10Y</b>	0.12 %	May/16	0.15	0.07 : 10.8	Daily	
<b>30 Year Bond Yield</b>	0.82 %	Feb/16	0.86	0.47 : 3.96	Daily	

Table III: GDP














GDP	Last	Reference	Previous	Range	Frequency	
<b>GDP Growth Rate</b>	0.7 %	Mar/16	0.3	-4.5 : 2	Quarterly	
<b>GDP Annual Growth Rate</b>	1.3 %	Mar/16	2.1	-7.9 : 6	Quarterly	
<b>GDP</b>	3868 USD Billion	Dec/14	3745	215 : 3868	Yearly	
<b>GDP Constant Prices</b>	703 EUR Billion	Mar/16	698	508 : 703	Quarterly	
<b>Gross National Product</b>	786 EUR Billion	Dec/15	777	389 : 786	Quarterly	
<b>Gross Fixed Capital Formation</b>	141 EUR Billion	Dec/15	139	108 : 141	Quarterly	
<b>GDP per capita</b>	39718 USD	Dec/14	39209	17464 : 39718	Yearly	
<b>GDP per capita PPP</b>	43444 USD	Dec/14	42887	31476 : 43444	Yearly	
<b>GDP From Agriculture</b>	3.77 EUR Billion	Dec/15	3.61	3.2 : 6.42	Quarterly	
<b>GDP From Construction</b>	36.92 EUR Billion	Dec/15	34.29	14.47 : 36.92	Quarterly	
<b>GDP From Manufacturing</b>	154 EUR Billion	Dec/15	157	90.56 : 157	Quarterly	
<b>GDP From Public Administration</b>	130 EUR Billion	Dec/15	124	50.63 : 130	Quarterly	
<b>GDP From Services</b>	108 EUR Billion	Dec/15	109	53.73 : 109	Quarterly	

Table IV: Labour

Labour	Last	Reference	Previous	Range	Frequency
Unemployment Rate	4.2 %	Mar/16	4.3	0.4 : 14.2	Monthly
Employed Persons	43389 Thousand	Mar/16	43324	37643 : 43389	Monthly
Unemployed Persons	2744 Thousand	Apr/16	2845	85 : 5288	Monthly
Unemployment Change	-16 Thousand	Apr/16	-3	-97 : 264	Monthly
Long Term Unemployment Rate	2 %	Dec/15	1.9	1.9 : 6.3	Quarterly
Youth Unemployment Rate	6.9 %	Mar/16	7	5.7 : 15.6	Monthly
Labour Costs	110 Index Points	Dec/15	109	78.58 : 110	Quarterly
Productivity	102 Index Points	Feb/16	103	17 : 106	Monthly
Job Vacancies	640 Thousand	Apr/16	634	57.8 : 892	Monthly
Wages	3527 EUR/Month	Dec/14	3449	1832 : 3527	Yearly
Minimum Wages	8.5 EUR/Hour	Dec/15	8.5	8.5 : 8.5	Yearly
Wage Growth	2.1 %	Dec/15	2.4	-1.4 : 2.7	Quarterly
Wages in Manufacturing	105 Index Points	Feb/16	105	7.7 : 172	Monthly
Population	81.2 Million	Dec/15	80.77	72.54 : 82.54	Yearly
Retirement Age Women	65.3	Dec/15	65.23	65 : 65.3	Yearly
Retirement Age Men	65.3	Dec/15	65.23	65 : 65.3	Yearly
Employment Change	0.3 %	Dec/15	0.3	-0.8 : 1	Quarterly
Employment Rate	74.4 %	Dec/15	74.2	63.6 : 74.4	Quarterly
Full Time Employment	29089 Thousand	Dec/15	28751	26748 : 29114	Quarterly
Labor Force Participation Rate	60.6 %	Dec/15	60.3	56.9 : 60.7	Quarterly
Part Time Employment	10513 Thousand	Dec/15	10475	6331 : 10537	Quarterly

Table V: Prices

Prices	Last	Reference	Previous	Range	Frequency
Inflation Rate	-0.1 %	Apr/16	0.3	-7.62 : 11.54	Monthly
Inflation Rate Mom	-0.4 %	Apr/16	0.8	-2.73 : 2.65	Monthly
Consumer Price Index CPI	107 Index Points	Apr/16	107	20.5 : 107	Monthly
Harmonised Consumer Prices	100 Index Points	Apr/16	100	75.5 : 100	Monthly
Core Consumer Prices	107 Index Points	Apr/16	108	69.8 : 108	Monthly
Core Inflation Rate	1.13 %	Mar/16	1.04	0.19 : 6.29	Monthly
Producer Prices	101 Index Points	Mar/16	101	26.5 : 108	Monthly
Producer Prices Change	-3.1 %	Mar/16	-3	-7.79 : 22.41	Monthly
Export Prices	104 Index Points	Mar/16	103	38 : 106	Monthly
Import Prices	96.5 Index Points	Mar/16	95.8	41.1 : 110	Monthly
Food Inflation	1.1 %	Mar/16	0.8	-3.09 : 8.22	Monthly
Cpi Transportation	104 Index Points	Apr/16	103	57.3 : 110	Monthly

Table VI: Money

Money	Last	Reference	Previous	Range	Frequency
Interest Rate	0 %	Apr/16	0	0 : 4.75	Daily
Interbank Rate	-0.25 %	May/16	-0.25	-0.25 : 14.57	Monthly
Money Supply M1	1793 EUR Billion	Mar/16	1807	65.4 : 1807	Monthly
Money Supply M2	2658 EUR Billion	Mar/16	2646	34.4 : 2658	Monthly
Money Supply M3	2700 EUR Billion	Mar/16	2692	123 : 2700	Monthly
Banks Balance Sheet	7826003 EUR Million	Mar/16	7955727	14454 : 8932191	Monthly
Foreign Exchange Reserves	175738 EUR Million	Apr/16	171266	71335 : 203337	Monthly
Loans to Private Sector	1314 EUR Billion	Dec/15	1309	172 : 2367	Quarterly
Central Bank Balance Sheet	1078 EUR Billion	Mar/16	1044	366 : 1135	Monthly

Table VIII: Trade

Trade	Last	Reference	Previous	Range	Frequency
Balance of Trade	26000 EUR Million	Mar/16	20200	-536 : 26000	Monthly
Exports	106950 EUR Million	Mar/16	99500	226 : 107492	Monthly
Imports	80922 EUR Million	Mar/16	79300	347 : 84515	Monthly
Current Account	30400 EUR Million	Mar/16	21100	-9353 : 30400	Monthly
Current Account to GDP	8.8 %	Dec/15	6.5	-1.7 : 7.6	Yearly
External Debt	4515636 EUR Million	Dec/15	4584243	1929687 : 4942767	Quarterly
Capital Flows	20202 EUR Million	Mar/16	12150	-33483 : 38488	Monthly
Foreign Direct Investment	10513 EUR Million	Feb/16	-1633	-32190 : 141352	Monthly
Gold Reserves	3381 Tonnes	Dec/15	3381	3381 : 3469	Quarterly
Crude Oil Production	44 BBL/D/1K	Oct/15	44	35 : 55	Monthly
Terrorism Index	3.44	Dec/14	1.77	1.77 : 3.44	Yearly
Tourist Arrivals	32999 Thousand	Dec/14	31545	14347 : 32999	Yearly

Table IX: Government

Government	Last	Reference	Previous	Range	Frequency
Government Debt to GDP	71.2 %	Dec/15	74.7	54.8 : 81	Yearly
Government Budget	0.7 % of GDP	Dec/15	0.3	-9.4 : 0.9	Yearly
Government Budget Value	22.8 EUR Billion	Jun/15	-8.2	-42.54 : 40.63	Quarterly
Government Spending	134 EUR Billion	Dec/15	133	88.52 : 134	Quarterly
Government Spending to GDP	43.9 %	Dec/15	44.3	42.8 : 54.7	Yearly
Government Revenues	325 EUR Billion	Jun/15	308	140 : 342	Quarterly
Government Debt	1811144 EUR Million	Dec/15	1810270	1094940 : 2280174	Quarterly
Fiscal Expenditure	302 EUR Billion	Jun/15	316	156 : 328	Quarterly
Asylum Applications	58310	Mar/16	66125	1535 : 66125	Monthly
Credit Rating	99.87			:	Monthly

Table X: Business

Business	Last	Reference	Previous	Range	Frequency
Business Confidence	107	Apr/16	107	84.6 : 115	Monthly
Manufacturing PMI	51.8	Apr/16	50.7	32 : 62.7	Monthly
Services PMI	54.5 Index Points	Apr/16	55.1	41.3 : 60.3	Monthly
Composite Pmi	53.6 Index Points	Apr/16	54	50.2 : 56.4	Monthly
Industrial Production	0.3 %	Mar/16	2	-22 : 14.9	Monthly
Industrial Production Mom	-1.3 %	Mar/16	-0.7	-6.9 : 4	Monthly
Manufacturing Production	0.7 %	Mar/16	2.1	-24 : 15.5	Monthly
Capacity Utilization	84.4 %	Jun/16	85.1	70.2 : 88.7	Quarterly
Factory Orders	1.9 %	Mar/16	-0.8	-15.7 : 27.1	Monthly
New Orders	112 Index Points	Mar/16	109	9.7 : 119	Monthly
Changes in Inventories	-8.49 EUR Billion	Dec/15	-10.67	-11.53 : 9.22	Quarterly
Bankruptcies	1842 Companies	Feb/16	1692	416 : 3755	Monthly
Corporate Profits	180 EUR Billion	Dec/15	181	90.93 : 181	Quarterly
Zew Economic Sentiment Index	11.2	Apr/16	4.3	-63.9 : 89.6	Monthly
Car Production	546500 Units	Apr/16	516100	265542 : 583399	Monthly
Car Registrations	315921 Cars	Apr/16	322913	43460 : 552865	Monthly
Competitiveness Index	5.53 Points	Dec/16	5.48	5.37 : 5.53	Yearly
Competitiveness Rank	4	Dec/16	5	4 : 7	Yearly
Corruption Index	81 Points	Dec/15	79	73 : 82.7	Yearly
Corruption Rank	10	Dec/15	12	10 : 20	Yearly
Ease of Doing Business	15	Dec/15	15	15 : 27	Yearly
Mining Production	-18.8 %	Mar/16	-19.6	-30.4 : 46.6	Monthly
Steel Production	3811 Thousand Tonnes	Mar/16	3362	907 : 4744	Monthly

Table XI: Consumer

Consumer	Last	Reference	Previous	Range	Frequency
Consumer Confidence	9.7	May/16	9.4	-3.5 : 16.8	Monthly
Retail Sales MoM	-1.1 %	Mar/16	-0.4	-4.7 : 4.1	Monthly
Retail Sales YoY	0.7 %	Mar/16	5.5	-7.8 : 9.7	Monthly
Consumer Spending	385 EUR Billion	Dec/15	384	290 : 385	Quarterly
Disposable Personal Income	458 EUR Billion	Dec/15	454	22.96 : 458	Quarterly
Personal Savings	10 %	Dec/15	9.5	7.8 : 17.3	Quarterly
Consumer Credit	225110 EUR Million	Dec/15	224617	10926 : 236957	Quarterly
Private Sector Credit	2672815 EUR Million	Mar/16	2670380	6461 : 2672815	Monthly
Bank Lending Rate	2.67 %	Mar/16	2.71	2.58 : 6.55	Monthly
Gasoline Prices	1.41 USD/Liter	Apr/16	1.37	0.91 : 2.14	Monthly
Households Debt To Gdp	53.8 % of GDP	Sep/15	53.8	34.9 : 70.9	Quarterly
Households Debt To Income	82.78 %	Dec/14	83.66	82.78 : 107	Yearly



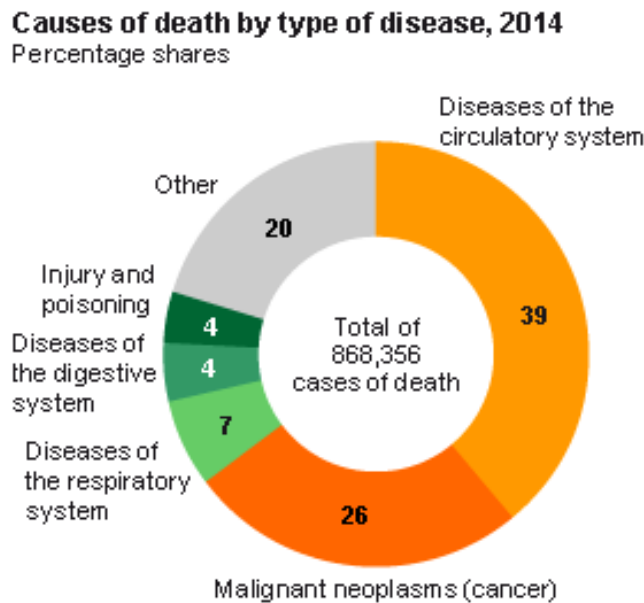
**Table XII: Housing**

Housing	Last	Reference	Previous	Range	Frequency
Construction Output	5.8 %	Feb/16	1.7	-38.9 : 48.3	Monthly
Housing Index	127 Index Points	Apr/16	126	95.5 : 155	Monthly
Building Permits	24306	Feb/16	21818	9738 : 29735	Monthly
Construction Orders	14.5 %	Feb/16	12.7	-23.2 : 25.1	Monthly
Home Ownership Rate	52.5 %	Dec/14	52.6	52.5 : 53.4	yearly

**Table XIII: Taxes**

Taxes	Last	Reference	Previous	Range	Frequency
Corporate Tax Rate	29.65 %	Dec/15	29.6	29.4 : 56.8	Yearly
Personal Income Tax Rate	47.5 %	Dec/15	47.5	44.3 : 57	Yearly
Sales Tax Rate	19 %	Dec/16	19	16 : 19	Yearly
Social Security Rate	39.56 %	Dec/15	39.46	33.35 : 42.53	Yearly
Social Security Rate For Companies	19.33 %	Dec/15	19.28	16.7 : 21	Yearly
Social Security Rate For Employees	20.23 %	Dec/15	20.18	16.65 : 21.63	Yearly

**Illustration I. Causes of death by type of disease (Germany 2014)**



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## Table XIX: Environmental indicators

Indicators of the German Strategy for Sustainable Development on the environment and the economy<sup>1</sup>

Indicator	Unit	2005	2010	2011	2012	2013 <sup>2</sup>	2014 <sup>2</sup>	2015 <sup>2</sup>
Energy productivity	1990 = 100	124.8	135.9	147.2	149.5	145.9	155.7	156.2
Primary energy consumption	1990 = 100	97.7	95.4	91.2	90.2	92.7	89.3	89.5
Raw material productivity	1994 = 100	133.8	148.2	144.2	149.5	148.3	148.8	...
Greenhouse gas emissions	1990 = 100	79.5	75.4	73.9	74.2	75.7	72.3	72.8
<b>Renewable energy</b>								
Share of final energy consumption	%	7.2	10.9	11.8	12.8	13.1	13.7	...
Share of consumption of electricity	%	10.2	17.0	20.4	23.7	25.2	27.4	32.6
Increase in land use for housing and transport <sup>3</sup>	hectare per day	114	87	81	74	73	69	...
Species diversity and landscape quality	2015 = 100	72	68	63	...	...	...	...
General government deficit	% of GDP	3.4	4.2	1.0	0.1	0.1	-0.3	-0.7
Structural deficit	% of GDP	2.0	2.1	1.6	0.4	-0.3	-0.8	-0.8
Government debt	% of GDP	66.9	81.0	78.3	79.6	77.2	74.7	71.2
Gross fixed capital formation in relation to GDP	%	19.1	19.4	20.3	20.2	19.8	20.1	19.9
Gross domestic product per capita	in 1,000 EUR (prices for the year 2010)	29.8	32.1	33.3	33.4	33.4	33.8	34.1
Intensity of goods transport	1999 = 100	110.2	112.2	110.9	108.8	...	...	...
Passenger transport intensity	1999 = 100	97.2	93.9	91.7	91.7	...	...	...
Share of railway transport in goods transport performance	%	17.2	17.8	18.5	18.2	...	...	...
Share of inland freight water transport in goods transport performance	%	11.6	10.4	9.0	9.7	...	...	...
Nitrogen surplus <sup>4</sup>	kilogram per hectare	103	95	100	101	...	...	...
Organic farming <sup>5</sup>	%	4.6	5.6	-	5.8	6.0	6.2	...
Air pollution	1990 = 100	46.8	43.0	43.3	42.0	42.5	...	...

<sup>1</sup> Update compared with the indicator report 2014.

<sup>2</sup> Preliminary results (some values estimated).

<sup>3</sup> Moving four-year average, development in the relevant year and the preceding three years.

<sup>4</sup> Moving three-year average, based on the second year.

<sup>5</sup> Proportion of farmland.

- = No figures or magnitude zero.

... = Data will be available later.

Figure n° 1. Structure of Group Iberdrola

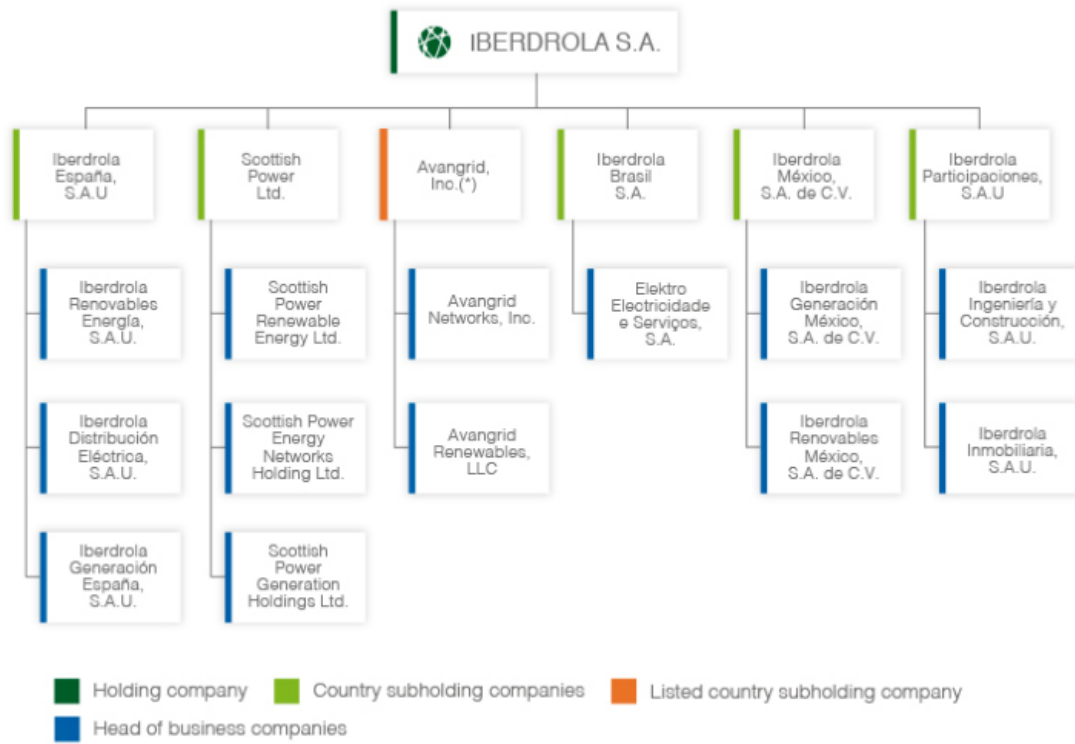
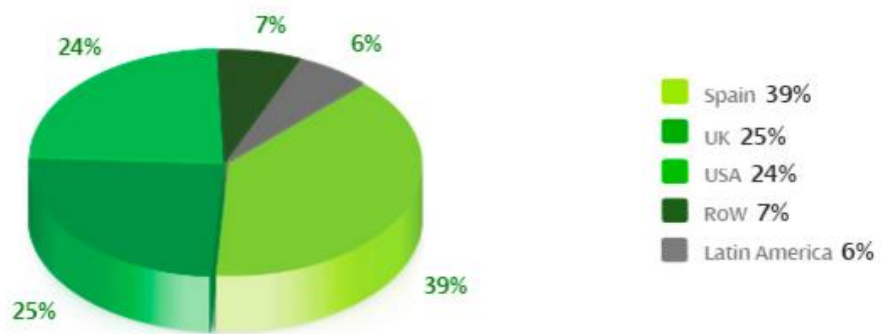


Figure n° 2. Iberdrola's renewables EBITDA by geographical area

Renewables EBITDA up to 3.1% to €441.6 million

RENEWABLES BUSINESS EBITDA BREAKDOWN BY GEOGRAPHIC AREAS (%)



## Appendix III

### RELATED EOS PROJECT MANAGEMENT PROJECTS

#### WIND POWER PROJECTS



**Project:** ALISIOS Wind Farm  
**Scope:** Civil supervision during construction  
**Location:** Costa Rica



**Project:** DAMA DE BAZA Wind Farm  
**Scope:** Development, Engineering and Construction Supervision.  
**Location:** Spain



**Project:** HARESTONES Wind Farm  
**Scope:** Assembly supervision. Logistics and Materials Management.  
**Location:** Scotland



**Project:** PARAPANDA Wind Farm  
**Scope:** Development, Engineering and Construction Supervision.  
**Location:** Spain

## OFFSHORE PROJECTS



**Project:** CASTOR Project  
Offshore Submarine Natural Gas Storage Facility  
**Scope:** Commissioning and Start-up Supervision.  
**Location:** Spain

## IBERDROLA'S PROJECTS



**Project:** SALAMANCA Cogeneration Plant  
**Scope:** Electrical Supervision  
**Location:** Mexico



**Project:** DULCES NOMBRES Combined Cycle  
**Scope:** Mechanical, I&C and Auxiliary systems Supervision  
**Location:** Mexico



**Project:** BAJA CALIFORNIA III Combined Cycle  
**Scope:** Commissioning and Start-Up Supervision  
**Location:** Mexico