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METHODOLOGY FOR MAKING VALUE INVESTING IN THE RENEWABLE ENERGY SECTOR

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Executive Summary

More and more people venture to invest in the stock market without conducting a prior detailed analysis to support their decisions, which has led to a situation where the vast majority lose money. This Study develops an analysis methodology that offers the basic tools and knowledge necessary to assess qualitatively and quantitatively the convenience of investing in shares of a listed company, a fact that can increase the chances of investing successfully. To guarantee the consistency of the procedure, it has been based on the principles followed by the most distinguished investors who adhere to the most solid strategy in terms of profitability in history: value investing. In short, the aim is to find companies that have competitive advantages, that operate in mature and promising markets and are undervalued, in order to invest in them in the long term and obtain the maximum benefit with the minimum risk.

To explain the methodology more clearly, an illustrative application has been chosen on the Spanish renewable energy company Audax Renovables. The study must always be structured in three parts, a general analysis of the country and the stock market in which the company is listed, an analysis of the sector in which it operates and finally a comprehensive analysis of the company. From each part, compelling reasons must be extracted that advise or discourage investment in the company.

Regarding Audax Renovables, in the general analysis, it has been seen that the expected evolution of the macroeconomic variables that affect prices will have a negative impact on the revaluations that can be expected from the shares and that the most attractive Spanish shares are those that distribute dividends. In the analysis of the sector, it has been detected that the Spanish renewable sector has enormous growth expectations, but it carries many risk factors that only the highest quality companies will overcome. In the analysis of the company, Audax Renovables has turned out to be a company with minor competitive advantages, which translate into low economic returns, with an alarming financial position due to excessive debt derived from its growth strategy through acquisitions and accumulated losses. and with insufficient cash flows to finance itself. In addition, the company does not distribute dividends and the optimistic expectations as a result of the progressive improvement of its economic-financial metrics has increased its price to a point much higher than its target price.

The conclusions drawn from the study have advised against investing in this company for the moment, due to its high market price, the risk involved in being in a highly competitive market with a value proposition without differentiation, leveraging financially and due to the negative effect that will add the economy on the company price.

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1. Preface

Although I am developed as an engineer, I have also studied Business Administration, and the world of economics, business and business has always fascinated me. And not so long ago I was interested in investing in the stock market. I remember the day I searched the internet for how it worked, and it seemed like a really complicated thing to do. Understanding the evolution of stock prices and predicting their future prices, knowing in which company it is better to invest, understanding how the stock market works and how the stock market is regulated, and other endless doubts assailed me very soon, at the same time that it was born in me a need to find an answer to them. For this reason, a master's final project, with all the depth and rigor it requires, was presented to me as the perfect opportunity to expand the knowledge acquired in the Business Administration and Management career and solve a common problem among many people and companies. : the difficulty of making company valuations from a stock market point of view.

Erroneously, engineers are often associated exclusively with industry, but we really have multidisciplinary knowledge. Our strength is the ability to abstract problems, analyse them and solve them in the most optimized way possible, and this capacity has a place in practically all business opportunities, including the world of the stock market. It is true that I have had to learn many concepts that I did not know and that I have faced an unusual challenge in my studies, but, ultimately, it is yet another scenario in which to apply the analytical reasoning that engineering has taught me. This time, the proposed scenario seeks how to find profitable stocks and I only had to find a logical method to answer it.

It can be thought that the managers and investment funds are there to do this task. Although expert opinions can be helpful, everyone should learn to draw their own conclusions. Above all, because analysts fail a lot with their predictions, they can make recommendations for their own interests and can be excessively optimistic - studies such as that of Ramnath et al (2008) corroborate this. Furthermore, Peter Lynch (1989), in his book "One Step Ahead of Wall Street", points out that non-professional investors can beat professionals by simply using the information at their disposal. This simply inspired me to do research like this one.

In addition, it has been decided to focus the investment study on the sector in which I have specialized in the master's degree and which concerns us a lot in this time of fight against global warming and the scarcity of fossil fuels: the renewable energy sector.

As a last point, I want to mention that the difficult economic situation generated by the coronavirus encourages us more than ever to learn about forms of savings such as stock investment to ensure a better financial future. Although its impact on all the variables that are studied in this work will not be taken into account and the study will be carried out with data that date before January 2020.

2. Introduction

The evolution of the internet and its applications has allowed the an easy dissemination of stock information and the ease of access to the sale of shares for private investors and companies. Contrary to what some believe, those who invest in companies are not just a handful of people screaming on Wall Street. More and more people decide to do it attracted by the succulent returns it provides. The mistake that the great majority make is that they do not form before doing so. The main origin of this problem is not that they do not want to learn before investing, but how difficult it is to do so. Moreover, if one sets out to do so, do not rule out getting a little dizzy: the market is full of investment courses at astronomical prices, gurus who know how to become millionaires overnight, fraudulent blogs by "successful" investors. offering you advice, hundreds of books and institutions that speak of dozens of different ways of doing it, etc. The information overload associated with learning how to trade well on the stock market is enormous, making it almost impossible to identify the most relevant and reliable data. As a consequence, most people who venture to invest to make money on their own (without involving a manager) tend to simply rely on news, advice from friends, or simply because they like what the company offers. These brave men undoubtedly have little chance of success and turn what they call "investing" into a dangerous game of chance. Well, surely, they do not know that the most recent statistics indicate that about 85% of investors lose money in the stock market.

For all this, winning consistently on the stock market seems so complex that it makes us believe that it is a feat reserved for the most expert professionals. But large investors such as Benjamin Graham, Warren Buffet, Peter Lynch and many others, assure that if a detailed analysis of the companies to which we want to allocate our savings is carried out, making money is not difficult. Even though the risk is inherent in the activities of investing in stocks and is higher as we seek higher returns, it is crucial to include more elaborate decision models that abandon traditional methods based on intuition and experience.

With this idea in mind, this work aims to shed some light on so much darkness, offering a very practical analysis method to look for empirical evidence that supports investment decisions and allows you to make money consistently. This method is not intended to reinvent the wheel, since it will be a compilation of the most important principles of the method that has historically produced the most attractive results: Value Investing. The answers to the unknowns that will arise will be found with the help of the Fundamental Analysis tool throughout Chapter 6, which focuses on making an assessment of the company with economic-financial criteria and an analysis of its environment. All these elaborated following orderly, detailed and concrete guidelines, to be able to replicate the study to another company that is desired (within the limits of possibilities that are established in the scope of the project).

2.1. Objectives of the Project

In general, it seeks to design and execute an analysis method that offers the knowledge and basic tools that allow a qualitative and quantitative assessment of the convenience of investing in shares of a listed company.

In more specific terms we can distinguish several objectives:

- Detail the most fundamental notions that are required to know before investing in the stock market.
- Justify why investing in stocks is considered within the huge range of ways to invest that exist.
- Analyse the potential of Value Investing compared to other investment strategies.
- Define the framework for the use of the proposed own method, answering questions about how to use it, reasons why it is recommended, who should use it, for how long, in what type of companies and in what circumstances.
- Select a company to which the analysis method can be applied to serve as an example.
- Analyse the prosperity of the country and the sector in which the company operates and estimate its future evolution and its impact on the future price of the company.
- Study the company's business model and its shareholder, corporate and organizational structure.
- Check the economic and financial situation of the company through the use of ratios.
- Carry out a strategic analysis of the company to find if it has competitive advantages that it can maintain in the long term.
- Calculate the target price of the company using valuation method and compare them with its market price to see if it is overvalued or undervalued.
- Check, through stock market ratios, if the company is overvalued or undervalued.
- If it turns out to be a recommended investment, estimate the profitability, the level of risk and the margin of safety expected for the shareholder in a given period of time.

2.2. Structure

Regarding the structure of the work, it has been conveniently divided into two well differentiated blocks:

- In the first block (up to chapter 4 included), more theoretical and that could not be missing in this work, the essential principles that one should know before starting to invest will be discussed. General questions are discussed such as what the stock market is, what it means to be a shareholder in a listed company, the benefits and risks derived from owning the shares or the main operations that may affect you. The different positions that the investor can take are also differentiated according to the level of risk they are willing to take and what financial strategies they can use.
- In the second block (from chapter 5), rather practical, a rigorous methodology based on the analysis of certain variables that one must always carry out before executing a purchase

operation of a share is explained in order to do so with a solid criterion. It starts by defining a sector within a country that is of interest to serve as an object of study. Next, an analysis divided into three stages is carried out. The first, the general analysis (section 5.1), analyses the current situation and the projections of multiple macroeconomic and stock market variables for the chosen country. The second, the specific analysis (section 5.2), analyses in depth the chosen sector of this country. And finally, a company is chosen from the sector of the chosen country and is examined in detail (section 5.3) to conclude if it can be profitable as an investment.

2.3. Scope of the Project

The field of investing in stocks is as complex as it is broad. At this point, the extent of the work has been limited, clearly delimiting what type of financial asset it is studying, what type of investment strategy it applies and what type of company it seeks to find for the practical part.

Type of financial asset

The present work develops a very specific study of the most easily understood variable income financial asset: stocks. Shares have all companies incorporated as a public limited company, but this research focuses on those that can be acquired through negotiation in the market: shares that are listed on the stock market. Specifically, of those that have already been negotiated at some time, whose price can be known by any citizen and that can be acquired easily and quickly: those that are part of the secondary market.

Type of investment

The feasibility of an individual, or even a company, without previous experience, actively investing in a specific company is examined. Contrary to passive investment, by which the average market return can be obtained with practically no effort or knowledge (by investing in specific funds or indices), with this type of investment the most promising companies are carefully searched to exceed this market return.

Without a doubt, the most sensible investment strategy is to distribute the capital in diverse financial assets (including those analysed in the work), thus maximizing the chances of success. But this work in no case gives recommendations on how to create an investment portfolio, or how to complement one that is already available.

Regarding the structural parameters of the investment, the time horizon of the proposed investment is the long term (+5 years), assuming a moderate risk and high expectations of profitability. The specific figures are difficult to detail, but due to the type of shares that Value Investing seeks, the generic estimates are those mentioned, and an approximation of their values will be made in the practical case.

Company type

Given the practical nature of the second part of the work, a company had to be chosen to study the price and value of its shares. Due to its proximity and ease of finding resources in Spanish, we have chosen to analyse a company that is listed on the Spanish stock market. Given that 205 companies are listed on it, it has had to limit a little more. It has been convenient to take the opportunity to choose a company that operates in the renewable energy electricity sector (it was previously verified that there is indeed at least one company with these characteristics).

3. The Stock Exchange

The theoretical part related to the Stock Exchanges is quite extensive, but it is not necessary to master it fully to invest in it and obtain considerable annual returns. For this reason, in this first block the most fundamental theoretical notions are developed, where the first question that must be clear is what is the stock market?

Also known as the Stock Market, it is an ecosystem whose function is very important for the development of the economy, since it channels savings towards productive investment, benefiting organizations, investors and intermediaries. It is an alternative to bank loans with which companies, or even the State, can obtain external financing in the medium / long term in order to achieve their objectives. In it, they can issue securities, such as stocks, bonds or obligations, mainly. Once offered to the market, savers or investors (both institutions and individuals) can choose to acquire these issues seeking to obtain returns, either through capital gains or through dividends, protect against inflation or take control of the company. And in its condition of secondary market, the stock market allows the sale of the securities (stocks or bonds) obtained if liquidity is desired. For this exchange to be possible, it requires the intervention of some intermediaries, known as stockbrokers, securities companies, brokerage houses or agents, who carry out their work in exchange for a commission.

Negotiations are conducted through a real-time computer system with public prices, in an environment governed by the law of supply and demand, where transactions are fully regulated and where transparency and objectivity of information are ensured, providing legality and security. For this reason, it is sought that information that may influence the market be disseminated clearly and quickly to all participants so that everyone has the same opportunities. In addition, as will be seen below, the fact that the contributions are public makes it possible to obtain statements of collective opinion about companies that would otherwise not be detectable. This fact, seen at the macro level, turns the stock market into an indicator of the economic prospects of countries. If it goes wrong, politicians, businesspeople and the general public know that something is not working in the economy.

Within the Stock Market there are fixed income products, such as bonds and bonds, from which we know in advance how much interest we will receive for our money, and equities, such as stocks, from which we do not know how much interest we will receive. In addition, they are considered financial assets with medium and long term maturity and are therefore classified within the Capital Market. In contrast, the Money Market, characterised by the short term (maturity less than one year), offers financial products such as promissory notes or short-term debt issues. Both markets make up the Financial Market and from the point of view of the issuer or seller, both markets provide a necessary commercial function: to maintain adequate levels of financing. Similarly, buyers have unique reasons to go to each market: capital markets offer higher-risk investments, while money markets offer safer assets; money market returns are often low but constant, while capital markets offer higher returns.

From a legal point of view, several markets can be distinguished within the Stock Exchange

regarding the marketing of shares. When new securities are issued and therefore sold to investors for the first time, the term "primary market" is used. In the case of shares, it occurs at the time of entry of a company on the stock exchange, a privatisation of a public company or with a capital increase. However, it also serves as a "secondary market", where securities that have previously been purchased can be traded and exchanged. It can be organised, but also an unorganized market, called OTC ("Over the Counter"), where negotiations are not subject to rules and are not channelled through stock markets, but personally between seller and buyer. However, the organized secondary market is the market that will occupy us throughout this work.

3.1. Shares

The shares are the product par excellence of the Stock Market, as they are the most famous and traded asset on the Stock Exchange. In essence, they are only an aliquot part of the share capital of a company incorporated as a public limited company. When first issued to the primary market, the price of the shares reflects their nominal value, which is calculated as the company's share capital among the number of shares issued; whereas when trading on the secondary market its price reflects the market price.

In order to be eligible for sale, the shares must be represented. Either in the form of titles (incorporated in a document), which is the traditional form and can be nominative or bearer, or as annotations to account (registered in a computer system), the most current form. However, listed companies are obliged to represent the shares by means of account entries and their transfer is by simple accounting transfer. As a result, when someone acquires an action, they become co-owners of the company, which gives them expected rights and obligations and profit expectations.

With the different expectations of the same shares by the different potential investors the market moves and any news can trigger a change of them. For this reason, equity investment requires special attention to the information available about the company, before and after the acquisition of the shares. Such information must be real, accurate, objective, up-to-date, continuous and equal for all. This protects the small investor by providing the same stock market opinion-forming options as institutional investors. We can obtain it from various sources, but because of its regulated, objective and neutral nature, it is preferable to always resort to official sources. Therefore, it is best to always go to its official website to the section "Information for shareholders and investors" or consult it on the website of the National Securities Market Commission.

Its enormous appeal lies in several factors. They usually highlight its ability to generate periodic income via dividends, the rights it provides, its easy conversion into liquidity in case we need money, the wide range of different companies in which we can invest, the operational agility of buying and selling them or the substantial return that can be expected. While its main drawbacks lie in its obligations and the risks involved in predicting market movements.

For this reason, it is important to explain in more detail the concepts that can be a little more complex, such as: risks of investing in shares, origin of the return of the shares and the rights and obligations of the shareholder.

a) Risks of investing in shares

The investor who buys shares always seeks the balance between two opposite poles: his aversion to risk and the desire to make a profit.

The risk of a particular asset arises mainly from the following reasons:

- Reasons depending on the settlement value.

In this case, the risk depends on whether the money we recover is greater than the invested. It is the result of adding two risks:

1) Non-systematic risk. Each company derives from particular factors. There are many factors that influence you, such as the balance sheet of the company, its profit and loss account, its Cash Flow, etc. Although factors derived from the sector to which the company belongs are also considered. These factors influence the feasibility with which the stock's stock value increases or decreases, as they directly affect the perception with which buyers value the profitability they can obtain from the company's shares. If the market's expectations of the company are negative, the quotation will decrease and may result in losses for the investor. This risk can be diminished with adequate diversification by selecting more assets in the portfolio. This is why it is known as diversified risk. In fact, according to several studies, the most appropriate number of different actions is between 10 and 20. It has been shown that adding more securities does not reduce the total risk of the portfolio (law of diminishing returns). It is measured with volatility, which measures how the return on the stock varies from its average over a given period of time.

2) Systematic risk. It is the risk that depends on the market situation, as it encompasses economic, political and social factors. Inflation, interest rates, a war, a recession or a contagious disease such as COVID-19 are very clear examples. A bad market moment always negatively affects stock prices and, again, can lead to losses for the investor. And they affect all the actions to a greater or lesser extent and therefore it is called non-diversible risk. It is measured through the beta and can only be reduced if we do not operate in that market, and therefore we do not buy the stock studied.

From the sum of both risks (systematic and non-systematic) we obtain the total risk that depends on the settlement value (Figure 3.1).

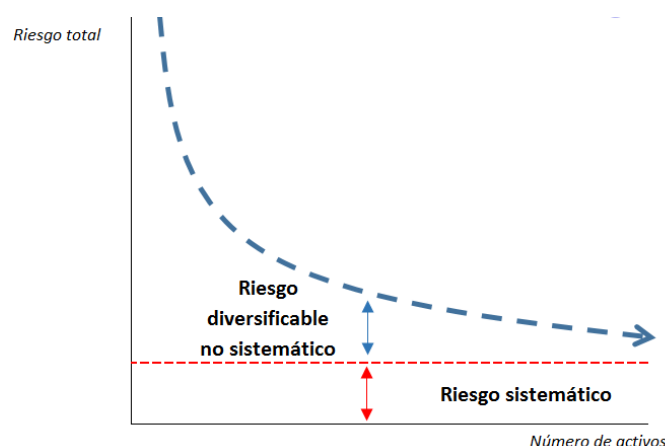


Figure 3.1: Evolution of total risk according to the number of assets.

○ Reasons arising from the liquidity of the security.

Liquidity refers to the ability to convert shares into money at the time we want without the transaction signifying a loss of value. John Maynard Keynes identified three benefits derived from liquidity: having money to make current transactions, to speculate in case another investment opportunity arises and as a guarantee in case unforeseen expenses arise. But we will not be able to enjoy these advantages if the sale of the stock is difficult because there is no one interested in buying it. In the Spanish stock market, the shares that are most traded, and therefore the most liquid, are the so-called «blue chips»: Santander, Telefónica, BBVA, Repsol-YPF and Iberdrola.

b) Source of equity returns

Investment in the stock market is the best long-term financial investment in the world, surpassing bonds, bills and housing, achieving a return of around 7% annual average. This is reflected in the Global Investment Returns Yearbook published by the Credit Suisse Research Institute. Its profitability can be analysed in many ways, a very common way to see it would be by dividing the total income obtained by the total costs of the investment made. Costs should include initial outlay, fees, fees, etc. While total revenue is the result of adding the following factors together:

1. The dividend received by shareholders as a result of the distribution of profits generated by the company.
2. The value of pre-emption rights, in the case of the sale of such rights as a result of a capital increase.
3. Capital gain on the sale of securities, which is composed of the difference between the purchase price and the sale price.

c) Rights and obligations of the shareholder

There are two types of shareholder in a company: the reference shareholder, who has a large share of the company, and the minority shareholder, who, unless they act in a grouped manner, have little say in decision-making. However, everyone has the same rights and obligations.

Political rights

- Information, such as access to documents or seeking clarification from the Board.
- Attendance and voting at general shareholders' meetings. Persons holding shares in a company are co-owners and form the supreme governing body of the company which is the General Shareholders' Meeting. In it, agreements are taken by majority vote and their main competences are:
 - Control of management, discharge of annual accounts and implementation of results
 - Appointment and dismissal of managers and managers.
 - Capital increases and reductions
 - Change in the status of the company
 - Dissolution of the company

These measures are taken on a regular basis once a year, within the first six months following the end of the previous financial year, although others of an extraordinary nature may be called. In both cases, all shareholders have the right to attend. However, the statutes may make such assistance conditional on those with a minimum number of shares.

Active participation in the Board is both a shareholder's right and a liability. The statutes of some companies set a minimum number of shares to be able to attend the Board. Shareholders who do not reach that number may group and elect a representative.

Economic rights

- Right to collect dividends from the distributed profits generated.
- Right to pre-empt newly issued shares, either by capital increase or issuance of convertible debt securities. That is, the right to buy new shares issued by the company. If this right is not exercised, it can be sold on the stock exchange.
- Right to the liquidation fee, by which the shareholder is entitled to receive the proportional share of its shareholding if the company is liquidated, after having settled the outstanding debts.

Tax obligations

At the tax level, the shareholder is obliged to pay taxes on the income obtained from its shares and the changes in assets resulting from the transfer of transferable securities.

Legal obligations

At the legal level, the Securities Market Act must be monitored in particular, which provides that any person holding inside information shall refrain from communicating such information directly or indirectly to third parties and from conducting transactions in the securities to which the information relates.

3.2. Considerations to be taken into account

Every investor must know and take special care when investing in stock exchange to two phenomena that occur with relative frequency in many listed companies: the increases and reductions of capital and the "splits" and "contra splits".

Capital increase and reduction

These are extraordinary operations agreed upon by the General Meeting.

On the one hand, the capital increase can be done in three ways:

- At par: the price of the shares issued corresponds to the nominal value.
- With issue premium: the share price is higher than the nominal value.
- Released: they are issued from reserves, so it does not involve any disbursement to shareholders or an increase in capital for the company. In this sense, it is like a split (it decreases the value of the shares). The only thing that varies is the number of shares.

In a capital increase at par or with an issue premium, the company increases its equity. This new funding is expected to increase production. These funds are provided by previous shareholders, if they exercise their pre-emption right, or by new shareholders. And the investor will look favourably on the prospect of an increase in viable production, which will lead to better profit prospects and, consequently, higher returns. In any case, a capital increase is always desirable if we wish to maintain the shareholding in the company.

On the other hand, capital reductions reduce the company's funds. The company justifies these operations if the share capital exceeds its needs and the shareholders' contributions are to be repaid or if the company is in a loss situation and the net worth is less than the share capital.

"Split" and "contra split"

The "split" or split is an operation by which a listed company simultaneously divides the nominal value of all its shares and raises the number of shares in an inversely proportional manner, so that the share capital is maintained equally. Since the share capital is equal to the number of shares multiplied by their nominal value, if we split the nominal value by half, we will have twice as many shares.

The purpose of this type of action is twofold. On the one hand, to reduce the unit price of the share because it is high, thus facilitating the acquisition of small investors, increasing the liquidity of the shares and being able to improve the sales volumes. On the other hand, to facilitate the splitting of the shareholding, as a security measure to avoid an unwanted control of the company and to avoid abrupt changes of price as there are more investors participating in the negotiation.

The contra split is just or the opposite case. Many investors do not opt for very cheap shares since a decline in just a few cents means large percentages of losses. In addition, companies that are quoted at very low prices and have a lot of negotiation, do so seeking to stabilize their quotation since, as in the "split", they also tend to suffer a high volatility. It is important to keep this in mind when analysing stock prices because if you are not aware that a company has made

splits or contra splits you can misinterpret the real evolution of price and profit sharing.

It should be noted that for the shareholder both operations have a neutral effect, as it is the same to have 100 shares of company A at 1 euro each than 50 shares at 2 euros. In both cases the value of the portfolio is 100 euros and the benefits that can be received from them are identical.

3.3. Types of investor

As we have seen, the investor goes to the stock exchange in search of making a return on his capital. The more classic distinction of investor rates will ultimately depend on the risk that one is prepared to assume in order to obtain this return. So, the greater the risk, the greater the profitability - at least in theory. Therefore, determining your own investor profile is a good starting point for you to help us choose a mix of financial products that meets our investment expectations.

A generic classification is usually made into three types of investor:

- **Conservative profile.** In general, long-term investors who don't like to take risks. They're not going to get big annual returns, but they are going to get bigger than inflation by a few points. His favorite financial products revolve around fixed income, such as public debt, such as treasury bills, bonds or bonds, high-interest accounts and bank deposits.
- **Moderate profile.** The moderate assumes more risk than the conservative. It dedicates part of its capital to equity assets and the rest to fixed income. Their profitability is higher than the conservative's. The level of dedication to studying their assets is also higher.
- **Aggressive profile.** Works with high-risk financial products and mostly in equities. Its investment horizon is the short term for those who use technical analysis, such as the famous day-trading, or in the case of long-term investments look for growth stocks, emerging markets or small capitalization. The risk of more being assumed is offset by higher returns in the event of success.

To identify the investor profile two factors must be analysed:

- 1) Our current **financial capacity**: what one can afford to lose. This will depend mainly on the level of debt, the level of income and expenditure and the family situation.
- 2) Subjective issues related to the **willingness to take risks**, which depends on our financial knowledge and character in the face of market behaviour. Financial knowledge comes into play, especially in relation to the shares, and depends on the effort that the investor devotes to the analysis of their values. Increasing the study of an asset reduces the risk of losing money and increases the chances of making profits. And character, although it has its origin in genetics, can be perfected with practice and study.

As a result, financial capacity and willingness will show us our **tolerance for risk**; good willingness coupled with good capacity will allow high tolerances to risk, while low capacity coupled with poor disposition results in low risk tolerance. As a result, it will be decisive to see which values one can opt for. Thus, someone with a low tolerance, it would not be advisable to turn to the values of the aggressive profile.

Once the profile is clear, we can move on to the second step, in which **realistic and concrete objectives** must be set. To do this, the time horizon of the investment and the expected return amount

must be determined. This will determine the level of risk that we must assume and, therefore, what values should be chosen and in what proportion. For example, if you are very risk-tolerant and you want to get 30% return in 5 years, you cannot expect to get it exclusively from the conservative investor's favourite products, you should opt for the aggressive investor's products.

In the specific case of the type of investment that is developed in this work what is intended is through a good analysis, to achieve a very good willingness to accept risk so that those with moderate financial capacity are eligible for returns typical of the aggressive profile. In other words, improve our risk tolerance for higher returns. Therefore, the user who wants to use the methodology described in this paper must ask all the questions mentioned to see if it fits their profile.

4. Introduction to Fundamental Analysis

The key of the Stock Exchange market is to buy cheap and sell expensive. To achieve this, there are several tools, the most important of which are Fundamental Analysis and Technical Analysis.

As discussed in the objectives, this paper looks for a method of equity investment. However, investment operations are only those that, after a thorough analysis of the company, promise the security of the invested capital and an adequate return. Transactions that do not satisfy these requirements are speculative. It is important, then, that the tool chosen can deliver good long-term results in a sustained and reliable manner, so that we can ensure that it is not speculative.

The technical analysis is guided by graphs applying the "follow the market" principle. Try to anticipate the trend changes in the stock price, under the assumption that the quotation evolves following several patterns, that the price gives us all the necessary information and that history repeats itself. He believes that the market moves for psychological and not rational reasons, so that all companies are equal, the differences reside only in the graphics, specifically, short-term. Without intending to underestimate those who use this tool, large investors, such as B. Graham or W.E. Buffet, claim never to have met a single person who has made money consistently or durably with this type of analysis. Even many studies, such as the "Technical Analysis Around the World" studied 5000 patterns of this analysis and none of them managed to beat the market consistently. Due to this high level of speculation and low consistency, Technical Analysis has been excluded from the analysis of work and focuses exclusively on Fundamental Analysis.

The most common environment of the Fundamental Analysis is the Stock Exchange, although it is also used for Mergers and Acquisitions, Corporate Operations or the sale of assets. As such, it is a methodology that provides the essential analytical tools to maximize the chances of financial success. There is no single methodology, each developing the one that best resembles it. However, all of them, based on the economic structure of the company and the micro and macroeconomic variables of its environment that affect it, seek to determine the situation of this company and advance the future behaviour of a company. This is intended to determine the true value of the enterprise (known as intrinsic value), which is the one that should be listed critically. The facts and situations on which it is based should be studied within an appropriate framework so that, posteriori, a report or summary can be drawn up as realistic and concrete as possible to recommend buying shares or not.

It can be done from two different approaches as desired: a top-down or bottom-up approach.

- **"Top-Down"**: It consists of starting the decision-making by assessing the global environment and, subsequently, concretizing until analysing the situation of a company.
- **"Bottom-Up"**: Part of the particular state of the company, then goes on to analyse the sector and finally the national and/or global economic context.

There is no better one, it is simply a sequence that must be applied as appropriate. As in this paper we know in advance that we want to analyse a Spanish company in the renewable energy sector it makes more sense to apply the "top-down", because the general and specific analysis will be carried out independently of the specific company chosen.

It is also crucial to take into account the limitations of Fundamental Analysis.

- There is an intuitive and personal component to the analysis. Experienced analysts often provide a more value-added approach, as they approach the problem from a more global perspective. But even they do not have reliable ways of choosing and concentrating their investments on the most promising companies in the most promising sectors. In the words of Benjamin Graham, one of the best investors in history, "to invest successfully [...] what is needed is an intellectual infrastructure that makes it possible to make decisions and the ability to prevent emotions from deteriorating that infrastructure".
- The difficulty of the analysis lies in the multitude of variables you need to consider and the dynamism involved in predicting the future evolution of your business and its benefits. For this reason, it is not an infallible tool because it also has a part of inevitable speculation, which must be confined to strict limits that do not negatively compromise the results.
- It does not take into account the psychological factors of the market (such as the panic caused by COVID-19). These factors can lead to overreaction and can cause prices to fail the conclusions that the analysis makes, usually in quality securities.
- There may be concealment of data, partial, false or made-up information that distorts the analysis, since the accounting regulations have a subjective component, which can be used in the way that most interests the company.
- Depending on the country in which the investment is made, account should be taken of the different accounting rules, as they may differ and lead to different results depending on the criterion applied.
- It is based on the assumption that the market is efficient in the long term and therefore, even if the price of a share does not reflect the true value of a company, it will tend to the company in the long term.

4.1. Strategies based on Fundamental Analysis

Within the Fundamental Analysis, there are different investment strategies according to the type of company being studied. The two most reputable results achieved are:

1) Value investing. This investment strategy, popularized by Warren Buffett -a disciple of Benjamin Graham and the second richest man in the world- basically seeks to buy shares in quality companies that operate in stable, mature markets and with visibility of results, which are fundamentally undervalued. He believes that the market will sooner or later bring the stock price to its intrinsic value. Therefore, the long term (usually considered minimum 5 years) is essential when we invest in value. Since the longer the investment horizon, the smaller the impact of the economic circumstances, and the more relevant the choice will be in terms of its target value and not its market value, which makes it a very safe method. As a result, in value investing, successful shareholders do not care about risks such as beta factor, volatility or liquidity. They focus more first on quality and then on valuation. Likewise, those who invest with this strategy are looking for companies that offer a large safety margin, which is the difference between the price of a security and its intrinsic value (see Figure 4.1 for more details). This margin serves as a "buffer" to protect the investment decision, because the more margin we have, the more we will be protected from unexpected market changes.



Figure 4.1: An example of the difference in time between the intrinsic value and the purchase price of a share, which results in the safety margin.

Table 4.1 shows the average annual return on some of the most significant value-type funds, as well as their relative return on the benchmark (best-performing index indicating the average return on the market) during the years in which the funds or managers have been operational. It is significant to note that the average annual returns on these funds in any event significantly exceed (in some cases more than 10%) the respective rate, as well as the average annual returns are well above the two figures in each and every case analysed. This demonstrates the enormous potential of this type of investment strategy.

Manager (number of years operating)	Average annual return	Profitability vs index
Warren Buffet-Berkshire	19,7%	10,3%
Pacific Partners	23,6%	15,8%
Stan Perlemeter	19,0%	12,0%
Sequoia Fund	18,2%	9,0%
Walter Schloss	16,1%	8,7%
Tweedy Browne	16,0%	7,7%
Charles Munger	13,7%	8,5%

Table 4.1: Average annual returns of the most significant value investment funds

- 1) **Growth investing.** This second strategy looks for actions of companies in growth phase that operate in changing markets, with a lot of competition, but where the companies that succeed follow the slogan "the winner takes it all", meaning that the one that offers the most value will take most of the benefits. Their chances of failure are greater, given the great uncertainty that surrounds them, and therefore it is much less safe than investing in value, even though it may become more profitable. The niche par excellence is technology. The academic community recognizes that it has less positive results than value investing, so the value investing has been chosen for this work.

5. Case Study: Value Investing Methodology

A detailed assessment of an undertaking is then made. Although the literature on this topic is extensive, in very few cases a compressed overview is offered that allows a general understanding of the most important principles and their subsequent application. In fact, there is no single universal and exact way to do it, each investor ends up developing his own, so the following methodology may seem one more. But to give it a differential value two points have been taken into account. The first is that it has been based on the theories of the most successful investors in history, thus ensuring the quality of the content. The second is that, to ensure the usefulness of the content, the philosophy learn by doing has been applied, so the methodology is explained directly with a practical case. In the example, a company operating in the renewable energy industry will undergo an in-depth study, the conclusion of which is a recommendation as to whether or not to invest in the company under study. If not recommended, the method can be applied again until you find another company that is recommended.

If we recapitulate the scope of the project (section 3.3), the following case study can be replicated only if:

- 1) We are talking about stock listed and traded on the secondary market.
- 2) We seek to make an active investment based on Value Investing, in the long term (+5 years), assuming moderate risk and high profitability expectations.
- 3) We apply the analysis to a quality company (quality parameters are detailed in Chapter 5.3)

The structure of the proposed "top-down" Fundamental Analysis method has the structure of Table 5.1. Attempts should always be made to study each item in the table in order to take into account as many arguments as possible for or against the investment. The conclusion must be made on the basis of the three parts of the analysis, giving greater weight to the company's analysis, the specific analysis and the general environment, in this order.

General analysis	Specific analysis	Business analysis
Participants in your stock exchange	Value chain	Business model
Profitability of your stock exchange	Economic-financial analysis	Shareholder, corporate and organisational structure
Country risks	Growth prospects	Business strategy and growth prospects
Economic Indicators		Economic-financial analysis
Macroeconomic projections		Price-value comparison of the company

Table 5.1: Structure of the proposed Value Investing method. Authors' own creation.

5.1. General analysis

The first thing to do is to analyse the conditions of the country under study (Spain in this paper). In particular, you have to look at who your stock market participants are, what the average return is, what your country risk is, how attractive your macroeconomic indicators are, and finally, your macroeconomic projections.

Analysing this type of data presents benefits such as understanding the meaning of its economy to capture trends with a much broader vision, assimilating the behaviours of the different economic agents to assess the reality in a more segmented and very important, to compare it with other countries.

5.1.1. Exchange participants

A good way to start the study of the Spanish stock market panorama is to get an idea of who is in the hands of the shares of the market in which we have been interested. Because it is very valuable information to know what kind of collective shows interest for the national companies since, in the end, these agents involved are the ones who determine the market price of the shares.

To answer this question, we can go to the official "Annual Report on the Ownership of Quoted Shares" offered by the BME Studies Service. In it, we observe the evolution of the participation of banks and banks, collective investment institutions, public administrations, non-financial companies, families and non-residents (See Table 5.2)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bancos y Cajas	15,6	13,4	15,1	15,1	14,1	12,9	11,7	12,8	7,3	7,9	7,1	7,7	8,7	8,6	9,3	9,4	7,6	5,0	4,6	7,5	5,2	5,1	4,3	3,6	3,0	3,1	3,0
Inversión Colectiva, Seguros y Otras	5,0	4,2	5,7	7,0	7,2	10,2	10,2	8,8	7,1	7,2	7,4	7,9	8,6	8,6	9,6	8,1	7,4	7,6	7,6	8,8	8,4	7,4	7,8	7,9	7,4	8,0	7,9
Adm. Públicas	16,6	16,4	13,8	12,2	10,9	5,6	0,6	0,3	0,2	0,2	0,4	0,3	0,3	0,3	0,3	0,2	0,3	0,3	0,3	0,3	0,5	2,3	1,9	2,9	3,1	3,1	3,3
Emp. no Financieras	7,7	6,9	6,8	6,7	6,9	5,9	5,5	10,1	20,3	21,7	22,0	23,0	23,1	24,7	24,4	25,4	26,0	25,9	26,1	22,1	21,7	19,0	17,1	18,9	20,1	20,1	20,5
Familias	24,4	24,8	22,8	22,2	23,6	30,0	35,1	33,6	30,5	28,0	28,3	26,0	24,1	23,6	23,8	20,1	20,2	21,1	22,2	21,2	25,1	26,1	26,2	24,4	23,4	19,7	17,2
No Residentes	30,6	34,4	35,9	36,7	37,4	35,6	36,9	34,3	34,7	35,0	34,8	35,1	35,2	34,2	32,6	36,8	38,5	40,1	39,2	40,0	39,2	40,1	43,0	42,3	43,1	46,0	48,1

Servicio de Estudios de BME

Table 5.2: Percentage data on the total market value at the end of 2018 for all listed Spanish companies.

According to Figure 5.1, at the end of 2018, the main owners were international investors, especially investment funds, such as Black Rock, controlled 48.1% of the Spanish market capitalization, having increased its share by nine of the last twelve years. This fact demonstrates the growing interest of companies listed in Spain for foreign capital and the good competitiveness of our stock market. In addition, it is a good sign of the ease with which companies can find financing on the Spanish market.

Then follow non-financial businesses, which continue with a trend of moderate rise, and families.

The latter's share fell last year to 17.2% compared to 19.7% in the previous year. It is the lowest figure in the historical series (1992 - 2018) and is three points below the percentage reached a decade ago. This fact is noteworthy, but it is understood according to the study Financial Savings of Spanish Families prepared by INVERCO with data from the Bank of Spain, which shows that direct investment in listed equities represented only 4,8% of household financial savings. Spaniards spend three times more savings on investment funds than on their family portfolios.

Also, we note that the participation in the Spanish Stock Exchange of Investment Funds and SICAVs is very low, at 7.9%, which shows that the majority of Spaniards who invest in funds, opt for those who have foreign shares.

Finally, mention should be made of the low participation of public administrations and banks.

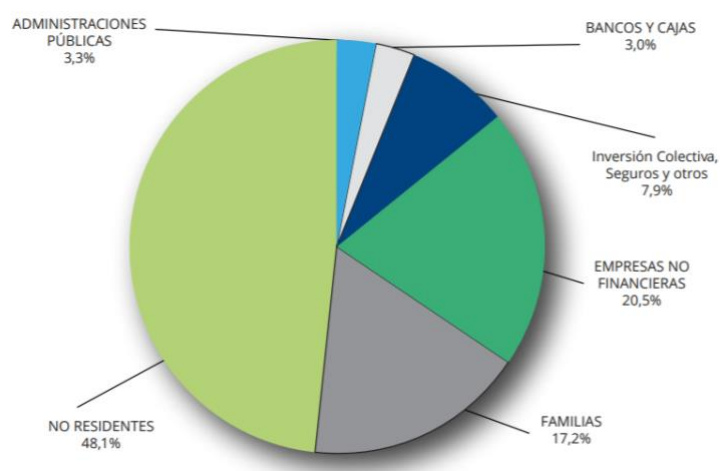


Figure 5.1: Owners of quoted Spanish shares. % on total capitalization at the end of 2018.

Source: BME Studies Service. Rentabilidad y composición de la Bolsa

Now that we know the main owners of the shares listed on the Barcelona Stock Exchange, we can investigate to what extent it can be profitable for them. To do this, we can go to one of the statistical studies published by "Bolsa y Mercados Españoles (BME)", which appears in Table 5.3, where the annual profitability of the main stock exchanges in the world is shown [15]. The profitability of the Madrid Stock Exchange (which is the most representative in Spain) can be measured with the Madrid Stock Exchange General Index (Madrid IGBM), which is composed of more than 100 different Spanish companies. By measuring their evolution, we can see the reflection of an increase or decrease in stock prices over time.

RENTABILIDAD DE ÍNDICES INTERNACIONALES / PERFORMANCE INTERNATIONAL INDICES (%)										
	Dow Jones	Nikkei	FT-100	CAC-40	FTSE MIB	DAX	SMI	Madrid IGBM	Stoxx 50	Eurofirst 300
2010	11,02	-3,01	9,00	-3,34	-13,23	16,06	-1,68	-19,17	-5,85	7,26
2011	5,53	-17,34	-5,55	-16,95	-25,20	-14,69	-7,70	-14,55	-17,05	-10,72
2012	7,26	22,94	5,84	15,23	7,84	29,06	14,93	-3,84	13,79	13,24
2013	26,50	56,72	14,43	17,99	16,56	25,48	20,24	22,71	17,95	16,09
2014	7,52	7,12	-2,71	-0,54	0,23	2,65	9,51	3,01	1,20	3,96
2015	-2,23	9,07	-4,93	8,53	12,66	9,56	-1,84	-7,42	3,85	5,04
2016	13,42	0,42	14,43	4,86	-10,20	6,87	-6,78	-2,24	0,70	-0,64
2017	25,08	19,10	7,63	9,26	13,61	12,51	14,14	7,59	6,49	7,78
2018	-5,63	-12,08	-12,48	-10,95	-16,16	-18,26	-10,15	-15,03	-14,77	-13,52
2019	22,34	18,2	12,1	26,24	28,28	25,48	25,95	10,24	25,51	21,98
Media	11,08	10,11	3,78	5,03	1,44	9,47	5,66	-1,87	3,18	5,05

Table 5.3: Profitability of some of the most important international indices and their evolution from 2010 to 2019. Source: BME Bolsa y Mercados Españoles.

The average annual return for the last 10 years of the Madrid Stock Exchange is -1.87%, which is a clear sign of negative profitability or loss of capital. In addition, compared to the main indices of other countries in the same period of time we see that it is also considerably lower.

But the IBEX 35 is usually taken, which is the Index formed by the 35 most liquid companies listed in the Stock Exchange Interconnection System integrated by the four Spanish Stock Exchanges (Madrid, Barcelona, Valencia and Bilbao). It is used as a national reference to know the market sentiment regarding the economic situation of the country. Although only the top 5 positions of the IBEX 35 represent almost 70% of the weight of the Index, such as Inditex, Telefónica, Santander or BBVA.

In Table 5.4 it can be seen that, at the end of 2019, the quotations of the Spanish stock market have evolved in a positive way, with the IBEX 35 rising by 11.8% and the IBEX with Dividends getting a total return of 16.57%. However, if we look at the average of the last decade of the IBEX 35 (-1.5%), we see a bad performance at the level of profitability compared to the Stoxx 50 (3.18% - Euro Zone Index), the DAX (9.47% - German Index) or the Dow Jones (11.08% - American Index).

This is because only the top six banks in the index already weigh about 40%, which implies too much concentration precisely in businesses with a lot of debt, highly regulated and with a lot of competition, which penalises comparison against other international benchmarks.

And if we look at the return by counting the distribution of dividends, the return of the IBEX 35 annual average of the last 10 years reaches 3.5%. In fact, according to BME, in the last 32 years the historical average of this return is 4.04% above the main developed stock exchanges in the world [16], which indicates that this stock exchange has a very important dividend component to consider, not as remarkable as the revaluation. This is undoubtedly one of the great attractions of the Spanish Stock Exchange for foreign investors, a fact that fits with their possession of almost

50% of the listed shares.

RENTABILIDAD Y VOLATILIDAD DEL IBEX 35					
YIELD & VOLATILITY IBEX 35					
	IBEX 35		Volatilidad Anualizada	IBEX 35 con dividendos	
	Último	Rentabilidad*		Último	Rentabilidad*
1995	3.630,76	17,59	16,55	4.263,40	22,38
1996	5.154,77	41,97	15,62	6.269,40	47,05
1997	7.255,40	40,75	26,00	9.057,00	44,46
1998	9.836,60	35,58	37,96	12.556,30	38,64
1999	11.641,40	18,35	23,69	15.077,20	20,08
2000	9.109,80	-21,75	29,79	11.981,00	-20,54
2001	8.397,60	-7,82	32,70	11.255,40	-6,06
2002	6.036,90	-28,11	36,99	8.272,40	-26,50
2003	7.737,20	28,17	24,04	10.935,00	32,19
2004	9.080,80	17,37	15,72	13.241,20	21,09
2005	10.733,90	18,20	12,16	16.152,20	21,98
2006	14.146,50	31,79	16,29	21.974,00	36,04
2007	15.182,30	7,32	19,60	24.327,50	10,71
2008	9.195,80	-39,43	48,19	15.447,70	-36,50
2009	11.940,00	29,84	30,13	21.360,10	38,27
2010	9.859,10	-17,43	35,91	18.598,80	-12,93
2011	8.566,30	-13,11	33,85	17.157,80	-7,75
2012	8.167,50	-4,66	33,54	17.634,80	2,78
2013	9.916,70	21,42	22,35	22.528,60	27,75
2014	10.279,50	3,66	22,16	24.469,90	8,62
2015	9.544,20	-7,15	25,88	23.602,00	-3,55
2016	9.352,10	-2,01	31,03	24.215,10	2,60
2017	10.043,90	7,40	15,49	26.939,60	11,25
2018	8.539,90	-14,97	16,47	23.838,90	-11,51
2019	9.549,20	11,82	14,96	27.790,00	16,57

* Rentabilidad calculada sobre el cierre del año anterior (%) / Performance calculated on closing price of previous year (%)

Table 5.4: Profitability and volatility of IBEX35 and IBEX35 with dividends from 1995 to 2019. Source: BME Spanish Stock Exchanges and Markets

With these data, we already know that, in very general terms, if we are going to invest in the Spanish Stock Exchange we must:

- Assume that the value will have to be selected more cautiously than other markets such as the American or German Stock Exchange, because historically we see that it has companies that, on average, revalue less.
- Try to look for a company with a good distribution of dividends, which makes up for the lack of revaluation of the Spanish market.

5.1.2. Country risks

It is also important to know the country risk, which is the component of the total risk of an operation or investment associated with the political and structural factors of the country with which the operation is carried out. It is important to value it, because if Spain is an unreliable country in which to invest, it would be unwise not to take into account other more attractive countries.

We can perform the following country risk taxonomy [17]:

- Political risk.** This risk arises when there is political interference on the part of the rulers over private companies or when the political situation in the country is unstable. For example, it

would be unwise to invest in companies in countries where expropriation may occur.

- b. **Business risk.** This risk relates to the environment in which companies operate. Attention must be paid to the levels of corruption, the possible legal changes that may affect the company, the frequency with which breaks occur in the distribution chains or tax changes due to new tax burdens.
- c. **Financial risk.** The latter risk refers to the problems arising from the devaluation that the national currency may suffer and the harmful effects that inflation may have.

Information reflecting these risks from different countries can be found through different agencies and rating agencies. It is a good strategy to draw the conclusions from each of them in order to compare them and get a general idea of the situation in the country in which you want to invest. The data found date back to 2019, being these the most updated to date. For more information, see rating agencies such as Fitch, BERI, S&P or Moody's, among others.

Organism	Analysis	Rating	Annex
Dun & Bradstreet [18]	Country risk	Medium-low risk	Figure 9.1
COFACE [19]	Country risk	Low risk	Figure 9.2
Heritage Foundation [20]	Economic risk in terms of economic freedom	Position 58 of 186 Score of 66.9 against the European average of 69.8 and the world average of 61.6.	
United Nations Development Programme [21]	Human Development Index (country risk)	Position 25 of 189	
Banco Mundial [22]	Ease of doing business (commercial risk)	Position 30 of 190	Figure 9.3
International Country Risk Guide [23]	Country risk	Spain not analysed	
World Economic Forum [24]	The Global Competitiveness Index (country risk)	Position 23 of 141	
Transparency International [25]	Transparency Index (country risk)	Position 30 of 180	
Aon Political Risk map [26]	Political risk	Spain not analysed	Figure 9.4

Table 5.5: Different analysis bodies of different country risk variables with the position with which they have classified Spain. Own elaboration.

In general, Spain occupies competitive positions worldwide in terms of country risk, always within considerably low risk limits, as indicated by COFACE, Dun & Bradstreet, or International Country Risk Guide.

In addition, it has a Human Development Index and a frankly good Global Competitiveness Index. Both are good indicators of a country's ability to provide high levels of prosperity to its citizens, which means that people can unlock their potential in their personal and professional lives,

improving the competitiveness of the companies in which they are involved. For this reason, we can also see them as good indicators of country risk.

Although it does not lead any list of analysed, no alarm jumps us when analysing this data, which allows us to follow with confidence the study of values that are listed on the stock exchange.

5.1.2. Macroeconomic indicators

Then, it is key to make an analysis of the main macroeconomic indicators of the country under study to better understand the behaviour of its financial markets such as the stock market. The reason is that macroeconomic conditions mark the trajectory of virtually all listed companies, especially the largest (such as IBEX 35). When conditions are favourable, companies and their performance are positive, so contributions tend to rise and, if not, tend to fall. However, it should be borne in mind that it is only a theoretical foundation which implies that it does not always have to capture the real situation that is going to happen in the end in the Stock Exchange and even less in very unstable and unpredictable situations (like a looming global crisis).

Macroeconomic data to be assessed in any case include: GDP, unemployment, interest rate, inflation and government deficit [27].

5.1.2.1. Interest rates

The interest rate of a country can be defined as the price of the money that must be paid to take it captive and make up the monetary policy of the country. The European Central Bank (ECB) is the institution that sets the key interest rates. In the wake of the economic crisis, minimum rate policies were established with the aim of reviving the European economy. Currently, the official interest rate is 0%, meaning that the ECB lends money to banks free of charge. But then there is the interest rate set by the Central Bank of each state to the other banks and for interbank loans, which depends closely on that indicated by the ECB, which affect the interest rates on your banking products such as mortgages and personal loans. The main causes for a rise in interest rates in a country may be high inflation, a high government deficit, interest rates in other high countries or a large increase in the country's economic activity. It is the indicator with the greatest impact on the stock market [28].

When we have a high interest rate two effects occur [29]:

- On the one hand, a higher cost of the loans requested for businesses and families, that is, that more interest must be paid when borrowing the same amount of money. This leads companies to higher financial costs and families to have less money and therefore to reduce their consumption. Consequently, companies have fewer profits, which makes them less attractive as investments.
- On the other hand, a higher profitability of the demanded fixed income securities, which leads people to spend less money for consumption and actions, and to allocate them to fixed income.

As a result of both effects, when interest rates rise, equity prices decline.

Aside from the ECB interest rate that we have seen is 0%, it is important to look at the interest rate of loans and credits in the country. If we look at the weighted average APRC of loans and credits borrowed by households and non-financial corporations in Figure 5.2, we see that their trend is clearly bearish since 2014, hovering around 2.5% interest this year [30].

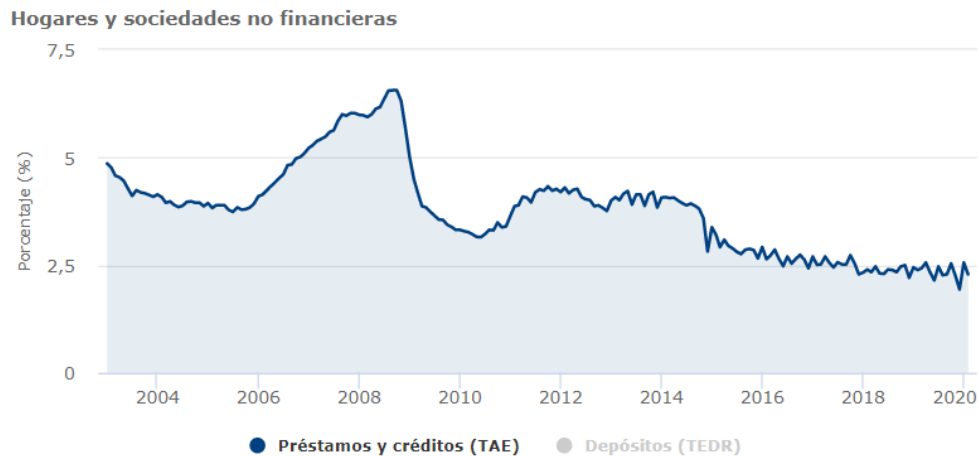
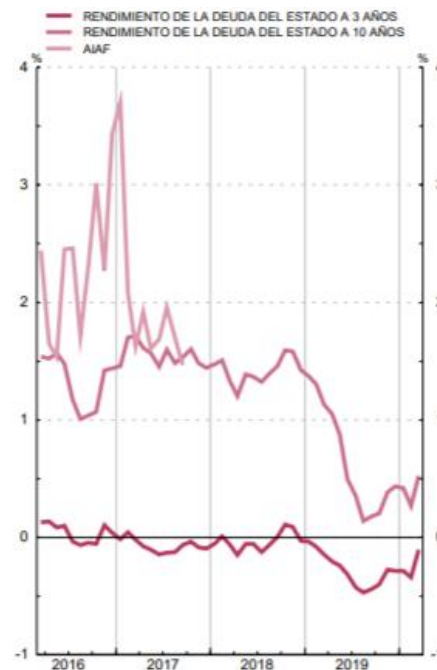


Figure 5.2: APR interest rate on loans and credits for households and non-financial corporations. Source: Banco de España.

In addition, according to financial theory, investment decisions are made on the basis of the comparison of alternative projects based on opportunity cost, which is usually directly related to interest rates, usually the State Debt considered risk-free. Figure 5.3 shows that the interest rate offered by the 3- and 10-year Spanish debt (fixed income) also has a downward trend. The shorter term is offering even negative returns and the longer term barely reaches 0.5%, which increases the attractiveness of the returns that shares can offer.



*Figure 5.3: Yield on the 3- and 10-year government debt on the Spanish stock market.
Source: Boletín estadístico del Banco de España.*

With both effects, we can anticipate that the impact on stock prices is favourable.

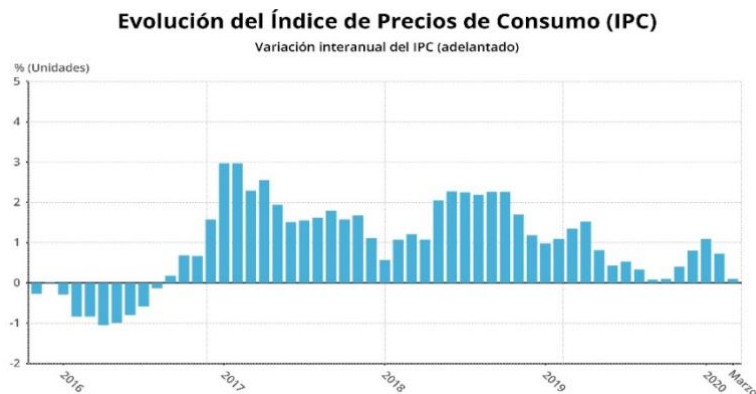
5.1.2.2. Inflation

Higher inflation (general price increases) has two major effects:

- A higher cost of inputs used by companies for their activity leads to lower business profits and less attraction as an investment.
- A greater amount of money in the hands of the public which leads to a loss of purchasing power, which, if prolonged over time, the Central Bank tries to mitigate by raising interest rates.

As a result of both effects, stock prices fall.

We can analyse it with the Consumer Price Index (CPI), which according to the National Institute of Statistics (INE) has been in a bearish trend for the last four years (Figure 5.4), standing in 2019 at 0.8%. This shows low inflation in Spain, with a slightly unfavourable impact on stock prices.



*Figure 5.4: Evolution of the Consumer Price Index (CPI) as an indicator of inflation.
Source:*

5.1.2.3. Unemployment rate

Lower unemployment means more people working and, therefore, receiving a salary that can be devoted to three destinations:

- To acquire shares, which would increase its price as demand increases (↑).
- To acquire fixed-income securities, which would increase their price as demand increases. As a result, the returns offered would be lower, providing a reduction in the risk premium (desirable case) and uncertainty. This more favourable environment leads to an increase in contributions (↑).
- Increased consumption of goods and/or services. This would in turn lead to:

- An increase in business profits due to an increase in sales, leading to an increase in share prices (\uparrow).
- As demand increases, prices can be expected to rise and thus inflation to appear. As we have already seen, it leads to a decrease in contributions (\downarrow).

In short, there are contradictory consequences, which makes it difficult to draw unequivocal conclusions from the effect of unemployment on contributions. However, it is clear that a country with a very high unemployment rate leads a large number of families to accumulate debt to meet their living costs, companies inevitably sell little and the state therefore earns little. The economic slowdown appears fast and becomes a real problem for the country, which is bound to shift to quotes.

According to the Economically Active Population Survey prepared by the National Institute of Statistics (INE), the unemployment rate is 13.78% or, in other words, 3.19 million people stopped in the fourth quarter of 2019 (see Figure 5.5). A rate that has been declining favourably year after year after reaching the 2013 peak caused by the 2008 crisis. Faced with the average unemployment rate of the European Union of 6.3% in the same quarter, it still seems far from optimal, but it is not alarming enough to easily see clear effects on contributions.



Figure 5.5: Evolution of the Spanish unemployment rate as a percentage from 2002 to 2019. Source: INE

5.1.2.4. GDP

Another fundamental variable that moves markets is the well-known Gross Domestic Product (GDP). GDP is the main indicator of a country's economic health, and as long as it grows we will be talking about a functioning economy. Therefore, countries with continuous increases in GDP are countries with good economic conditions and where companies will have a greater facility to create business and thus increase their profits. This increase in profits will be reflected on the stock exchange, where the price of their shares will increase.

Looking at Figure 5.6 of the annual evolution of real GDP (isolating the effect of inflation appearing

in nominal GDP), we note that since 2014 we have had growth of more than 2% per annum, far from the negative rates stemming from the 2008 crisis. Therefore, although growth is not as high as that of other European powers, it is slightly above the average growth of the European Union (1.24% in 2019 [31]).

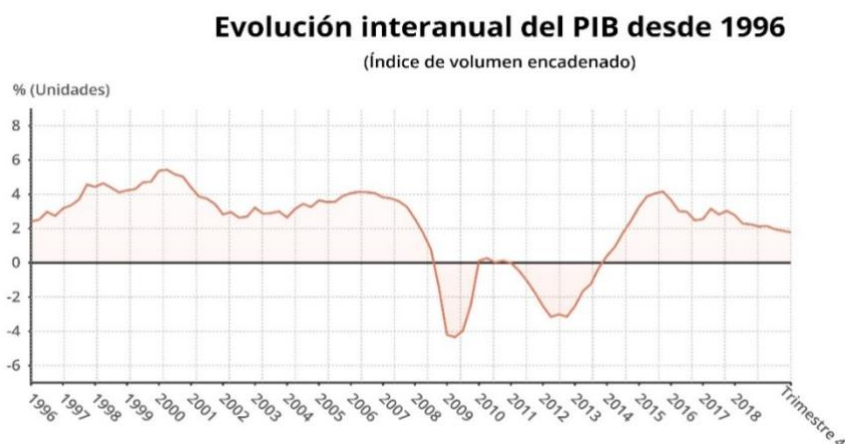


Figure 5.6: Annual evolution of GDP from 1996 to 2019 in %. Source: INE

5.1.2.5. Government deficit

The public deficit occurs when a country spends more money than it enters, which leads to issuing public debt to finance that gap. If the deficit is not reduced and the indebtedness is prolonged, they also tend to raise taxes and reduce the country's capacity to generate wealth. This translates into a lower attractiveness of their companies to investors, as it negatively affects the companies' performance.

In Spain, the deficit of the general government as a whole (excluding municipalities) in 2019 was equivalent to -2.5% of the Gross Domestic Product (GDP) and public debt increased to 95%,5% of GDP, placing Spain among the countries with the most debt to GDP in the world (see Figure 5.7).

Evolución del déficit público de España desde 1995 hasta 2019



Figure 5.7: Evolution of the government deficit in Spain from 1995 to 2019. Source: Eurostat, INE.

The gradual reduction of the percentage deficit year after year over the past eight years is seen as an improvement in the country's economic management, despite the fact that these are still negative figures that contribute to increasing the country's enormous debt. Therefore, although government debt has a negative effect on companies (already accounted for in the quotations as it arises from the accumulation of many years of debt), deficit reduction can be viewed favourably by investors, thus increasing companies' one-off contributions.

5.1.3. Macroeconomic projections

As explained above, current macroeconomic conditions have a direct effect on equity prices. The degree of impact of each variable is difficult to determine and depends on many conditions. But they constitute a leverage effect on the valuation of shares, their impact being appreciable when there are alterations in them. For example, when there is a rise in interest rates in Spain, a general rise in consumer prices, a rise in the unemployment rate, a fall in GDP, or an increase in the deficit, the stock market shows clear declines in the contributions of most of its companies. And the opposite effect occurs if the opposite is true for each variable. Therefore, economic projections, despite their complexity and unreliability due to the unpredictable constant changes they undergo, can show crucial trends for the long-term investor. Thus, if these indicators were to move in the right direction, it would result in the growth of the national economy, and thus of the benefits and dividends that can be expected from enterprises generally.

With this explanation we can raise four possible scenarios in the future effect on quotes:

Current situation	Projections	Future effect on contributions
Unfavourable	Favourable	Very positive
Favourable	Most favorable	Positive
Unfavourable	Less unfavourable	

Unfavourable Favourable	Most unfavourable Less favourable	Negative
Favourable	Unfavourable	Very negative

Table 5.6: Qualitative effect on the contributions caused by the alteration of the valuation of a macroeconomic variable. Own elaboration.

The most prudent and reliable macroeconomic projections of the Spanish economy are published by the Banco de España [32] and the "Ministerio de Asuntos Económicas y Transformación Digital". The next 3 years can be found as shown in Table 5.7:

Variable macro	2019	2020	2021	2022
ECB interest rates	0%	0%	0%	-
Evolution of GDP	2%	1,6%	1,5%	1,6%
Public deficit	-2,5%	-2,5%	-2,1%	-1,8%
Inflation	0,8%	1,2%	1,4%	1,6%
Unemployment rate	14,1%	13,6%	13%	12,6%

Table 5.7:

Current situation of the different macroeconomic variables studied and their projections until 2022. Own elaboration.

Interest rates do not appear to vary much as the ECB plans to keep them at 0% until 2021. And if the national banks want to adjust the APRC interest on loans and credits, looking at their evolution, everything suggests that they can continue to decrease. Taking a moderate stance we can assume that there will be no effect on contributions. In addition, inflation and GDP growth appear to be worsening, but the share of the government deficit in GDP will be reduced. The unemployment rate continues to show no alarming signs in the coming years and therefore with uncertain consequences on the stock market, we simply see that it will also be reduced slightly.

Table 5.8 presents the qualitative summary of the current situation and the expected future effect on the valuation of Spanish companies in general.

Macroeconomic indicator	Current situation	Projections	Future effect on contributions
Interest rates	Favorable	Favorable	None
Inflation	Unfavorable	Most unfavourable	Negative
Unemployment rate	Unfavorable	Less unfavourable	Uncertain
GDP	Favorable	Less favourable	Negative
Government deficit	Unfavorable	Less unfavourable	Positive

Table 5.8: Expected effect on contributions of each macroeconomic variable studied. Own elaboration.

We can conclude that currently in Spain we have inflation, an unfavourable unemployment rate and a public deficit coexisting with relatively favourable interest rates and GDP growth. This not very extreme scenario and with opposite results, gives us unclear clues as to how the national situation can affect the performance of companies, but for the most part it seems to be unfavourable. And if we assign an impact equal to the three variables that will have a future effect on the contributions, it is suggested that Spain will soon be in an even more unfavourable situation, this implies that the macroeconomics will negatively affect the expected performance of the shares. Unless you invest in an even longer time frame that allows for possible favourable changes, of course.

5.2. Specific analysis

The specific analysis is a further link in the fundamental analysis and aims to study the most relevant factors in the sector to which the company in which it intends to invest belongs. The obvious prospects for physical growth in a sector do not translate into obvious benefits for investors. But they are very important in setting market prices, so it is natural that attention should be paid to the economic state of the sector. But according to Benjamin Graham, most of the sector studies that an investor can easily access have already had a significant influence on the contributions. They only sometimes give rise to valuable perceptions of important factors that will influence the future and that have not been sufficiently appreciated by the market at the present time. In cases where such a conclusion can be drawn with a reasonable level of confidence, such a conclusion will be a sound basis for investment decisions [33]. As has been well determined in the scope of the project, the renewable energy industry, which is part of the vast energy sector, will be analyzed.

This sector is a sector of strategic character that all branches of the economic activity need, being the energy considered necessary for any kind of production of goods and services. Hence, it has positioned itself as one of the pillars on which the growth, competitiveness and development of modern economies are based. In addition, it is a counter-cyclical sector, whose demand is relatively stable by offering a commodity of primary need, so it will yield profits regardless of the stage of the economic cycle that it is going through. The existence of such gains passes from obtaining primary energy, through its conversion and transport into final energy, until they become useful energy. Its purpose may be in the form of thermal energy such as fuels or electricity for industry, transport or residence and services. For example, 77% of final energy in the EU in 2017 was spent on fuels (of which 95% came from fossils and 5% from renewables) and only 23% on electricity. Of this 23% only a part is renewable, which aims to turn this sector into a sector with zero carbon dioxide emissions. This renewable energy industry for electricity, very different from the fuel industry, is the subject of the following specific analysis. Although, before we begin, if we could double the penetration of renewable electricity, there would still be 50% of primary energy consumption based on fossil fuels. But it would undoubtedly be a very important step.

5.2.1. Sector value chain

The electricity sector follows a process that is divided into several essential and sequential activities to deliver electricity to the final consumer. These activities are as follows:



Figure 5.8: Electricity sector value chain.

- **Generation.** At this stage, companies invest capital in facilities to convert primary energy into electricity supply. It is a liberalised activity.
- **Transport.** Its main function is the construction and operation of high voltage networks, which transport energy over long distances. In 2014 there were 42,753 km installed and in 2018 44,069 km, which involved electrical losses of 1.7%. It is an activity regulated entirely by the Spanish Electricity Network.
- **Distribution.** They adapt electricity to the needs of consumers, by lowering voltage. In 2014 there were 793,110 km installed and in 2018 792,489 km, which involved electrical losses of 7.9%. It is also a regulated activity.
- **Commercialization.** They are intermediaries who buy the energy and sell it to the final customer. It is an activity with part of the liberalised market and the other part with regulated tariffs.

As in all sectors, there are business groups that cover different phases of the value chain based on vertical integration, so they end up being huge companies capable of benefiting from economies of scale, such as Iberdrola or Endesa. But others simply exploit one phase of the chain, so it is useful to investigate independently, above all, electricity generation and marketing, as these are the stages that differentiate a renewable energy company from another that is not.

5.2.1.1. Power generation

At the generation stage, the sources of energy that produce electricity are divided between those of fossil origin (coal and natural gas), those of renewable type (biomass, hydroelectric, solar, wind and geothermal, mainly) and those of nuclear origin (nuclear fission). Each country provides electricity according to available energy sources. The main objective is to meet the demand, according to the needs of consumers, throughout the 24 hours of the day. For this reason, the electricity supply is executed through a mixture, which complement each other, depending on the characteristics discussed. If this demand cannot be met from own resources, it is imported.

Unlike fossil fuels and nuclear energy, renewables regenerate without limit and have a much less polluting effect. And in recent years, the energy transition to a low-carbon economy has been high on the political agenda of European governments, putting renewable energies at the forefront. Therefore, the growth objectives, the planned investments and the institutional support

via normative and credit at this stage are expected to be significant.

The national electricity demand, which is the electricity that consumers demand from the grid and that promotes electricity generation, follows an upward trend of growth, with the lowest annual variation in 2018 with 0.14%, placing the demand at 264 TWh per year (see Figure 5.9).

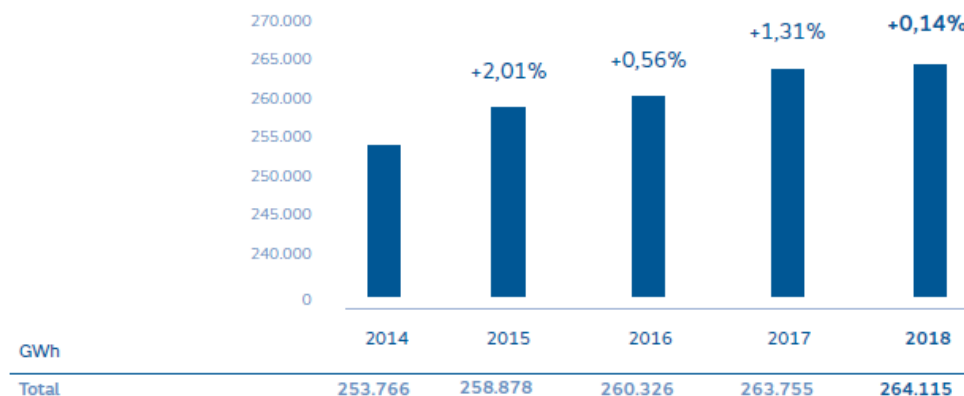


Figure 5.9: Annual national demand in GWh for electricity. Source: Spain's electricity grid.

However, annual electricity production has decreased since 2014, with the largest year-on-year variation in 2008 at -0.53%. Compared to energy demand there is a gap (to which should be added the losses from the time the electricity is produced until it reaches the consumer) which is offset by a higher level of electricity import.

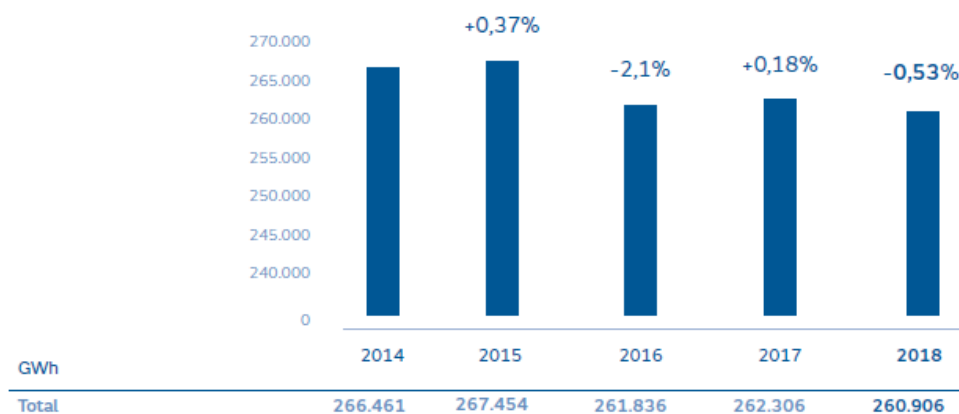


Figure 5.10: Annual national production in GWh of electricity. Source: Red Eléctrica de España.

To understand the magnitude of power generation, it is crucial to look at the installed capacity, production and the utilization factor of each energy:

- **Capacity:** We can start by analyzing the energy mix in Figure 9.5 of the annex, to see that renewable energies occupy 52% of the installed power in the peninsular, equivalent to

51,213 MW. With an evolution between 2014 and 2018 that has been barely +2.43%. While total capacity has even decreased, this shows the lack of real investment in new generation facilities in recent years.

- Production:** To understand the contribution of each source of energy extraction we must consider its production, which depends not only on the installed capacity but also on other factors such as how long we have the power plant and the performance it has. As expected, renewables contribute a much smaller proportion to their share of installed capacity, 40% of electricity production (99,065 GWh), mainly as a result of greater reliance on optimal weather conditions to operate and low shutdown costs (see Annex Figure 9.6). In addition, its evolution does not seem to be favorable, as it has decreased by 8.4% compared to its generation in 2014. Moreover, when compared to countries such as Iceland or Albania, where 100% of their electricity generation is renewable, it may seem a daunting fact. But the truth is that Spain is in the vanguard, was ranked in 2018 as the fifth country with the highest volume of renewable electricity generation in the European ranking and since 2009 its percentage of clean electricity generation has been above the average of the ENTSO-E22 member countries [34]. Specifically, of the total renewable production, 49% comes from wind generation, 28% from hydraulics, 7% from mini hydraulics, another 7% from photovoltaic solar, 5% from thermal solar and the rest from minority renewables.

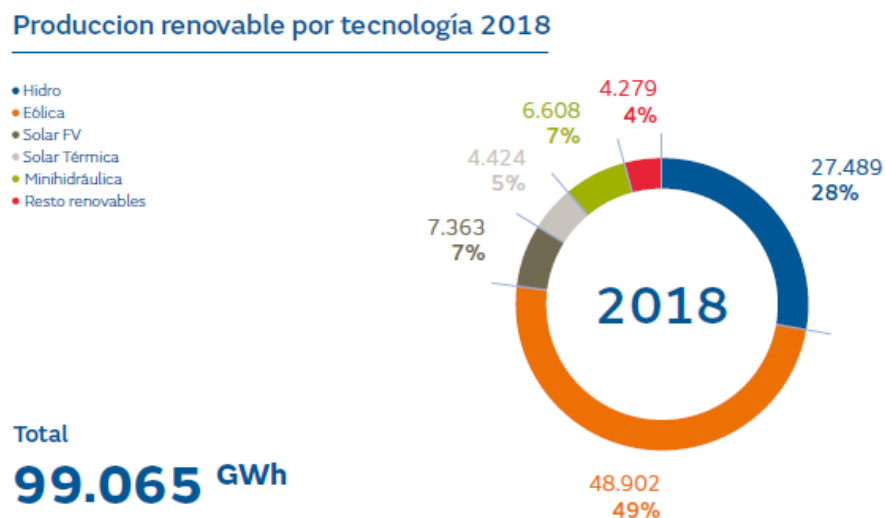


Figure 5.11: Renewable production and percentage breakdown by technology in 2018.
Source: Red Eléctrica de España.

- Utilisation Factor:** Figure 8.7 shows how on average renewables have a low utilisation factor (around 21%) that weighs on the time they are in operation producing electricity, while coal has 41%, 85% nuclear and 58% cogeneration.

5.2.1.2. Commercialization

The electricity traders are those companies in charge of selling electricity to final customers,

paying a fee to the distribution company for using their electricity network. As in the rest of the EU, it is largely liberalised, allowing businesses to set their own prices and consumers to switch to another electricity supplier freely.

In addition, since the marketed product is a "commodity", low entry barriers are limited only to capital, which favours the emergence of competitors. Both factors increase the competitiveness and transparency of the market, favouring the prices offered in the market. As a result, in recent years, both in Europe and in Spain, there has been a significant increase in the number of marketers, turning the industry into a veritable red ocean, as W. Chan Kim and Renée Mauborgne would say in their book "The Strategy of the Blue Ocean", characterized by a constant goal of beating the competition that ends up leading more than one to bankruptcy. In Spain in 2017 it reached 290, being the European country with the most marketers, and it was reduced to 243 in 2018 (Figure 5.12). The market controlled by independent traders is therefore highly atomised, all with a market share of less than 5%.

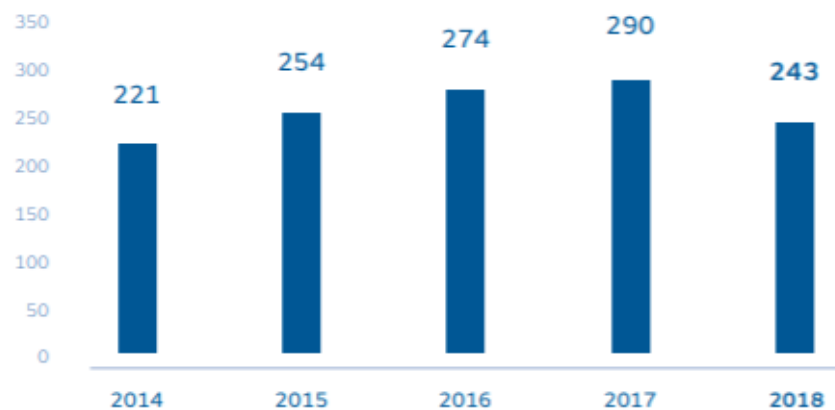


Figure 5.12: Number of marketers in Spain between 2014 and 2018. Source: Red Eléctrica de España.

With this boost to the entry of new participants, the average market share of the main marketers in each European country between 2011 and 2017 has been reduced considerably (Figure 5.13), reaching 66.4% in 2017.

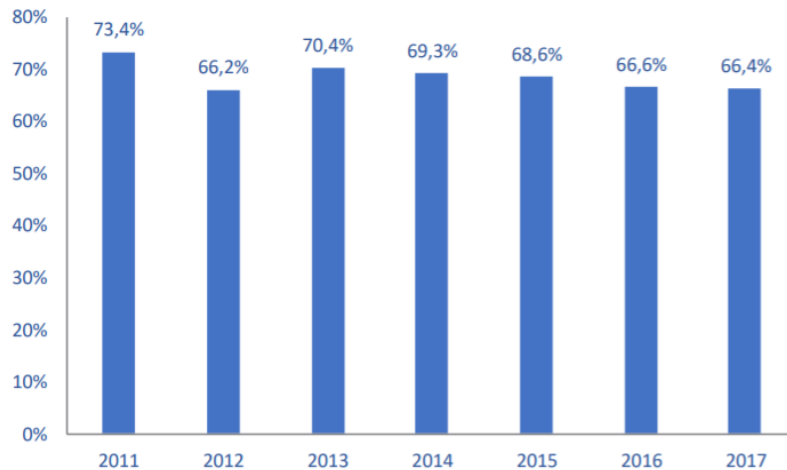


Figure 5.13: Average market share (%) of the three main traders in each EU country. Source: CER (2018).

Revenues from the electricity marketing business in 2017 generated 411 billion euros with a contraction between 2013 and 2017 of 1.7%, but it is expected to reach 467 billion euros in 2022. In the Spanish case, 86.5% of the market share is distributed among the traditional traders: Iberdrola (36.5%), Endesa (29.6%), Naturgy (12.6%), EDP (5.1%) and Viesgo Energía (2.6%). In just 4 years they have lost a 4.2% quota, compared to the independent marketers. In addition, currently, the industrial sector and SMEs are supplied by 99% free market traders, while in the domestic segment they cover 60.4%, the rest is covered by PVPC tariffs (government regulated tariffs). It is expected that, in the not too distant future, free market traders will provide 100% of electricity tariffs and the PVPC tariff will eventually disappear. Both of these reasons offer a scenario of new opportunities and hope for smaller businesses [36].

In relation to the profitability obtained, according to a report prepared by the CNMC, the average net margin obtained by marketers in the free market (which is almost 90% of the market) is around 5% in 2017, which is a low margin, due to the lack of differentiation of the product offered, the high competition and the almost non-existent ability to negotiate with the electricity supplier.

5.2.2. Economic and financial analysis of the sector

For this section we have used the data extracted from the study carried out by Deloitte for the Naturgy Foundation, where it analyzes the economic-financial situation of the main companies of the Electricity Sector in Spain between 2016 and 2018 [36]. The transport phase is totally regulated by the Spanish Electricity Network, so they do not analyze them in their study. But they do take into account, on the one hand, distribution and, on the other hand, generation and marketing, analyzed together. In the Annex (Figure 9.9) you can find both their balance sheets and their profit and loss account, which can be used for comparisons by ratios when we study a particular company. It may be useful to highlight the following conclusions of the study of the Spanish electricity sector:

1. The average economic profitability (ROA) of the generation and marketing activities is 0.51%, which shows a low ability to generate profits with its available assets (regardless of how they were financed). And the electricity sector as a whole is 3.62%, which is relatively low as well.
2. The average financial profitability (ROE) of the generation and marketing activities is - 0.071%, so the return that the shareholders have obtained has been negative in this period. And the electricity sector as a whole is 3.8%.
3. It is a sector with a strong international presence, offering services in more than 40 countries, which shows that the Spanish sector is competitive at a global level.
4. The breakdown of the total costs of the Spanish electricity system is as follows: power generation (37%), charges and other costs (27%), taxes (20%) and transmission and distribution networks (16%).
5. The breakdown of total revenue from the Spanish electricity system is as follows: power generation (47%), network access tolls (39%) and others (14%).
6. The difference between income and costs has led to a surplus of only EUR 40,327 million in 2013 and a debt of only EUR 40,327 million between 2000 and 2018.
7. It has a significant amount of financial debt, due to the fact that the generation and distribution of electricity are very intensive in fixed assets in land, machinery and buildings, have a long maturation period and low margins. Conversely, marketing does not require high volumes.
8. It is a highly developed sector, with a turnover of more than 96 billion euros globally, of which 41 billion euros are allocated to Spain (equivalent to 3.4% of Spanish GDP in 2018).
9. It is very affected by the deterioration of its assets (mainly those associated with electricity generation through thermal power plants) due to technological and regulatory changes that have brought the energy transition and the decarbonization of the economy. This forces them to invest very significant and constantly increasing volumes. In 2018 alone, 4.2 billion euros were invested in Spanish electrical assets and 122 million in R&D&I.

5.2.3. Growth prospects

Global warming has become, according to the UN, the most important catastrophe of our time. Along these lines, the decision to replace, progressively but radically and with concrete planning, plants that produce electricity from sources that emit CO₂ by renewable energy plants (especially wind and solar) is a real political decision that connects with international agreements to combat climate change. The most recent agreement is the United Nations Paris Agreement, signed in April 2016, which is a real turning point for its universality and coverage, and in which 195 countries responsible for 95% of global emissions pledged that the temperature increase at the end of the 21st century would not exceed 2°C above pre-industrial levels.

The agreement calls on member states to submit an Integrated Energy and Climate Action Plan. Spain, as a member state of the EU, has committed itself through major structural changes towards a major Energy Transition, included in its "Strategic Framework for Energy and Climate"

(February 2019) [37]. The pillars that make up this framework are.

- **Draft Law on Climate Change and Energy Transition:** All this will only be possible through a major change of the regulatory framework to ensure supply and at reasonable prices, and with a greater participation of the population through self-consumption. This regulatory framework is the institutional tool to facilitate the progressive adaptation of our reality to the demands of climate action. To this end, it provides institutional cooperation tools and an enabling framework for the energy transition. Furthermore, it aligns itself with the European Union's regulatory package known as "Clean Energy for All Europeans", which is one of the most important energy legislative packages, to ensure the commitment of all the countries that make up the Community to promote a greater market penetration of renewables.
- **Just Transition Strategy:** It consists of a series of necessary measures to optimize the forms of the transition preventing anyone from being left behind. Includes employment opportunities from the transition through vocational training frameworks, active employment policies, support and accompanying measures, encouraging investments, inter alia, in pumping storage systems and batteries, plans to reactivate territories likely to suffer and to increase international interconnections. In addition, it includes instruments to reduce inequality, improve access to the network and include new technological solutions to give it more intelligence and flexibility, and support to consumers and prosumers (consumers and electrical products) in particular the vulnerable.
- **Integrated National Energy and Climate Plan (PNIEC) 2021-2030:** Defines the objectives of reduction of GHG emissions (greenhouse gases), penetration of renewable energies and energy efficiency. In addition, it defines through simulation models which is the most appropriate and efficient way to achieve it, maximizing opportunities and benefits for the economy, employment, health and environment, and minimizing costs. In terms of reduction, it aims to reduce GHG emissions by 21 per cent compared to 1990. Regarding the penetration of renewable energies, it is proposed to triple the megawatts of renewable generation by 2030 to reach a contribution of renewables in the electricity mix of 74%, bringing wind to 50 GW (+114%) and solar photovoltaics up to 37 GW (+683%). Energy efficiency will be improved by 39.6%.

The three parts are key to ensuring that Spain has a stable and precise strategic framework for the decarbonisation of its economy; an efficient road map for the coming years; and a fair transition, to ensure that people and territories take advantage of opportunities in an equitable manner. In total, it is estimated that the energy modernisation process will involve the mobilisation of around €236 billion between 2021 and 2030. With the ultimate objective of making Spain a carbon neutral country by 2050, which can only be achieved by reducing energy consumption with greater efficiencies and greater presence of renewables [38].

All this is in line with a significant reduction in the costs of these technologies, which are making renewable projects more and more profitable. Photovoltaic and wind energy already have a lower

COE (energy cost) than traditional technologies, to the point that they no longer require government aid to be competitive. Between 2014 and 2018, the COE for photovoltaics was reduced by 65% (making it the cheapest) and 30% for wind, while that for coal only by 14% and that for cogeneration by 10%.

5.3. Enterprise analysis

When macroeconomic conditions do not follow a very positive trend, as has happened in our analysis, the selection of values increases their importance, because the difference between a good and a bad selection of values will be more pronounced than at times when the vast majority of companies in the market follow the same direction. On the other hand, the industry in which it intends to invest, that of renewable energies, has seen that it presents a very positive scenario of growth in the coming years, which will translate into increased profits for the majority of renewable enterprises and, Certainly an increase in their contributions. At this point, it is time to select a specific company and analyze it in depth to see its possibilities of being a case of successful investment within the macroeconomic and sectoral context already investigated. From a quantitative point of view, an economic-financial analysis will be made through ratios and if it offers a positive margin they can be qualified as investment value; but also, qualitative aspects must be taken into account because a certain company may have defenses, pits, or competitive advantages, because they have a recognized brand or formula; because they have a good directive that makes them invest in their company; because they have a good economy of scale that makes them have an advantage in terms of costs over their competitors; by having hidden assets not fully reflected in the accounts and which may have a much higher value; by having a presence in international markets; by having a good market share; Finally, because it has other qualities that are not fully recorded in the accounting statements but that should also be considered to consider such investment as value investment.

5.3.1. Find promising action.

The first step to finding promising action is to get the action to our attention. The most common methods can be given by using action seekers, which assumes that we can observe the best companies with a number of numerical indicators, and extracurricular situations, that bet on those companies based on the knowledge that the products or services of the company like. Both are useful for focusing on an action, but in different ways. And they can complement each other perfectly.

- a. **Action seekers or "screening".** If you wanted to know the most important ratios for all companies so that you could select the ones that are considered to be winners on a quantitative basis, and you decided to do it manually one by one, it would take a long time. Warren Buffet initially began quantitative stock analysis using the Moodyes manual, where an analyst had already included that analysis, but it was a less agile method to compare the results of different companies. Today we have share seekers, who are nothing more than a digital database that includes the most important ratios of all companies. The great

advantage is that they allow us to consult them and filter them instantaneously with just a few "clicks", which makes it very easy to develop systematic processes to find a company that we find interesting to invest in. Although several search engines must be checked, sometimes it is possible that they have been fed with the wrong data.

- b. **Extracurricular situations.** Through experiences such as consuming the product of the company, recommendations of acquaintances or blogs, observe the opening of many new stores of the company, see that many people begin to consume their products, or the appearance of many news about the company, among others. To some extent, all these actions are a kind of fundamental analysis. And if you have a developed sense of the product or service industry it is surely easy to know if the company will sell it or not. You may even find out before the rest of the investors and buy at prices that have not yet been discounted. It is a highly recommended method by investors such as Peter Lynch in his book "One Up on Wall Street".

Regardless of how an action occurs, it is often advised to treat this idea of being interested in a company as if someone had anonymously left the information in our mail. This prevents going directly to buy shares because we like them or because of the reputation they have, because it is very typical the reasoning "I have a rich acquaintance who invests in this company, I will do the same". You should also ignore search engine recommendations to buy or sell.

In this work, given the nature of the master's degree to which this work is directed, the focus has been on a very particular type of company: those that belong to the renewable energy subsector. Therefore, a first step is to consult the list of companies listed in the Spanish continuous market that are of this type. Figure 5.14 shows that there are currently four companies that meet this requirement: Audax Renovables, Grenergy Renovables, Solarpack Corporación Tecnológica and Solaria Energía y Medio Ambiente [39].

1. Petróleo y Energía	2. Mat.Basicos, Industria y Construcción	3. Bienes de Consumo
4. Servicios de Consumo	5. Servicios Financieros	6. Tecnología y Telecomunicaciones
7. Servicios Inmobiliarios		
Subsector: 1.1 Petróleo	BRASKEM, S.A. PETROLEO BRASILEIRO, S.A. (PETROBRAS) REPSOL, S.A.	
Subsector: 1.2 Electricidad y Gas	CENTRAIS ELE. BRASILEIRA S.A. ELETROBRAS COM.ENERGETICA DE MINAS GERAIS-CEMIG COMPANHIA PARANAENSE DE ENERGIA-COPEL B ENAGAS, S.A. ENDESA, SOCIEDAD ANONIMA IBERDROLA, S.A. NATURGY ENERGY GROUP, S.A. RED ELECTRICA CORPORACION, S.A. USINAS SIDERURGICAS DE MINAS GERAIS, S.A.	
Subsector: 1.4 Energías Renovables	AUDAX RENOVABLES, S.A. GREENERGY RENOVABLES, S.A. SOLARIA ENERGIA Y MEDIO AMBIENTE, S.A. SOLARPACK CORPORACION TECNOL. S.A.	

*Figure 5.14: List of Companies by Sectors listed on the Spanish Stock Exchange.
Source: Spanish Stock Exchange and Markets.*

Of the four, only Solaria Energía and Audax Renovables have been listed on the stock exchange for more than 3 years, making them good candidates to be analyzed below, given that reviewing

the evolution of the different parameters over an extended period of years is a very important piece of the fundamental analysis. And between the two candidates Audax Renovables has been chosen because its president and main shareholder has been a student of the UPC (Polytechnic University of Catalonia), which generates a special personal interest to analyze his company. Therefore, in view of the ways of finding actions that have been discussed, we could say that it has been done extracurricular.

5.3.2. Apply the valuation model

Once you have a candidate action on which we consider whether it can be profitable to invest you should move to a systematic valuation model. Most investors look at very different factors to value the stock, but by compiling the most crucial factors on which the vast majority of value investors agree, Table 5.9 has been created as a generic valuation model.

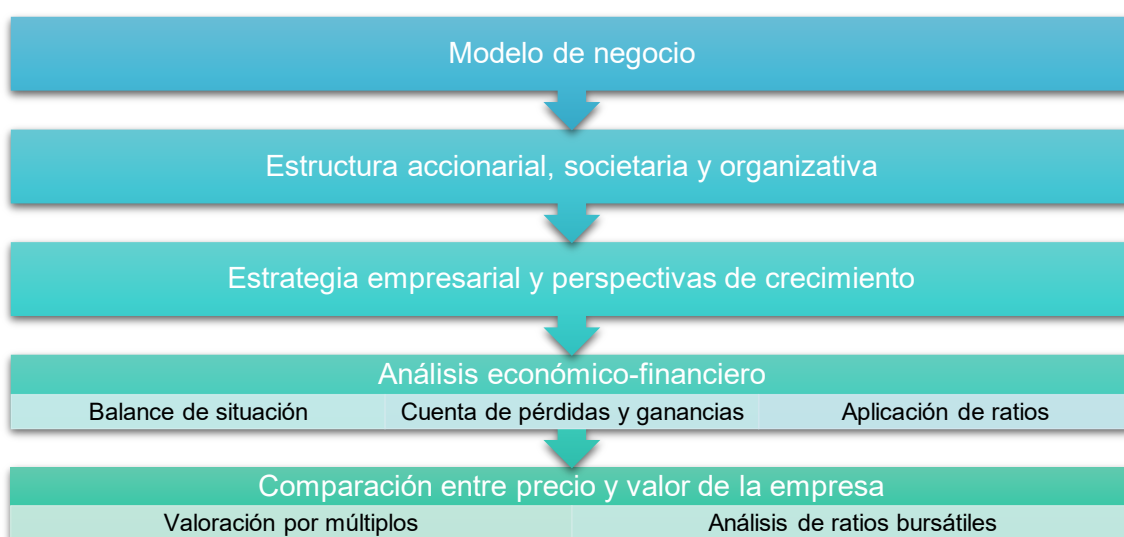


Table 5.9: Steps to apply to analyze a company. Authors' own creation.

In this work, as this valuation model will be applied to the Audax Group, the information available from the annual reports on the Group's website [40], official information provided by the Bolsa de Madrid, has been used throughout this section (Section 5.3.2) [41] and a report by the Spanish Institute of Financial Analysts (IEAF) based on fundamental analysis [42].

5.3.2.1. Business model

The Audax Renovables group is the leading energy group in the SME segment in Spain. Headquartered in Spain, it is composed of around 40 subsidiary companies, has 544 employees and has 338,141 clients, with presence in 7 European countries and Panama. Its value proposition is to supply energy at competitive prices (unregulated), with products that are adapted to the needs of customers and of the moment and with a quality customer service.

The start of the Group stems from the merger of Audax Renovables and Audax Energía. Audax Energía, which was born in 2009 as a marketer, and grew organically until 2012, has completed an inorganic corporate growth and internationalization strategy since then, so it has expanded its business by acquiring other companies. Between 2013 and 2018, it acquired a total of 7 companies. Among them, it acquired 70.8% of Audax Renovables (founded in 2000 as Fersa Renovables). This company had started trading on the secondary market of the Barcelona Stock Exchange in 2003 and in 2007 it was listed on the SIBE of the Madrid Stock Exchange. When in 2018 an inverse merger between Audax Energía and Audax Renovables was approved by the General Shareholders' Meeting through an exchange of shares, Audax Renovables became the dominant company of the Group and its listing on the stock exchange became the entire perimeter of the Audax Renovables Group, under the name ("ticker") ADX.MC [43].

Currently, it is present at two points in the energy value chain, which divides the Group into two divisions that form vertical integration synergies: the generation and commercialization.

- On the one hand, its 100% renewable generation division, developed by Audax Renovables, has installed power, based on wind energy, of 91 MW distributed between Spain (49%), Poland (38%) and France (13%), which produced 365 GWh throughout 2019, only 5% less than the same period of the previous year (Figure 5.15). In addition, it has a project under construction in Panama of 66 MW and will have photovoltaic plants with a total of 320 MW in Spain at its disposal from 2021, which can produce about 600 GWh per year.

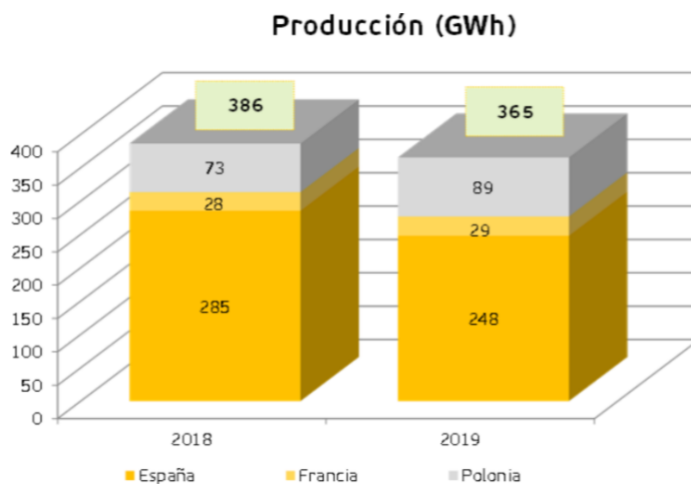


Figure 5.15: Comparative energy generated in GWh (2018 - 2019) by Audax Renovables. Source: Audax Renovables.

On the other hand, its marketing division, developed by Audax Energy, offers electricity and gas. Its supply points are divided between Spain (66%), the Netherlands (19%), Italy (9%) and the rest of Europe (6%), so it has an important international presence, from which they draw about 24% of their income. Of the total supply points, 80% are electricity (from renewable sources) and 20% are gas. The energy supplied in 2019

decreased by 1% compared to 2018 due to a drop in demand, until 9.9TWh, of which 66.9% was electricity and 33.1% gas (Figure 5.16).

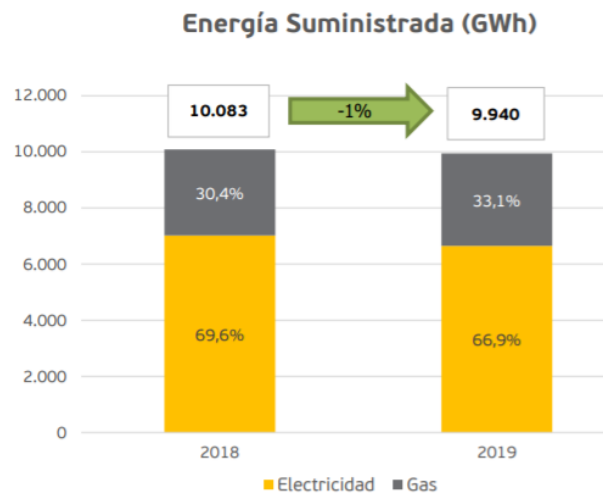


Figure 5.16: Comparison of energy supplied in GWh (2018 - 2019) according to the energy source. Source: Audax Renewables consolidated annual accounts (2019).

After the merger, the company has taken a strategic turn in its structure, focusing on the marketing industry and divesting part of its generation business. In this line, in August 2019, ADX sold 58.6 MW of capacity. To the point that currently 96.4% of its income comes from marketing, a fact by which marketing is undoubtedly its main activity.

The different marketing companies offer very focused rates to a specific customer segment to adapt to their consumption and needs. Audax's client portfolio consists of 51% SMEs, 35% large companies and 14% retail stores. It finds a solid positioning in its niche, being a medium-sized company, more flexible than the traditional ones, which are very large, and with more financial muscle than most independent marketers. Very focused on putting the customer first with a quality service based on technology, offering digitally invoices, adaptation of payment methods, demand forecasting algorithms, process automation or real-time analytics to improve the user experience, although it does not have too relevant competitive advantages.

With all this it has managed to progressively increase its market share in the SME segment that started around 0% in 2009, went by 2% in 2013, and then by 3% in 2015. Already in 2018 it managed to position itself in Spain as the largest independent marketer in the SME segment with 5% of the market share, fourth as a supplier to SMEs and ninth as a global supplier in Spain (see Figure 5.17).

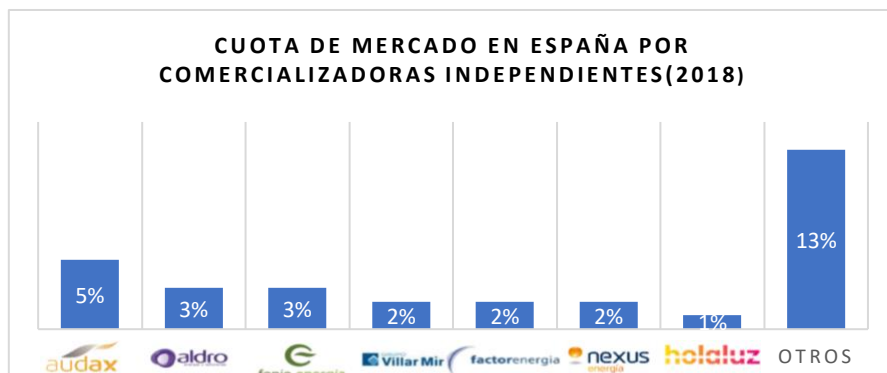


Figure 5.17: Market share in Spain (2018) of energy suppliers in the SME segment. Authors' own creation. Source: Red Eléctrica.

5.3.2.2. Shareholding, corporate and organisational structure

As for the **shareholding structure**, as of February 2020, 84.6% of the Group belonged to Eléctrica Nuriel, S.L.U and the rest (15.4%) were freely listed on the stock exchange (it is known as "free float"), so the Audax Renovables Group does not have its own shares. Eléctrica Nuriel belongs 100% to Excelsior Times, S.L.U, and both belong to a single partner that is Francisco José Elías Navarro, Industrial Technical Engineer for the UPC.

Below is its **corporate structure**, as of December 31, 2019:

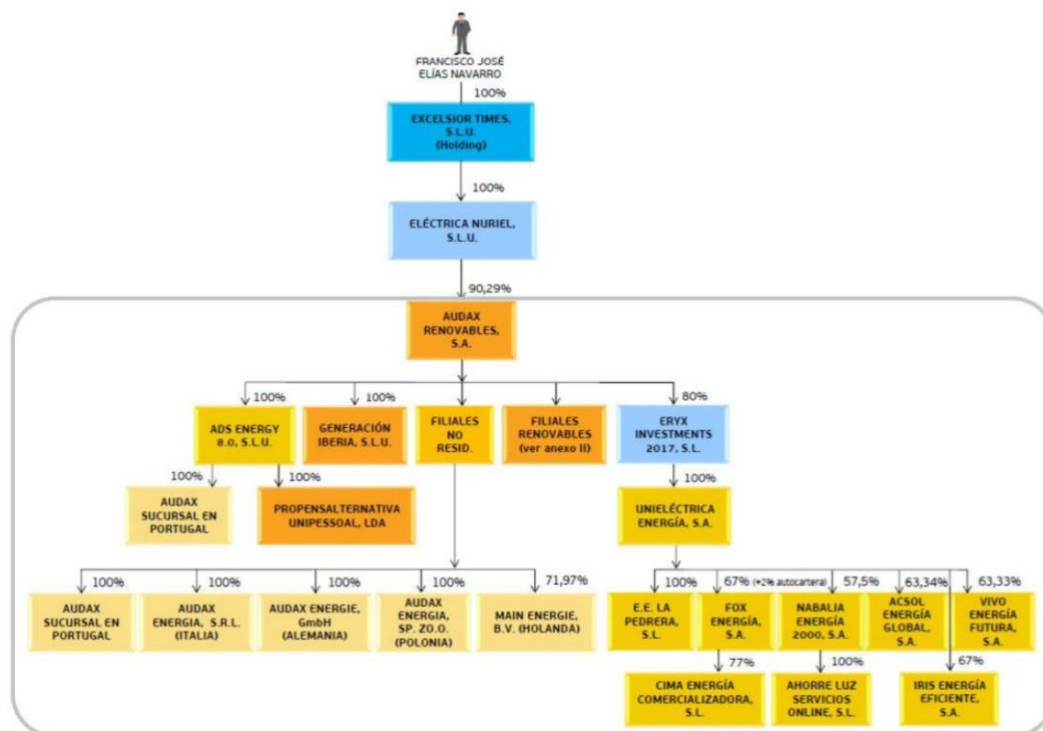


Figure 5.18: Corporate structure (December 2019) of the Audax Renovables Group.

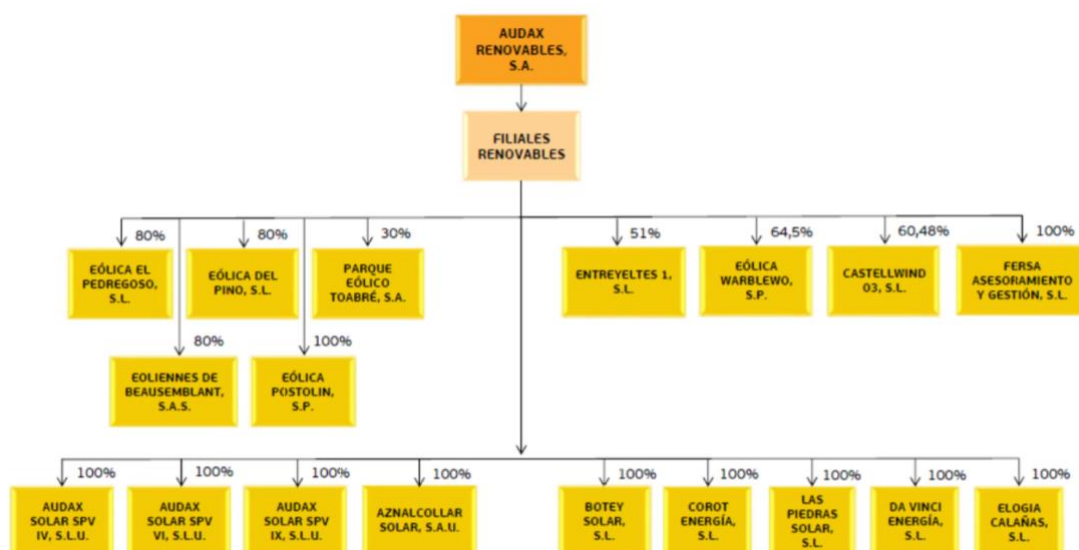


Figure 5.19: Companies included in the table "Renewable subsidiaries".

In relation to its **organizational structure**, the Group manages its staff, made up of 544 people, of whom 364 are in Spain, jointly to optimize the vertical integration carried out. This allows the government of the entity to act with agility in either of the two existing business lines. It is divided by occupational category into the classic pyramid structure of command in a balanced way: top management (1%), management (3%), leadership (6%), middle management (10%) and others (80%). With a commitment to the creation of stable employment, through indefinite recruitment, has 77% of permanent employees and 23% with temporary contracts. The average annual remuneration is €32,164 for men and €22,393 for women.

Its Board of Directors was renewed in 2016 and is currently made up of five directors, two of whom hold the majority of shares. One is José Elías, founder, sole shareholder, president of the Shareholders' Meeting and the Board of Directors, which is why the share price is very exposed to his figure.

5.3.2.3. Business strategy and growth prospects

Audax Group's business is positioning itself clearly around marketing, getting rid of much of its generation business, which is very capital-intensive. Despite the fact that marketing has lower margins due to the great competition that exists and that the product has little differentiation, they are carrying out three strategies to mitigate it:

- **Market consolidation.** Through inorganic growth continue to acquire renewable enterprises with attractive customer portfolios to increase their market share and make a leap in revenue volume to take advantage of economies of scale, reduce reliance on third-party suppliers when generating and increase the number of energy supplies. With this they seek to be lighter in assets, improve their margins and improve their positioning in a more expensive way (350 million euros accumulated in mergers and acquisitions in 2018), faster.

With the synergies generated by the vertical integration of marketing and generation, organic growth is also accentuated, with a special focus on SMEs, which are more profitable than the retail or industry, by requiring a lower cost structure to supply them.

- **Expansion.** Its strategy of scaling with a light asset business model is to focus acquisitions with special interest in mature international markets where it can replicate the success they have had in Spain, like Italy, where a major liberalisation of the electricity market is taking place.
- **PPA's** ("Power Purchase Agreement"). In order to be more competitive they have planned to increase their EBITDA margins on sales by replacing the source of the energy they had so far acquired from the "electric pool" Iberian Energy Market (MIBEL). Starting in 2020, they will progressively start sourcing from suppliers with whom they have previously entered into a contract called a PPA. This will allow them to cover in 2022 2/3 of the energy they supply, of which 1/3 part of PPA's with third parties and 1/3 of PPA's with Group companies, the other 1/3 will still be extracted from the "Pool". Of the PPPs with third parties, they have so far been confirmed with J.P. Morgan (660 MW), Allianz (708 MW) or TrinaSolar (300 MW). And from the PPPs with companies of the Group it will obtain them through the construction of a plant of 320 MW photovoltaic.

This will increase their flexibility and reduce costs. Greater flexibility because, even if they commit to buying energy from the supplier, they have the option to transfer the PPP to the final customer at any time by getting rid of the contract and if the demand increases they only have to create new contracts. This will result as a clear lever for their growth, allowing them to scale without having to face the large capital investments required by the generation industry. And the reduced costs that give them the ability to supply themselves from the cheapest energy producers will make them cost leaders. In fact, they bet on photovoltaic energy, which apart from being renewable (aligned with the essence of the company) is the cheapest energy currently. With this they aim to achieve, in the medium term, acquisition prices of up to 50% cheaper than those purchased in the "electric pool" (which were on average 54 €/MWh in 2018, according to OMIE), which will mean a huge cost savings. In 2019 they had signed 1.7 TWh of supply for 2021 of photovoltaic installations with a cost c. 20% lower than offered in the wholesale market, allowing you to reduce the cost of their supplies c.3% during the period. The big companies, which offer about 220TWh/year, to offer these large quantities of electricity are forced to use almost the entire spectrum of sources of the mix available in Spain, offering the average prices of the pool.

The Group estimates that by 2022, these strategies will lead to a significant growth in the number of expected customers up to 500,000, in the energy sold up to 15 TWh, in the EBITDA generated over 100 million euros and in the EBITDA margin on sales close to 10%.

5.3.2.4. Economic and financial analysis of the enterprise

The economic-financial analysis allows to analyze the good health of a company. There is a connection between the quality of a company and its financial accounts. A quality company being

protected from competition will reflect in its accounts a sustainable growth greater than that of the sector in sales, margins, cash flows and profits, and therefore, a greater return on the capital employed.

It intends to make a thorough analysis of the economic situation by looking at its profit and loss account and its financial situation by looking at its balance sheet. It will be done dynamically, comparing the 2019 data with those of 2018 to see how it has evolved in a very disaggregated way and understand in detail the current functioning of the business. Finally, a study is made by ratios of the last 5 years to try to detect possible trends.

To carry out the economic-financial analysis of any listed company we can go to their annual reports on their website, because by law they are obliged to publish them publicly. On the Audax website, we find its consolidated annual reports, its non-financial information statement, the period of payment to suppliers and alternative performance measures. These are the official reports and where we find an exhaustive analysis of each of the components mentioned.

In fact, on the internet there are also portals where in addition to the quotation there is financial information that is extracted from the official reports of the companies and have "screeners" to filter the actions. The portals make it very easy to find generic information quickly and, being less disaggregated, allow for quick comparison of long periods of time. Some of the most important, trusted and potentially most useful are:

Financial portals	Website
Yahoo! Finanzas	https://es.finance.yahoo.com/
Reuters	https://www.reuters.com/
Morningstar	https://www.morningstar.es/es/
Investing.com	https://www.investing.com/
Finviz Financial Visualizations	https://finviz.com/map.ashx
Uncle Stock	https://www.unclestock.com/
Zacks	https://www.zacks.com/
Trading View	https://es.tradingview.com/

Table 5.10: Different financial portals and their website. Authors' own creation.

Although in this work, it will be done manually from the documents of the annual reports published by the company to guarantee the quality of the data.

5.3.2.4.1 Consolidated balance sheet

In view of Table 5.11, the **economic structure** of the Group in 2019 presents 47% of current

assets and 53% of non-current assets, with total assets of 774,253 k€. Compared to 2018, total assets have decreased by 7%, due to a large reduction of 22.3% in non-current assets, which represents 63% of total assets, the impact of which is greater than that produced by a 19.5% increase in current assets, which represents a smaller part of the assets. Analysing the most important items in a breakdown, comparing 2019 with 2018:

Non-current asset

- In 2019, it has a significant **intangible fixed asset** (31.5% of the assets), formed a significant goodwill (56.5% of the intangible fixed assets) as a result of having acquired different portfolios of clients, a significant amount for rights and operating concessions, life marks and computer applications, in order of importance. In 2018 they were higher in absolute value, due to the fact that their losses and depreciations have decreased to a greater extent than new investments in intangible fixed assets.
- Its **property**, plant and equipment has made a significant change, from 166,597 (20 per cent of assets) in 2018 to 75,347 (9.7 per cent) in 2019, mainly produced by divestment (sale) of some of their wind farms in their energy generation business with an accounting value of 88,798 k€ and depreciations of which they have maintained.
- **Real estate investments** in 2019 correspond to a 30% stake in the Toabré Wind Farm S.A. (formerly Fersa Panamá SA.) for a book value of 6,905 k€.
- The **investments in companies of the group**, valued at 76,306 k€ (9.9% of the assets), are formed by credit to companies of the group for a value of 66,753 k€ and deposits and sureties delivered. In 2018, loans to companies in the group amounted to €90,720, which is why investments in companies in the group have decreased in percentage terms.

Current asset

- Debtors (basically customers) have increased from €136,076 in 2018 to €148,336 in 2019, which results in a 9% increase, and now accounts for 19.2% of the assets. A little alarming increase if we consider that sales revenue has increased by almost 6% in this same period.
- Periodifications have increased by 33.7% since 2018, due to a significant increase in anticipated commission expenses, which makes up most of the periods and corresponds to payments made to agents in advance for the recruitment of new customers. This makes sense, as it is aligned with the company's interest in expanding its marketing business.
- Cash and other liquid assets have also increased significantly since 2018, from €19,626 to €26,241 (+33.7%), although there are no significant disposal restrictions. Banks and cash make up more than 99% of this item, and short-term investments the rest. In 2019 they represent 19.5% of the assets.

ACTIVO	2019	2019 (%)	2018	2018 (%)
Activo no corriente	410.173	53%	528.479	63%
Inmovilizado intangible	244.225	31,5%	250.074	30,0%
Inmovilizado material	75.347	9,7%	166.597	20,0%
Inversiones inmobiliarias	6.905	0,9%	6.992	0,8%
Inversiones en empresas del grupo	76.306	9,9%	99.355	11,9%
Activos por impuestos diferidos	7.390	1,0%	5.461	0,7%
Activo corriente	364.080	47%	304.420	37%
Existencias	1.812	0,2%	4.513	0,5%
Deudores	148.336	19,2%	136.076	16,3%
Inversiones en empresas del grupo	36.907	4,8%	45.892	5,5%
Efectivo y otros activos líquidos	150.784	19,5%	98.313	11,8%
Periodificaciones	26.241	3,4%	19.626	2,4%
Total activo	774.253	100%	832.899	100%

Table 5.11: Economic structure 2018 and 2019 (31 December). Data in thousands of euros. Own elaboration.

In view of Table 5.12, the **financial structure** of the Group in 2019 shows 20.1% of equity, 32.4% of non-current liabilities and 47.5% of current liabilities. Regarding 2018, there is an increase in equity of 11.5% and 3.3% of current liabilities, and a decrease of 25.6% of non-current liabilities. Looking at the breakdown of the most important items, with 2019 as a reference:

Net worth

- At 31 December 2018 the **share capital** was represented by 440,291,054 ordinary shares with a unit value of 0.7 euros, forming a capital of 308,204 k€. With the aim of rebalancing the equity position of the parent company, the General Shareholders' Meeting agreed to a reduction of share capital by reducing the nominal value of 0,6 euros (concept explained in Chapter 4.2). As a result of this reduction in share capital, the reserves of the parent company are increased by €264,175. The result at 31 December 2019 is that the share capital is still represented by 440,291,054 shares but with a unit value of 0.1 euros and the net worth is no longer less than the share capital. Electrica Nuriel had 90.73% of the shares in 2018 and 88.48% in 2019, with the rest listed on the Spanish stock exchange.
- The issue premium remained unchanged between 2018 and 2019, representing more than 50% of the equity, as a result of the capital increases produced by the Group's numerous acquisitions. The latest addition was in 2018, worth €141,367, a product of the Audax Energy merger with Audax Renovables.
- Reserves have a significant accumulation of losses from prior years (with significant losses in 2015 and 2016)

- It has no shares of its own.
- Conversion differences occur when converting balances of other currencies with which some entities of the Group operate into euros, they represent only a 0.2% change in equity.
- The distribution of results for the 2019 financial year was €10,000 to dividends and €6,812 to offset losses from previous years.

Current liabilities

- Provisions for long-term unforeseen obligations have been settled during 2019 or have been transferred to current accounts payable for €1,459.
- Total non-current financial liabilities rose from €272,593 to €221,619 (-18.6%). Due to the fact that non-current debts with credit institutions have dropped by 64.1%, the withdrawal of €79,000 and the transfer of €9,587 to current debt, despite the increase of 47.7% for the issuance of new bonds worth €45,808.
- Total current financial liabilities have increased from 188,655 k€ to 173,011 k€ (-8.3%). Those relating to credit institutions have decreased by 31.4% compared to 2018, as a result of registering €338,807, deregistering €380,986 and transferring €9,587 from non-current to current. Those relating to the issuance of bonds have remained virtually the same for 2018, having discharged and derecognised approximately the same amount during the year. Other financial liabilities (basically debts with Group Companies), on the other hand, have increased by 75.4% to 28,934 k€.
- Commercial creditors have gone from 93,313 k€ (11.2% of equity in 2018) to 93,820 k€ (12.1% of patrimony in 2019). The suppliers' debt, which is their main item, has increased from €75,365 to €77,141, a result of the Group's increased sales and a reduction in the average payment period to suppliers, which has gone from 41 days in 2018 to 24 days in 2019.
- The share of other liabilities has increased, above all, due to the increase in advances from customers (due to the improvement of offers in the company's prepaid rates) which has gone from 13,080 k€ to 45,231 k€.

PATRIMONIO	2019	2019 (%)	2018	2018 (%)
Patrimonio neto	155.714	20,1%	139.566	16,8%
Capital	44.029	5,7%	308.204	37,0%
Prima de emisión	420.316	54,3%	420.316	50,5%
Reservas	-364.322	-47,1%	-637.245	-76,5%
Resultado del ejercicio atribuido a la sociedad dominante	25.417	3,3%	8.412	1,0%
Diferencias de conversión	1.682	0,2%	1.717	0,2%
Otro resultado global	-4.901	-0,6%	4.904	0,6%
Participaciones no dominantes	33.493	4,3%	33.258	4,0%
Pasivo no corriente	250.778	32,4%	337.379	40,5%
Provisiones	1.211	0,2%	2.670	0,3%
Deuda por emisión de obligaciones	143.184	18,5%	96.938	11,6%
Deuda con entidades de crédito	46.554	6,0%	129.873	15,6%
Otros pasivos	59.829	7,7%	107.898	13,0%
Pasivo corriente	367.761	47,5%	355.954	42,7%
Provisiones	1.270	0,2%	949	0,1%
Deduda por emisión de obligaciones	67.534	8,7%	67.985	8,2%
Deuda con entidades de crédito	71.121	9,2%	103.713	12,5%
Acreedores comerciales	93.820	12,1%	93.313	11,2%
Otros pasivos	134.016	17,3%	89.994	10,8%
Total patrimonio	774.253	100%	832.899	100%

Table 5.12: Financial structure 2018 and 2019. Data in thousands of euros. Own elaboration.

5.3.2.4.2 Consolidated profit and loss account

In view of Table 5.13, the Audax Renewables Group closed 2019 with revenues higher than those of 2018, going from 986,947 thousand euros to 1,043,789 thousand euros, which meant a 5.7% increase. This growth was driven by revenues from the marketing business segment, which increased by 6.3 per cent, constituting 96.8 per cent of revenues, despite the fact that revenues from the generation decreased by 9 per cent,4%, since they are a less important part of the business.

The company's main loss in both years came from the supplies, which came exclusively from the spending of the electricity suppliers in the marketing business. As the gross margin has been reduced relative to operating income, it has improved from 10.5 per cent to 12.1 per cent.

The EBITDA stood at 73,250 thousand euros (7% on sales), increasing by 37%, compared to 2018, which represented 5.4% on sales, due to the good performance of the marketing business in Spain and Portugal, the success of replicating its strategy in the markets of the rest of Europe and the incorporation of UniEléctrica into the Group. The generation division, even generating very small revenues compared to marketing, has a margin of EBITDA on sales radically higher than marketing (4.2% marketing; 93.5% marketing), so in 2019 generated 41,7% of the Group's EBITDA.

CUENTA DE RESULTADO GRUPO AUDAX RENOVABLES	31.12.2019	%	31.12.2018	%
Ingresos de las operaciones	1.043.789	100%	986.947	100%
Aprovisionamientos	-917.218	-87,9%	-883.246	-89,5%
Margen bruto	126.571	12,1%	103.701	10,5%
Gastos por retribuciones a empleados	-20.994	-2,0%	-19.360	-2,0%
Otros gastos de explotación	-37.274	-3,6%	-39.521	-4,0%
Amortización del inmovilizado	-26.228	-2,5%	-25.079	-2,5%
Deterioro y resultado por enajenaciones del inmovilizado	4.947	0,5%	8.575	0,9%
Resultado de explotación	47.022	4,5%	28.316	2,9%
Ingresos financieros	4.005	0,4%	4.124	0,4%
Gastos financieros	-19.490	-1,9%	-20.831	-2,1%
Resultado por enajenaciones y variaciones de valor de instrumentos	1.687	0,2%	-291	0,0%
Diferencias de cambio	-106	0,0%	-94	0,0%
Resultado financiero	-13.904	-1,3%	-17.092	-1,7%
Resultado de entidades valoradas por el método de la participación	-87	0,0%	-48	0,0%
Resultado antes de impuestos de las actividades continuadas	33.031	3,2%	11.176	1,1%
Gasto por impuesto sobre las ganancias	-1.693	-0,2%	-1.772	-0,2%
Resultado neto consolidado	31.338	3,0%	9.404	1,0%
Resultado atribuible a la sociedad dominante	25.417	2,4%	8.412	0,9%
Resultado atribuible a participaciones no dominantes	5.921	0,6%	992	0,1%

Table 5.13: Audax Renewables Group profit and loss account. Own creation. Source: Audax Renewables consolidated annual accounts

Expenditure on staff remained constant at 2 per cent on income, with a slight absolute increase of 8.4 per cent as a result of the growth in the company's workforce. Depreciation losses accounted for only 2.5 per cent of sales, as only a small part of the company's assets is held in tangible assets.

The operating result improved from 2.9% in 2018 to 4.5% in 2019. And if we add to the operating result the financial income, we obtain in 2019 a margin on sales of 4.9%, a fact that indicates that the company is doing its business well. While the financial result has improved by 18.7%, due, among other factors, to the reduction of financial debts to third parties. However, it is still negative, produced by significant external financing of -1.3% on sales.

By discounting the financial result to the operating result, a Consolidated Net Result of 31,338 thousand euros is obtained, of which 81% is attributed to the dominant company and 19% to the non-dominant ones. This Consolidated Net Result, which tells us if the company ends up making money at the end of the year, increased 233% compared to 2018; on 2019 sales constituted a net margin of 3.0%, which was three times the previous year. According to a study carried out by the CNMC, the expected net margin of marketers in the free market stood at 5% in 2017 (although it came from zero or negative values in the period 2011-2014), so that the company is still below what was expected for the sector, but it seems to be evolving favorably.

Finally, since profits can be manipulated according to the interests of the company, one usually looks at the Cash Flow, which gives a more reliable picture of the evolution of the company. In 2018, it reached 25,908 thousand euros and in 2019 it increased by 103% to 52,619 thousand euros.

5.3.2.4.3 Economic-financial analysis by ratios.

From the economic-financial analysis we can extract various ratios and indicators to diagnose competitive advantages that ensure the long-term viability of the company, capturing trends, strengths and weaknesses. Being quantitative allows to avoid the errors associated with the selection of values as a result of purely subjective criteria, systematizing our investment process. In addition, it makes it possible to examine several companies and to make a homogeneous comparison between them, regardless of their size, according to the requirements that each investor wants. The tables have been filled with some reference parameters that mark the approximate optimum in which the ratios should be, some of them have been based on indications from Warren Buffet [44].

If your **financial structure** is taken into account (Figure 5.14):

- The company has very fair **liquidity** levels, with a ratio close to 1 over the last 4 years, which could lead the company to be unable to meet its short-term debts and obligations. With virtually no stock available, their cash cycles depend only on the average period of customer collection and supplier payment. In 2019, the average payment period to the suppliers of the Spanish companies of the Group was 70.98 days. Being elevated, it gives them more flexibility to operate on a smaller working fund. The cash-flow ratio, which has grown over the past three years, shows a significant level of cash flow, accounting for 41% of current liabilities in 2019. Again, high in proportion due to the lack of stock in the Group's marketing operations.
- In terms of **solvency**, the company does not present serious problems, as it has progressively improved its position over the last three years, with a value of its assets higher than that of its liabilities, gradually reducing its large accumulated losses.
- Its financial structure indicates a degree of **over-indebtedness**, which reached a total debt ratio of 86.8% in 2017. It increased considerably from 2015 to 2017, but has declined positively to 79.9% in 2019 settling part of its debts with credit institutions and improving its annual results. Even so, it is still highly leveraged and debt quality is low, with more than 59% of it due in the short term. In addition, more than half of its debt is owed to credit institutions and buyers of its issued bonds, further worsening its quality because of the financial costs involved and the severity of the consequences of not settling them on time. Therefore, it is preferable that it be commercial debt. Ultimately, because of the large number of acquisitions that the Group has made, it has been very aggressively funded and is in a risky financial situation.
- It has no **equity balance**, so that its permanent resources are not sufficient to finance its non-current assets (only in 2015 and 2017), and even less has a solid coverage, since its equity is not enough to finance it.

ANÁLISIS FINANCIERO		Fórmula	Valor referencia	2019	2018	2017	2016	2015
LIQUIDEZ	Liquidez	$\text{Activo Corriente} / \text{Pasivo Corriente}$	Entre 1,5 i 2	0,99	0,86	1,01	0,91	1,25
	Acidez	$(\text{Activo Corriente} - \text{Existencias}) / \text{Pasivo Corriente}$	Entre 0,8 i 1	0,99	0,84	1,01	0,91	1,25
	Tesorería	$\text{Tesorería} / \text{Pasivo Corriente}$	Aprox. 0,3	0,41	0,28	0,20	0,57	0,72
SOLVENCIA	Solvencia	$\text{Activo} / \text{Pasivo}$	Mayor que 1	1,25	1,20	1,15	1,40	1,52
ESTRUCTURA	Ratio endeudamiento total (%)	$(\text{Pasivo} / (\text{Patrimonio Neto} + \text{Pasivo})) \times 100$	Entorno al 60%	79,9%	83,2%	86,8%	71,6%	65,8%
	Calidad de la deuda	$\text{Pasivo Corriente} / \text{Pasivo}$	0	0,59	0,51	0,83	0,15	0,11
	Deuda con entidades de crédito y obligaciones (%) sobre pasivo	$(\text{Deuda con entidades de crédito y obligaciones} / \text{Pasivo}) \times 100$	-	52,9%	57,5%	61,7%	75,9%	84,1%
	Coste medio de la deuda	$(\text{Gastos financieros} / \text{Pasivo}) \times 100$	-	3,2%	3,0%	3,4%	5,2%	3,9%
	Coste medio con entidades de crédito y bonos	$\text{Gastos financieros} / \text{Deuda con entidades de crédito y obligaciones}$	-	6,0%	5,2%	5,5%	6,8%	4,6%
EQUILIBRIO PATRIMONIAL	Activo No Corriente financiado con recursos permanentes	$((\text{Patrimonio Neto} + \text{Pasivo No Corriente}) / \text{Activo No Corriente}) \times 100$	Mayor que 100%	99,1%	90,2%	100,6%	87,3%	102,0%
	Activo No Corriente financiado con Patrimonio Neto	$(\text{Patrimonio Neto} / \text{Activo No Corriente}) \times 100$	Mayor que 100%	38,0%	29,2%	21,9%	31,5%	37,7%

Table 5.14: Financial analysis by ratios.

If you look at its economic structure (Figure 5.15):

- Economic performance or **ROI** ("Return on investment") has improved every year since 2016, from -10.6% to 6.6% in 2019. It is due to the significant increase in its asset turnover, the fact that it has disposed of a large part of its generating fixed assets and increased its revenue, and to a slight increase in its margin on sales (which was negative in 2015 and 2016 because it was in a loss). These are not yet particularly attractive figures that indicate that the business has some competitive advantage, but indicate that the business, regardless of how it is funded, is doing better.
- Another indicator of economic performance that investors use to assess the quality of a company's business is **ROCE**. Unlike the ROI, it only covers the return on capital employed. It is especially useful when comparing the performance of companies in capital-intensive sectors. Between 2015 and 2019 it has followed a similar behavior to ROI, and exceeds 12% in 2019, indicating that it begins to make an efficient use of capital and can be a quality company in the long term.
- The **ROE**, unlike the ROI and the ROCE, calculates the ability to generate positive results exclusively from own funds and taking into account the financial results and the payment of taxes for the year. It is of interest from the investor's point of view as it shows the net return on its capital injections. It is positive between 2017 and 2019 and negative in 2015 and 2016, with a steady improvement trend. In any case, it is higher than the ROI because of the high financial leverage ratio of the company, which makes the increase in debt increase the performance of the company because the cost of the company is lower than the ROI in that period. An ROI of 20.1% in 2019 are already interesting figures that if they manage to maintain in the coming years will significantly increase the value of the company as they will be able to accumulate a good amount of capital, which will end up being recognised by the stock market with an increasingly high share price.
- As far as **self-financing capacity** is concerned, one should look at the amount of "Cash

Flow" they generate with respect to the loans and obligations they have. Although it is positive and has increased considerably in recent years, as it has also been asking for new loans and issuing new bonds, its ratio is less than 40% in the last 3 years. This means that they are not generating enough cash to repay the loans to which they have already committed, which is why their strategy of divestment in assets of property, plant and equipment has helped them to pay their debts. It is worth mentioning the results of the companies' sales in India and the Montenegro project of 2015, which led to a loss of 42,057 million euros giving an ROI, ROE and Cash Flow negative. And in 2016 a deterioration in its assets in Poland by regulatory changes meant losses of 30,747 thousand euros, giving a negative ROI and ROE, although a positive Cash Flow.

- Finally, if **growth** is analyzed, the company has a very important year-on-year revenue growth in 2017 with the merger to the group of other international companies, and each year they have organically increased their sales in all countries. Its gross margin that was 100% in 2015 and 2016, when they were only a generator, is reduced in 2017 when they begin to become a marketer and has been increasing until 2019 with 12.1%. A high gross margin shows that the price of the products sold is well above the cost of the goods sold, but as they offer a product without differentiation in a sector with high competition they have a very limited selling price, This is why they intend to improve their acquisition costs with PPPs to improve their gross margin in the coming years. And its net margin that was negative in 2015 and 2016, has gradually grown to 3% in 2019, which remains relatively low due to the company's large financial expenses. According to Warren Buffet, the gross margin should be more than 40% and the net margin more than 20% to indicate the presence of a competitive advantage, requirements that do not meet.

ANÁLISIS ECONÓMICO		Fórmula	Valor referencia	2019	2018	2017	2016	2015
RENDIMIENTO ECONÓMICO	Rotación de activos	$Ventas / Activo$	-	1,35	1,18	1,04	0,12	0,09
	Margen sobre ventas	$(BAII / Ventas) \times 100$	10%	4,9%	3,3%	3,2%	-87,9%	-21,6%
	Rendimiento Económico (ROI)	$Rotación de activos \times Margen sobre ventas$	> 10 %	6,6%	3,9%	3,3%	-10,6%	-2,0%
	ROCE	$(BAII / (Activo - Pasivo Corriente)) \times 100$	>12 %	12,6%	6,8%	5,4%	-11,9%	-2,2%
RENDIMIENTO FINANCIERO	ROE	$Bdl / Patrimonio Neto$	> 13%	20,1%	6,7%	7,4%	-44,5%	-53,6%
	Coefficiente de apalancamiento	$(BAI \times Activo) / (BAII \times PN)$	>1	3,22	2,06	2,06	4,80	26,21
CAPACIDAD DE AUTOFINANCIARSE	Capacidad devolución préstamos y obligaciones a corto plazo	$(Cash flow / Préstamos y obligaciones a CP) \times 100$	Mayor que 100%	37,9%	15,1%	25,3%	60,5%	-204,3%
	Autofinanciación sobre ventas	$Cash flow - dividendos / Ventas$	-	5,1%	2,6%	3,7%	37,2%	-109,3%
	Autofinanciación sobre el activo	$Cash flow - dividendos / Activo$	-	6,8%	3,1%	3,9%	4,5%	-10,4%
CRECIMIENTO	Variación ingresos (%)	$Variación interanual$	> 10 %	6%	47%	2123%	6%	11%
	Margen bruto	$Margen bruto / Ingresos$	> 40%	12,10%	10,50%	11,4%	100%	100%
	Margen neto	$Bdl / Ingresos$	> 20%	3,0%	1,0%	0,9%	-105%	-193%

Table 5.15: Economic analysis by ratios. Authors' own creation. Tabla 5.1:

5.3.2.5. Comparison of company price and value

Investing in minimums is very difficult, but buying cheap is feasible. But you must first know what

the underlying value of the stock you want to buy is. However, the problem is that to find it there are different methods that offer different results, different interests that promote different assessments and different expectations that lead to different forecasts.

The conceptually "correct" methods are those that consider the company not only from a static, but also dynamic point of view, predicting its future evolution of the business and its benefits. This is because "the value of a company's shares comes from its ability to generate money (flows) for owners. Therefore, the most appropriate method of valuing an enterprise is to discount the expected future cash flows (DCF) [45]. Even so, experience has shown that other methods are just as cost-effective for selecting value firms, without having to go into extremely convoluted forecasts and estimates. Since each method has its limitations and the market is certainly not governed by any method, at a practical level there is no winning method. Every investor ends up using the one he considers best. Hence, many of the existing valuation methods are used together to achieve much more complete information. The classification of the most commonly used methods, based on Jordi Fabregat [46], may be:

1. **Static methods:** they try to estimate the value of the enterprise by estimating the value of its assets by looking at its balance sheet. It does not take into account the future development of the company and is only fixed in the company's balance sheet. The most commonly used are the adjusted book value, in which the balance sheet values are adjusted to the current market value and the settlement value, which calculates the value of an enterprise in the event that its assets are sold at market price and its debts are cancelled. Both require an in-depth external analysis by specialized experts in order to make an isolated, sensible assessment of subjective criteria. There is also the carrying value or book value (unadjusted), which is simply the equity of the enterprise as it can be read in its balance sheet. It usually does not exactly match the "market" value but allows the particular investor to get a very rough idea of the value of the shares in a simple, fast and solid way, because it is not based on predictions. That is why it is always used as a starting point.
2. **Dynamic methods** estimate the wealth that the enterprise will generate in the future. The most commonly used is the cash flow discount method. It allows to identify the absolute value of a business, so no comparison with similar companies is needed. It is extremely sophisticated because many factors must be considered, such as expansion plans or cost variation, and the result obtained is very sensitive to certain variables applied such as discount rates or long-term growth assumptions. The dividend method also exists, but since Audax has not distributed dividends since 2010, it has not been considered as a method to apply.
3. **Multiple methods** are based on the comparison of certain ratios of an enterprise with those of other enterprises that resemble it to extrapolate their value. A multiple is the relation between the comparable value divided by the comparable variable. In order to determine this multiple, a group of companies should be analysed as large as possible to maintain the greatest number of characteristics coinciding with the company studied and to obtain a representative multiple of the group. In addition, an average multiple of at least the last 5

years must also be taken out of each company to avoid rare years within its normal operation. Their main drawback is that they can be influenced by changing market conditions very easily. But while it is simpler and generally faster to calculate a valuation multiple, the calculation of a Discounted Cash Flow requires the establishment of well-founded assumptions and extensive business knowledge, in addition to requiring the use of a considerable amount of time in their preparation. Furthermore, it is clear that the more complete and comprehensive a model is, the more it seems to approach the true value of the action, but as more subjective estimates include a model, the greater the probability of error contains and alienates the results from reality. Therefore, currently, the most widely used methods by individual equity investors in practice are multiple methods, which have, in general, less inconsistencies and the information is readily available. That is why it is the method that will be developed below. A professional uses the DFC supplemented with multiples. Generally, they should give us similar results, so together it is an excellent way to check if the assumptions made in the DFC are adequate. The most commonly used are PER, PVC, P/V, P/FCF and VE/BAIT:

- **PER.** It is the most widely used method in stock market valuation for its ease of application and to which the market pays more attention. The P/E or PER (initials of "price earnings ratio") is the equivalent of dividing the price of all shares (market capitalisation) by the profit of the enterprise. It allows us to see how expensive or cheap the stock is based on its profits. The period of return on investment is the first interpretation of the data. Indeed, a PER of 20 indicates that if profits remain constant it would take 20 years to recover the investment. A high PER is indicative of more favourable action expectations and expected future profit growth, or that the action is overvalued. While a low PER means that the stock is undervalued or because a deterioration in profit is expected. Most authors, including Benjamin Graham, do not look at companies whose current quotation is more than 15 times the average profit for the past three years, and recommend those companies that have PER below 10. A PER too high is risky because they are usually speculative bubbles. Even so, it should not be taken as a very precise measure since profits can be altered by management using different accounting criteria and price is a very volatile element, but it can be useful to detect good opportunities and abrupt changes in the company.
- **PVC.** From the carrying value derives the Price Accounting Value or PVC ("Price to Book" or P/B) ratio, which relates the price at which all existing shares (not only those listed) are quoted to the book value of their equity (their assets minus the value of their debts). It has historically been the most widely used ratio for valuing listed companies, although it has lost its validity in recent times [47]. It is also equivalent to multiplying the PER by the ROE of the company. A higher PVC indicates that the market values the company above its accounting and, therefore, rewards the management of the future and present company. Since the PERs are usually between 10 and 20 and the average ROE between 10 and 15%, typical values usually range between 1 and 3. It is recommended that it is below 3 provided that the company is not overvalued and is optimal if they are below 1.

- **P/V.** The price between sales or P/V ("Price to sales" or P/S) relates the quoted price to the sales figure. It is less manipulable than the PER, so it is usually used in a complementary way. It is recommended to be below 3 provided that the company is not overvalued and is optimal if they are below 1.
- **P/FCF.** The multiple P/FCF, PCF or price/free cash flow (Anglo-Saxon free cash flow), relates the quoted price of the company to the funds generated by the company, which represent the money that remains available to reinvest in the business, that is, to acquire new assets, to advance the payment of debts, to distribute dividends or to keep them as reserves. The lower values of P / FCF generally indicate that a company is undervalued and that its shares are relatively cheap relative to its free cash flow. Thus, value investors favour firms with low or decreasing prices and high or increasing free cash flows.
- **VE / BAIT.** This multiple is the most important. The value of the company ("enterprise value" in English, abbreviated EV) tells us how much it would actually cost us to buy the company, that is, it measures the amount of all the commitments that a buyer assumes when acquiring a company. Equals capitalisation + preference shares + minority interest - cash and equivalents + debt. It is considered much more accurate than PER, PVC, P/V and P/C, since all omit information when using capitalization only, than if it contemplates the value of the company. First, preference shares, which, like common shares, represent an aliquot part of the business but do not have the right to vote, pay a fixed dividend. So if we want to buy a company, we should pay that pre-set dividend to the preferred shareholders, which is why it should be accounted for as part of the value of the company. Second, minority interests which are an item appearing in the balance sheet as a consolidated item after the partial purchase of another undertaking should also be taken into account. The Audax Group has neither preferential shares nor minority interests. Third, the investor prefers the company to have a lot of cash, because that reduces the net cost of the purchase. Finally, operating liabilities are not taken into account in debt, but financial debt, derived from loans (for example from the bank), This value is usually related to AIB ("EBIT" in English) or EBITDA. Using EBITDA, instead of the Bdl, makes it possible to see and compare the operating profits of different companies without the distortion resulting from differences in tax rates and debt levels. You get the multiple of valuation EV/EBITDA, which will be better the smaller it is because we will pay less for a company that is worth more, for having better profits. Reasonable below 20, but if negative most analysts usually rule it out.

Multiple valuation application

The first step is to choose the companies with which to compare the Audax Group, a company in the small capitalization electricity sector. There is no exact number of companies needed to be included in the analysis, depending on the number of companies from which information can be obtained. It is advisable to start from a large number of companies, and then eliminate them from

the study if the multiples are too far from the average. The final rank of companies is usually very narrow, which can be focused only on 2 or 3 companies [48].

In the Spanish market there are only three more renewable companies besides Audax that are listed, so a preliminary analysis by very poor multiples would come out if only these were chosen. To expand it, the stock finder Uncle Stock has been used. It has been used specifically for being free, having a lot of data, being reliable (data providers: Yahoo Finance, Morningstar and Google Finance) and for its ease of use. It is necessary to find listed companies, carrying out a very similar activity, with a similar size and similar debt and profitability. The search engine has expanded the search for comparable companies by filtering European companies, where Audax has a large part of its operation, which are listed on a small capitalization exchange and are in the electricity sector. We have obtained a total of 25 companies, from which we have extracted 3 ratios (ROE, ROCE and % of debt) and the average of the last 5 years (to be more objective) of the 5 multiples explained above: Capitalization / VC (PVC), Capitalization / Sales (P/V), PER, Capitalization / FCF (P/FCF), EV/EBITDA (See Table 5.16).

Ticker	Nombre	Capitalización (\$)	Capitalización / VC (media 5 años)	Capitalización / Ventas (media 5 años)	PER (media 5 años)	Capitalización / FCF (media 5 años)	EV / EBITDA (media 5 años)	ROCE (media 5 años)	ROE (media 5 años)	Deuda (%) (media 5 años)
MVV1.DE	MVV Energie AG	1.946.783.232	1,25	0,42	19,24	15,64	8,94	3,07%	7,77%	74,27%
RENE.LS	REN - R.E.N. SGPS S.A.	1.791.901.824	1,19	1,95	13,72	15,24	9,05	3,37%	8,80%	72,74%
FKR.MI	Falck Renewables S.p.A.	1.727.369.728	1,41	1,64	43,75	19,17	17,72	2,45%	4,61%	69,28%
SLR.MC	Solaria Energia y M.A.SA	1.363.432.456	4,31	10,5	49,28	173,85	46,2	5,11%	21,13%	66,46%
HREN.SW	R. Energie Holding SA	1.256.127.232	0,71	2,41	20	42,99	9,81	3,11%	3,70%	15,71%
TENERGY.AT	T.E.S.A.C. Technical Company	1.248.111.744	1,4	2,35	15,69	10,78	9,71	2,65%	9,16%	79,86%
ABIO.PA	Albioma	1.180.982.144	1,55	1,43	15,83	8,67	10,55	3,81%	9,89%	75,83%
VLTA.SA	Volitalia SA	1.170.321.408	1,26	3,93	260,93	31,1	22,17	0,53%	1,27%	54,41%
DRX.L	Drax Group plc	1.090.846.464	0,63	0,66	331,32	11	6,93	0,86%	1,29%	63,36%
EDHN.SW	Energiedienst Holding AG	1.007.058.240	1,13	0,95	43,16	181,96	12,83	2,04%	3,45%	51,36%
FKRAFT.OL	Fjordkraft Holding ASA	906.814.656	5,48	1,01	16	14,63	10,79	34,47%	40,09%	55,83%
PPC.AT	Public Power Corp.S.A.	870.374.976	0,12	0,21	7,36	2,19	4,17	-4,56%	-12,78%	77,60%
ESO1L.VS	Energijos Skirstymo O. AB	864.259.200	1,24	1,35	24,32	14,29	8,53	7,64%	11,51%	61,10%
EL.BU	Societatea Energetica Elec. SA	809.214.976	0,66	0,59	17,87	19,36	6,47	4,60%	4,45%	28,50%
ENO.MC	Elecnor S.A.	791.267.392	1,58	0,42	10,71	5,46	8,92	5,89%	15,89%	76,32%
ENG.W	Energa SA	763.366.784	0,47	0,46	10,5	7,08	3,91	3,39%	6,33%	51,25%
ENA.W	Enea SA	643.912.448	0,36	0,76	4,49	3,3	2,68	2,84%	4,70%	53,53%
AFK.OL	Arendals Fossekompani ASA	550.842.176	1,82	1,21	32,04	49,71	9,02	4,28%	21,64%	56,01%
TPE.W	Tauron Polska Energia SA	532.503.136	0,24	0,34	12,07	7,27	5,5	0,01%	0,14%	56,60%
LNR1L.VS	AB Ignitis gamyba	462.818.112	1,07	2,06	13,48	12,34	5,75	3,95%	6,60%	39,11%
PNE3.DE	PNE AG	395.579.200	0,92	1,66	124,45	9,66	16	4,22%	8,68%	59,53%
GRE.MC	Grenergy Renovables S.A.	359.622.400	4,05	14,87	15,91	12,26	15,01	12,55%	23,07%	76,37%
EKT.DE	Energiekontor AG	336.825.504	3,82	2,04	235,46	15,15	7,58	4,28%	23,76%	85,59%
LGD1L.VS	Litgrid AB	333.497.504	1,51	2,54	115,59	93,58	10,54	-0,58%	-0,62%	47,24%
ARN.MI	Alerion Clean Power S.p.A.	320.848.352	1,16	2,63	56,6	5,38	7,68	0,67%	2,89%	82,06%

Table 5.16: A priori companies comparable with the Audax Group and its main multiples and ratios. Authors' own creation. Source: Uncle Stock.

From these companies, to ensure that they are as similar as possible to the Audax company, those that do not meet the following requirements will be excluded: a debt greater than 60%, a ROE greater than 7% and ROCE greater than 5%. And Solaria Energia has been excluded because it has radically higher multiples than the rest. After the filter, there are 3 companies comparable to apply the multiple valuation method: Energijos Skirstymo Operatorius AB, Elecnor S.A. and Grenergy Renovables S.A.

If we now take as a reference the variables per share of Audax of the last financial year corresponding to each multiple and multiply by its multiple we obtain a range of objective prices (intrinsic value) to which the share of Audax should currently quote between 0,64 €/action and

13.15 €/action (See Table 5.17).

Múltiplo grupo empresas (1)	Variable Audax Renovables a 31/12/2019 (2)	Valoración Audax Renovables (= 1 x 2)	Valor intrínseco
Capitalización/VC 2,29	VC/Acción 0,28	Precio/Acción 0,64	Precio/Acción 0,64
Capitalización/Ventas 5,55	Ventas/Acción 2,37	Precio/Acción 13,15	Precio/Acción 13,15
PER 16,98	Bdl/Acción 0,06	Precio/Acción 1,02	Precio/Acción 1,02
Capitalización/FCF 10,67	FCF/Acción 0,07	Precio/Acción 0,71	Precio/Acción 0,71
EV/EBITDA 10,82	EBITDA/Acción 0,18	EV/Acción 1,94	Precio/Acción* 1,30

*Se ha hecho una corrección en el EV/EBITDA con la deuda neta por acción para conseguir el precio/acción por valor de 0,632.

Table 5.17: Calculation of the Audax rating range using multiples. Authors' own creation.
Source: Uncle Stock.

The multiple Capitalization/Sales has been decided to discard it given the lack of homogeneity of the results offered by the three selected companies, which caused a price per share that was inconsistent and very far from the rest. But looking at the rest of the multiples, the valuation results indicate that Audax should be listed in an indicative range between 0.64 and 1.3 €/share.

At this point a weighted average of multiples can be calculated to give more weight to the most representative business indicators and thus obtain a single target price. Here, given the enormous accumulated losses of the company, Capitalization/VC is also somewhat distant from the other multiples, so it will be counted with half weight. Finally, an average intrinsic value of €0.957/share, calculated as:

$$\text{Intrinsic value} = \frac{(0,64 + 2 \times 1,02 + 0,71 \times 2 + 1,3 \times 2)}{1 + 2 + 2 + 2} = 0,957 \text{ €/share}$$

Taking into account that the share price at the time when the study was started (prior to COVID-19) was 2.53€/share, which is 164% higher than the intrinsic value obtained. This is due to the good growth prospects expected by the company, which would positively affect the market valuation of the variables analyzed and could lead to a higher valuation. However, to reach the current quoted price would require more than doubling sales, net profit, free cash flow and EBITDA in the coming years (as calculated). This scenario is overly optimistic in the short term and does not even raise these expectations of growth on the part of the company itself (which usually presents optimistic forecasts) which forecast an increase in EBITDA of 88% and revenue of 50% by 2022. It can therefore be argued that the shares of the company under study are overvalued by the market and therefore their acquisition is not currently recommended. Even so, the improvement in the trend of all its ratios in recent years, no doubt encouraged to keep it under surveillance, because in the coming years, If the quotation drops and the company follows the lines it has been running, it could reconsider its acquisition based on the target price.

Analysis of stock exchange ratios

A final analysis can be made by looking at how the different securities and stock exchange ratios have been presented in recent years in the company, as they are good indicators on whether or

not it is worth buying their shares. For stock exchange ratios, this time, instead of assigning the sectoral averages to each multiple, their real market value will be calculated and their evolution analysed. Three other very important indicators have been added, such as the dividend return, the Piotroski F-Score and the Altman Z-Score. Some reference values have been introduced, which are the optimal values that ratios should have, drawn from advice from large value investors such as Peter Lynch [49], Warren Buffet or Benjamin Graham [50].

		Fórmula	Valor referencia	2019	2018	2017	2016	2015
VALORES BURSÁTILES	Cotización	-		2,19	1,31	0,44	0,52	0,38
	Nº Acciones	-		440 M	440 M	140 M	140 M	140 M
	Capitalización bursátil	Nº Acciones x Cotización		963,6 M	840,4 M	576,4 M	60,9 M	72,8 M
RATIOS BURSÁTILES	PER	Capitalización bursátil / Beneficio neto	< 10	31,83	31,22	37	¿	¿
	PVC (P/B en inglés)	Capitalización bursátil / Fondos propios	< 3	6,88	6,46	4,47	0,95	0,62
	P/S	Capitalización bursátil / Ventas	< 3	0,81	0,7	0,39	2	2,24
	P/FCF	Capitalización bursátil / Free Cash Flow	< 15	28,23	13,01	¿	7,45	¿
	EV /EBITDA	Valor Empresa / EBITDA	< 15	13,84	16,93	11,71	¿	50,01
	Rentabilidad por dividendos	Dividendos por acción / Cotización de la acción	> 3%	0	0	0	0	0
	Piotroski F-Score	-	> 5	8,51	7,38	5,49	5,35	5,39
	Altman Z-Score	-	> 3	2,31	1,99	1,77	0	0,051

*Datos a inicio de Q4 (octubre)

** El signo ¿ indica que no existe el parámetro debido a valores negativos

Table 5.18. Securities and stock ratios between 2015 and 2019 of the Audax Group and the optimal value at which they should be located. Securities in euros. Authors' own creation. Source: Uncle Stock.

- The share price has seen spectacular growth from €0.38/share in 2015 to €2.19/share in 2019. There have been no splits or contrasplits that affect the price of the shares, but if capital increases in 2017, where the number of shares increased from 140 million to 440 million following the merger of the group, which together with the increase in the quotation led the company to 72,8 million market capitalization up to 963.6 million euros. The company's market value has multiplied more than 13 times in just 5 years.
- It is noted that the company usually presents a very high **PER**, characteristic of technology companies that usually have favourable expectations of the action for a forecast of growth of future profits. But being much higher than 15 we can say that the action is usually overrated, because it should be below 10 to be interested. Its **PVC** does not have fair values in the last 3 years, since it is far from the maximum recommended value of 3. In addition, it is obtained from multiplying the PER by the ROE, and its PER is high and its ROE low, which makes it even less attractive. It would be more appropriate for it to be the other way around, as the investor benefits from high ROES and small PER. Nor does the **P/FCF**, which, being well above 15, denotes an overvalued quotation based on the cash flow generated by the

company.

- The **P/S** (Price/Sales), given that it is below 3 in the last 5 years, does present attractive value for the investor in value. Like the **EV/EBITDA**, which this year is already below 15.
- The **return on dividends**, which is a stock exchange ratio that measures the shareholder's return on dividends received, has been 0 since 2010 because it is very capital intensive and has spent many years at a loss. This ratio for small businesses that need to grow quickly to position themselves in the market is often low if they have profits. The fact that it is 0, and therefore does not remunerate the investor, is never positive news. The return on investment in this company would come exclusively from the revaluation of these companies (since they also do not have preference shares). However, the company has expressed its intention to start paying dividends from 2020 and depending on the progress of the business.
- The **Piotroski F-Score** is a ratio usually used in isolation. It analyses indicators of profitability, financial performance and operational efficiency jointly to give a valuation on a scale from 0 to 9. It establishes that the «winners» are those with an F-Score greater than or equal to 5 in the classification scale and that the «losers» are those who score below 5 points. In numerous studies the F-Score has been tested and it certainly improves on virtually all valuation ratios or metrics. As expected, this 2019 presented a very good rating of 8.51, which is a confidence factor to keep in mind that if you manage to maintain over time, given that 2015, 2016 and 2017 had a very unattractive rating close to 5.
- Finally, the **Altman Z-score** measures the probability that a company will fail with an econometric formula based on: current assets, undistributed profits, EBITDA, capitalization, total debt, net sales and total assets. If you get a Z-Score higher than 3 there is nothing to worry about. If it is between 1.81 and 2.99 it is likely that the company will fail in the next 2 years and if it is less than 1.81 it indicates imminent bankruptcy. Altman's formula for predicting bankruptcies is pretty accurate. In a test period of 31 years, it had an accuracy of between 80% and 90% when predicting bankruptcies a year before they happened, with a percentage of false negatives between 15% and 20%. Audax, given its poor financial situation due to a high level of indebtedness, has values of this indicator in the range between 1.81 and 2.99 in the last three years, which shows an inherent risk of investing in the company as a result of the possibility that it may fail.

6. Conclusions

In the **first block** of work (up to Section 5), a theoretical framework has been developed that is very focused on the particular investor with the indispensable information that must be known before investing in shares. It has been seen that this financial asset is marketed on the stock exchange, where its price is regulated by supply and demand under the balance of two opposite poles of those who want to buy it and those who want to sell it: the aversion to risk and the desire to make profits, both are subject to the expectations they may have of the different variables affecting the company. It has been concluded that the most consistent way to increase the chances of successful investment is through the fundamental analysis with the value investing strategy, which is set only at those companies with competitive advantages, which operate in mature and promising markets and are undervalued in order to maximise profit with minimum risk.

In the **second block** of the work (starting from section 5) an application methodology has been developed in line with the principles of value investing, illustrated by the Audax Renewable Renewable Energy Group in three parts: the general analysis, the specific or sectoral analysis and the analysis of the undertaking.

In the **general analysis**, the Spanish stock market and economy have been analysed to analyse their competitiveness and see their possible global future effect on the value of their companies, which has turned out to be low risk, but with a rather negative effect on the valuation. On the one hand, it has been seen that almost half of the Spanish stock market is in foreign hands, which indicates good competitiveness of our stock market and attractiveness of its values. In addition, the values quoted in it are, historically, revalued relatively less than those of other countries, making more attractive those companies that distribute dividends to be able to maximize profit. Moreover, the main appraisals of different organisms of rating on the Spanish country risk have been verified, which is a crucial component of the total risk of a stock exchange investment and Spain has been found to be within considerably low risk limits. Various macroeconomic indicators have also been analysed, such as interest rates, inflation, the unemployment rate, GDP and the public deficit, since they mark the trajectory of virtually all listed companies. Their unfavourable developments and forecasts in the coming years will have a negative impact on the expected revaluations of shares.

The **specific analysis** has looked at the renewable energy industry and found that it meets the value investment requirement of a promising sector, although it has many risk factors. This is because it is part of a highly developed, competitive sector given that it has a strong international presence, growing, as the national demand for electricity grows year after year and where renewable production on the national total production is barely 40%, which still leaves much disputed market share for renewables. In addition, the reduction in the costs of their technologies and global warming are undoubtedly a favourable scenario for renewable energy companies. However, it is a sector with a lot of debt, very atomized, exploited and low differentiation that

leads to positive but very low economic and financial returns (less than 4%). Therefore, the companies that will win in this industry in the coming years must be carefully selected.

The **analysis of the company** has concluded that the company is still far from being a quality company and that it is also overvalued in a situation of high risk, so it is not recommended to invest in it. In recent years, the Audax Group has achieved enormous international inorganic growth and has restructured from a producer to a trader of electricity, disposing of much of its renewable generation fixed assets to offset accumulated losses and to be less capital intensive. To improve its positioning, as it still has a very small market share, it has the synergies of vertical integration as a producer and marketer of electricity, continues to acquire customer portfolios from other companies and is seeking energy agreements with solar energy suppliers (currently the cheapest) to reduce sourcing costs, but does not appear to have sustainable competitive advantages. Its financial structure, although improving its solvency, has for years had a very fair level of liquidity combined with excessive indebtedness (especially with credit institutions), caused by the enormous losses of 2015 and 2016, and far from presenting equity balance. While its economic structure, shows economic and financial returns and gross and net margins on positive sales that have not stopped growing since 2016. However, none of them still present values that make their business especially attractive. The cash flows it generates, although they are also positive and in continuous growth, are insufficient for the company to self-finance, which makes it continue to borrow. The target price of the Group's share has also been calculated using the multiples method, because of its ease of application and good reputation. The stock finder Uncle Stock has been used to easily find the average multiples of the sector and be able to extrapolate from them a Audax target price of 0.957€/share. This price is well below its 31/12/2019 quote (considered the deadline of this study), which was 2.53€/share, even if we assume the prospects of improving the multiples that the company expects to obtain in the coming years. Finally, the evolution of the most important company's stock market multiples, such as PER and PVC, has been studied, since they are indicators of how cheap or expensive the stock is, and it has been concluded that it is overvalued and far from optimal value according to large value investors.

In short, the three-level analysis methodology discourages investment in the company under study, at the enterprise level, because of the poor forecast of obtaining returns via capital gains or dividends and because of the high financial risk involved; at the sectoral level because of the lack of competitive advantages despite the good growth prospects that the sector will have; and at the general level because of the absence of positive effects that the evolution of the Spanish macroeconomy may have on the company's contribution.

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8. Annex

Dun & Bradstreet Country Risk Ratings - enero 2020

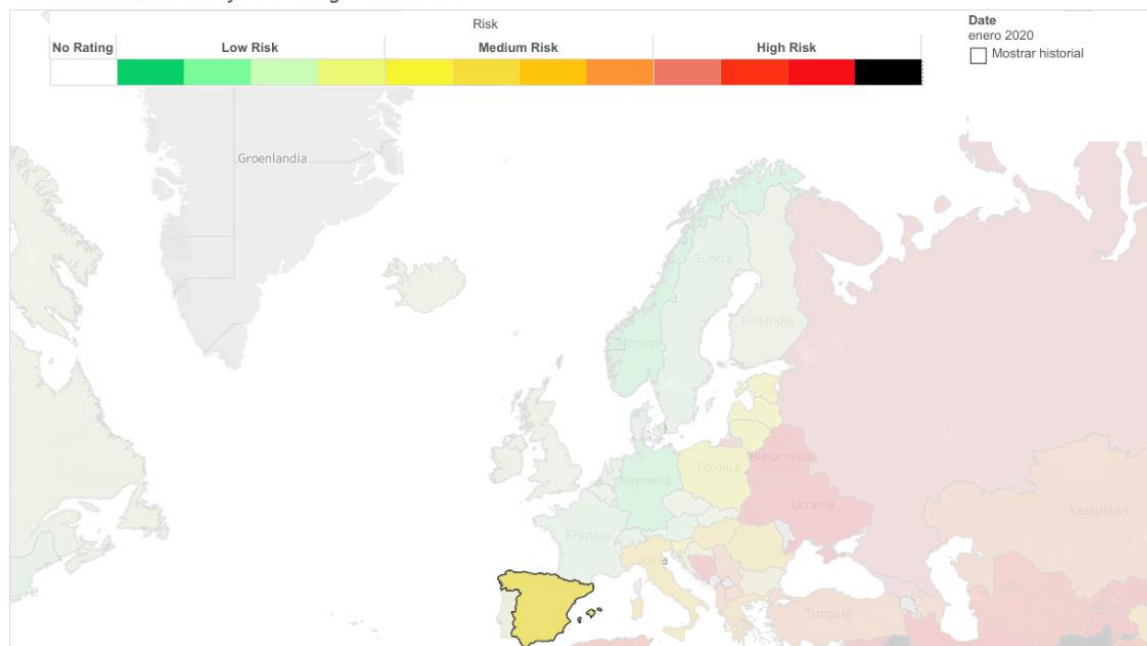


Figure 8.1: Dun & Bradstreet country risk analysis (January 2020).
<https://www.riskmaps.aon.co.uk/PoliticalRisk/Map>

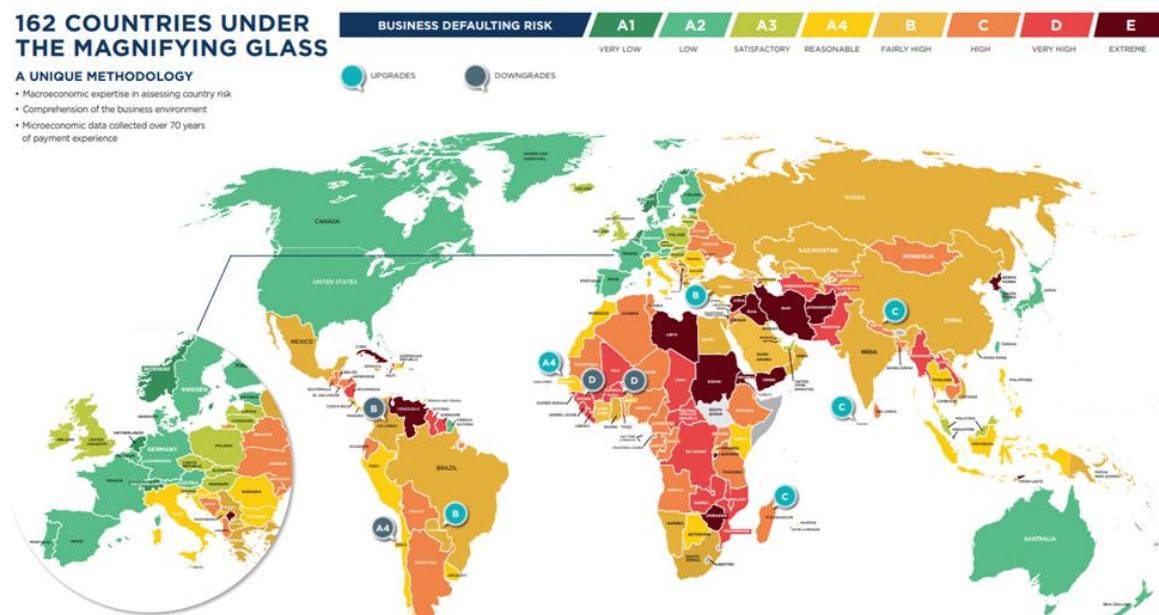


Figure 8.2: Country risk analyzed by COFACE (February 2020).



Figure 8.3: World Bank, Doing Business. Analysis Ease of Doing Business in Spain: <http://espanol.doingbusiness.org/data/exploreeconomies/spain>

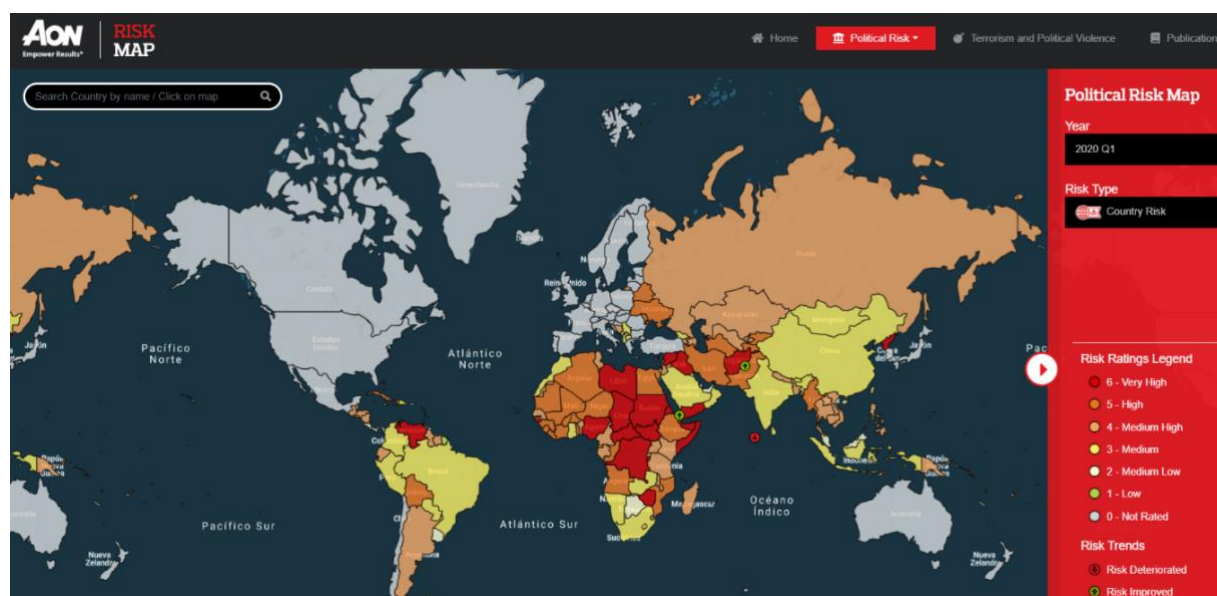


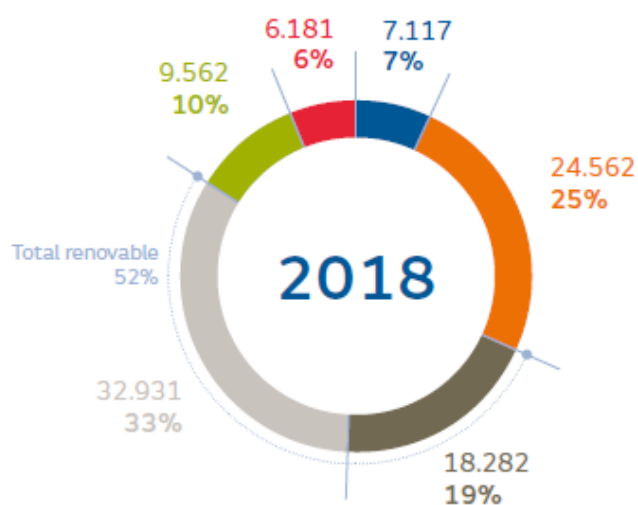
Figure 8.4: AON interactive country risk map. Available on its website.

Potencia instalada peninsular por tecnología 2018

- Nuclear
- Ciclos Combinados
- Hidro
- Renovable
- Carbón
- Cogeneración y residuos

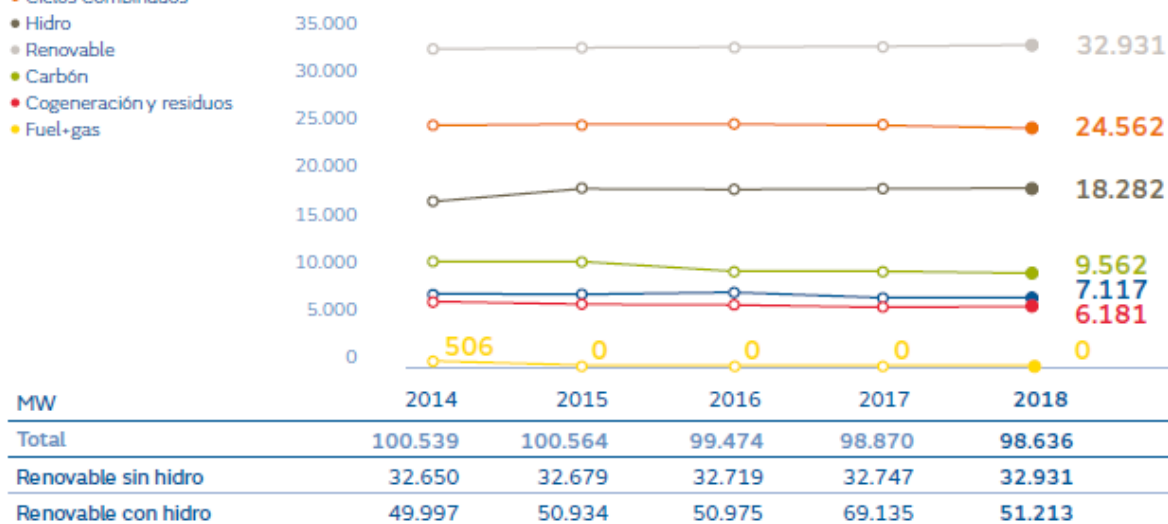
Total
98.636 MW

Hidro: Incluye gran hidráulica y bombeo.
Renovables: minihidráulica, eólica, solar fotovoltaica, solar térmica, biogás, biomasa, hidráulica marina, geotérmica y residuos renovables; no incluye hidro.
Fuente: REE.



Evolución

- Nuclear
- Ciclos Combinados
- Hidro
- Renovable
- Carbón
- Cogeneración y residuos
- Fuel+gas

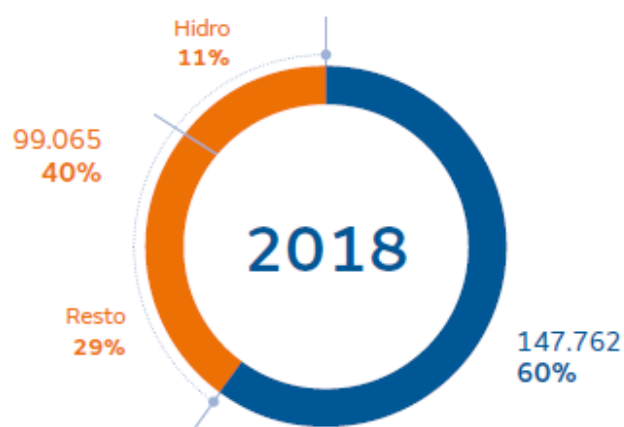


Hidro: Incluye gran hidráulica y bombeo.
Renovables sin hidro: minihidráulica, eólica, solar fotovoltaica, solar térmica, biogás, biomasa, hidráulica marina, geotérmica y residuos renovables.
Fuente: REE.

Figure 8.5: Peninsular power installed by technology in 2018 and its evolution since 2014.
Source: Naturgy Foundation [51]

Producción renovable y no renovable 2018

- Renovables*
- No renovable



Total

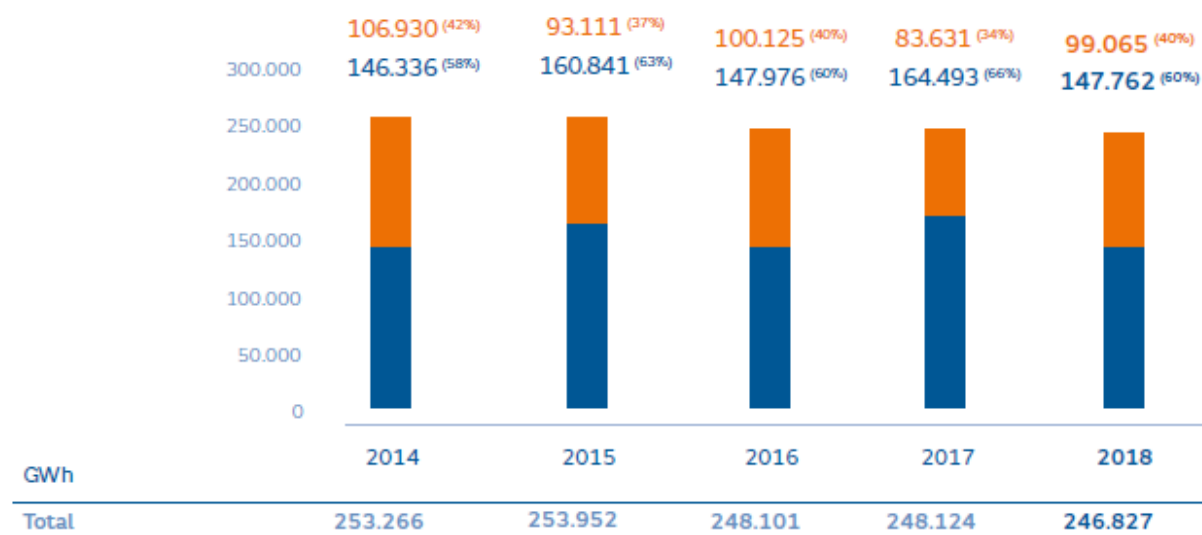
246.827 GWh

*Renovable corresponde a Hidráulica (sin considerar bombeo), renovables con Retribución específica (Eólica, Fotovoltaica, termosolar, minihidráulica, biomasa y otros) y renovables sin retribución específica.

Fuente: REE.

Evolución

- Renovables*
- No renovable

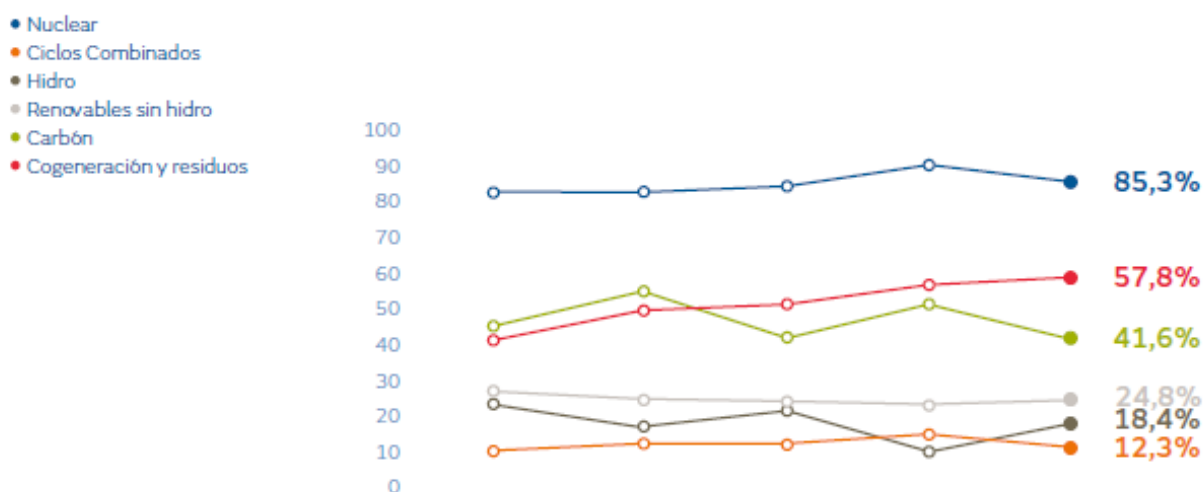


*Renovable corresponde a Hidráulica (sin considerar bombeo), renovables con Retribución específica (Eólica, Fotovoltaica, termosolar, minihidráulica, biomasa y otros) y renovables sin retribución específica.

Fuente: REE.

Figure 8.6: Renewable and non-renewable production in 2018 and its evolution since 2014.
Source: Naturgy Foundation [51]

Coeficiente de utilización de capacidad peninsular por tecnología



Porcentaje	2014	2015	2016	2017	2018
Total peninsular	28,8 %	28,8%	28,4%	28,6%	28,6%
Nuclear	82,6%	82,4%	84,2%	89,1%	85,3%
CCGT	9,7%	11,5%	11,6%	15,4%	12,3%
Hidro	23,4%	16,1%	20,8%	10,5%	18,4%
Carbón	44,8%	55,4%	41,8%	50,8%	41,6%
Renovables sin hidro	26,1%	24,5%	24,3%	24,1%	24,8%
Cogeneración y residuos	42%	47,3%	50,1%	55,8%	57,8%

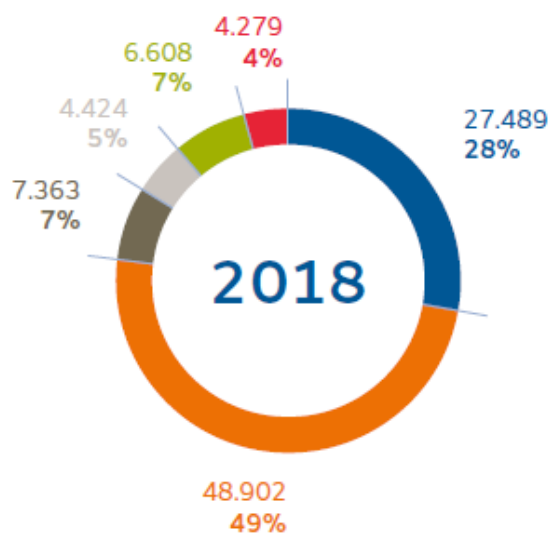
Coeficiente de utilización de capacidad: cociente entre la producción real y la máxima posible.

Fuente: Elaboración propia a partir de datos de REE.

Figure 8.7: Coefficient of utilization of pensinuslar capacity by technology and its evolution from 2014 to 2018. Source: Naturgy Foundation [51]

Producción renovable por tecnología 2018

- Hidro
- Eólica
- Solar FV
- Solar Térmica
- Minihidráulica
- Resto renovables



Total

99.065 GWh

Hidro sin considerar bombeo.

Fuente: REE.

Evolución

- Hidro
- Eólica
- Solar FV
- Solar Térmica
- Minihidráulica
- Resto renovables

Hidro sin considerar bombeo.

Fuente: REE.

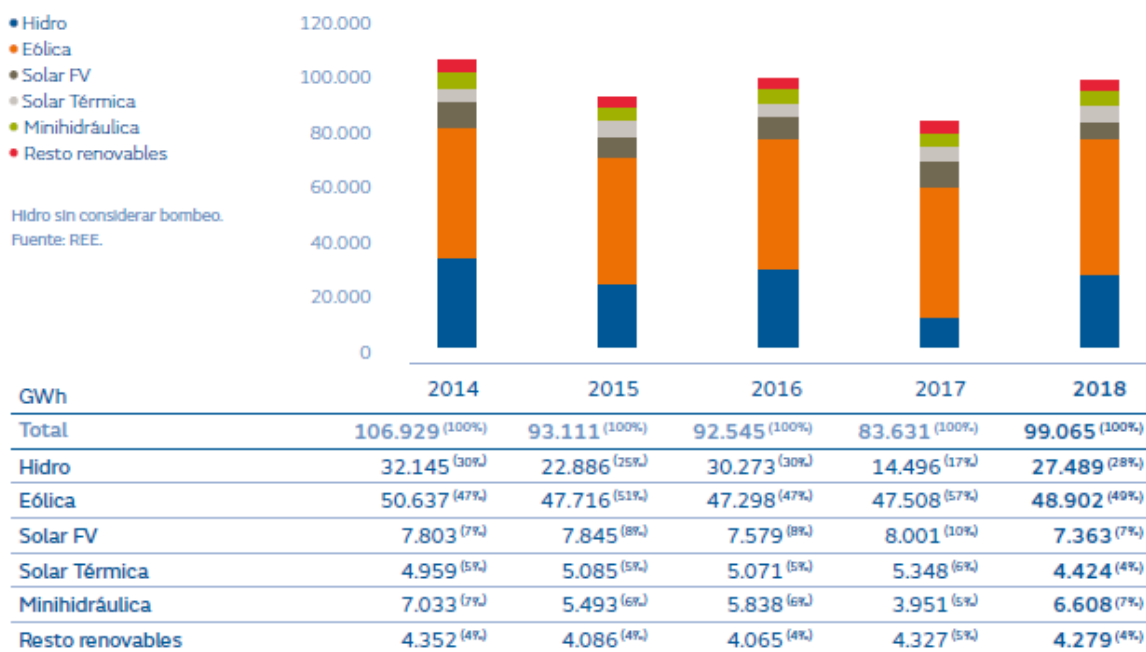
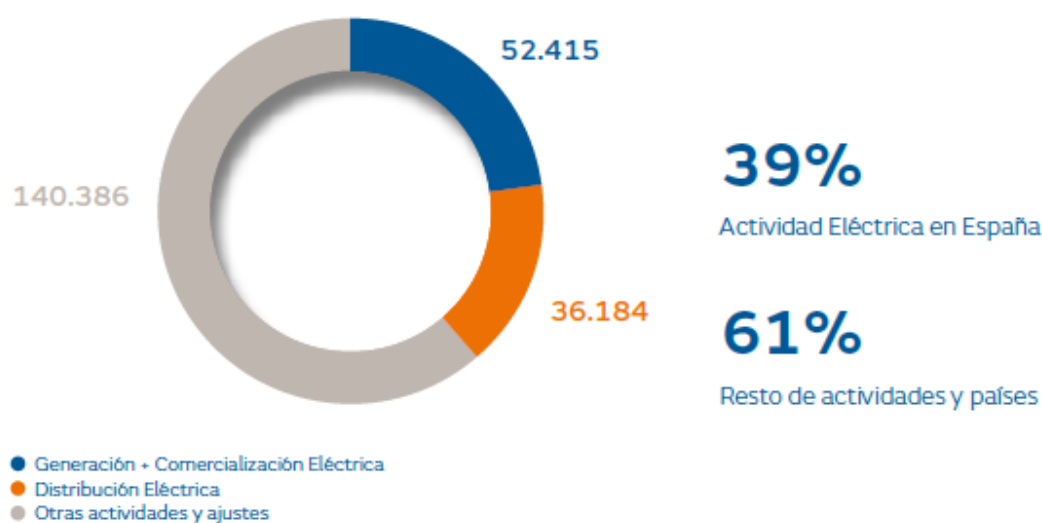


Figure 8.8: Renewable production by technology (2018) and its evolution since 2014.
Source: Naturgy Foundation [51]

Balance de situación

(Millones de euros)

Activo	Generación + Comercialización		Distribución Eléctrica	Pasivo	Generación + Comercialización		Distribución Eléctrica
	Eléctrica				Eléctrica		
Activo intangible y otros	5.175	2.300		Patrimonio Neto	16.906	10.052	
Activo material	27.781	29.815		Deuda financiera	13.025	10.791	
Otros activos	16.099	4.066		Otros pasivos	22.484	15.341	
Efectivo y activos líquidos	3.360	3		Pasivo total	52.415	36.184	
Activo total	52.415	36.184					



Cuenta de pérdidas y ganancias

(Millones de euros)

	Generación + Comercialización Eléctrica	Distribución Eléctrica
Cifra de Negocios	34.802	6.159
(-) Aprovisionamientos	-26.482	-217
Margen Bruto	8.320	5.942
(-) Gastos de personal	-1.115	-491
(-) Gastos externos	-2.256	-684
(-) Tributos	-1.189	-108
EBITDA	3.760	4.659
(-) Corrección deudores	-73	-6
(-) Amortizaciones y deterioro	-6.217	-1.498
EBIT	-2.530	3.155
(+-) Resultado financiero	-413	-301
(+-) Resultado sociedades	75	7
(+-) Resultado venta activos	11	4
Resultado antes de impuestos	-2.857	2.865
(-) Impuesto Sociedades	693	-648
Resultado del ejercicio	-2.164	2.217

Figure 8.9: Balance sheet and average profit and loss account of the Spanish electricity sector (2018). Source: Naturgy Foundation and Deloitte.

Activo	Nota	31.12.19	31.12.18 reexpresado *
Fondo de comercio	5	137.945	138.564
Otros activos intangibles	5	106.280	111.510
Inmovilizado material	6	75.347	166.597
Inversiones contabilizadas aplicando el método de la participación	7	6.905	6.992
Activos financieros	8	76.306	99.355
Activos por impuestos diferidos	18	7.390	5.461
Total activos no corrientes		410.173	528.479
Existencias		1.812	4.513
Deudores comerciales y otras cuentas a cobrar	10	148.336	136.076
Activos por impuestos corrientes		666	1.432
Activos financieros	8	36.241	44.460
Periodificaciones y otros activos corrientes	10	26.241	19.626
Efectivo y otros activos líquidos equivalentes	11	150.784	98.313
Total activos corrientes		364.080	304.420
Total activo		774.253	832.899
Patrimonio Neto y Pasivo	Nota	31.12.19	31.12.18 reexpresado *
Capital		44.029	308.204
Prima de emisión		420.316	420.316
Reservas		(364.322)	(637.245)
Resultado del ejercicio atribuido a la sociedad dominante		25.417	8.412
Diferencias de conversión		1.682	1.717
Otro resultado global		(4.901)	4.904
Patrimonio atribuido a la sociedad dominante		122.221	106.308
Participaciones no dominantes		33.493	33.258
Total patrimonio neto	12	155.714	139.566
Provisiones	13	1.211	2.670
Pasivos financieros por emisión de obligaciones y otros valores negociables	14	143.184	96.938
Pasivos financieros con entidades de crédito	14	46.554	129.873
Pasivos por arrendamientos	2 y 14	8.267	-
Instrumentos financieros derivados	9	4.009	11.373
Otros pasivos financieros	14	19.605	34.409
Subvenciones	15	5.675	5.869
Otros pasivos no corrientes		4.636	26.492
Pasivo por impuestos diferidos	18	17.637	29.755
Total pasivos no corrientes		250.778	337.379
Pasivos vinculados con activos mantenidos para la venta		-	-
Provisiones		1.270	949
Pasivos financieros por emisión de obligaciones y otros valores negociables	14	67.534	67.985
Pasivos financieros con entidades de crédito	14	71.121	103.713
Pasivos por arrendamientos	2 y 14	1.362	-
Instrumentos financieros derivados	9	4.060	462
Otros pasivos financieros	14	28.934	16.495
Acreedores comerciales y otras cuentas a pagar	16	93.820	93.313
Pasivos por impuestos corrientes		2.267	1.994
Otros pasivos corrientes	16	97.393	71.043
Total pasivos corrientes		367.761	355.954
Total patrimonio neto y pasivo		774.253	832.899

La memoria adjunta forma parte integrante de las cuentas anuales consolidadas

Figure 8.10: Consolidated balance sheet Grupo Audax Renovables, S.A. Data for 2018 and 2019. Figures in thousands of euros. Source: Official website.
