

## METHODS

## A case study of Sunier, a prototypical company in the evolving green economy

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In this work, we have carried out an economic-financial case study of Sunier, a leading company in the renewable energy sector in Spain and one of the European companies that has bet mostly on implementing a truly Green Economy. Specifically, throughout the period of 2016–2020, the financial statements of Sunier Energy and its subsidiaries have been analyzed to determine the economic situation of the group and its position within the entire sector. Subsequently, an analysis of the company's solvency and profitability has been implemented. This paper demonstrates how companies located in the renewable energy sector, more specifically, in the photovoltaic subsector, are viable in the long term from two essential points of view, namely, their ability to generate profits for the shareholders and to guarantee their long-term survival given the high solvency ratios that define "Sunier," a flagship company in the solar energy sector within the context of the Spanish financial markets.

**Keywords:** photovoltaic solar energy, renewable energies, case study, Spain

### 1. Introduction

Goal of the United Nations 2030 Agenda is to ensure access to affordable, secure, sustainable, and modern energy. Indeed, in recent years, concern for the environment has been growing, which has led to the search for non-polluting energies that are a real alternative to traditional energy sources such as oil, natural gas, or coal, as well as those obtained from nuclear power plants. In this sense, wind and solar energies have become the center of research and the flagship of a world that respects the planet.

Spain is a country that gave up building new nuclear power plants years ago and even closed the few that were operating in its territory. Thus, Spain depends mainly on energy produced outside its borders, importing most of the energy it consumes.

In contrast, it is a country with the longest hours of sunshine in Europe, especially in the south of the country. This has led to research on solar energy, such as the experimental plant located in the Tabernas desert, the only desert in Europe. Similarly, the establishment of companies

dedicated to the production of energy from the sun through the installation of solar panels is growing significantly. It is in this context that the company that is the subject of this case study is located.

One of the arguments against the installation of photovoltaic solar panels and solar plants is their high cost, which results in low profitability. Therefore, it is interesting to perform an economic-financial analysis of the Sunier case study and its subsidiaries (hereinafter, "Sunier"), for which the time horizon of 2016–2020 has been considered. Note that the real name of the company has been changed in this article to respect the Spanish data protection law. This article has been set up from a methodological point of view using the conceptual framework related to case studies employed by Yin (1, 2). In this case, the backbone element has been the use of the most relevant accounting magnitudes of the analyzed company, that is, those accounting data most closely related to the analysis of profitability and solvency in the long term. This company is included in subsector 1.4 of the Madrid Stock Exchange (Renewable Energies), occupying a leading position in terms of market capitalization among

other companies such as Audax, Acciona, Grenergy, Grupo Ecoener, and Soltec. However, recent geopolitical events such as the Ukrainian war have caused a sudden drop in the value of these companies since the beginning of January 2022.

In essence, this firm is part of the movement for the sake of Corporate Social Responsibility led by multiple Spanish companies in which the shareholder invests in contributing to environmental sustainability (3). At the national level, the energy sector that shows the greatest similarity with the Spanish sector is the Italian one. However, while Spain opted for a virtual privatization of this sector, in Italy, public interest is much higher, being represented by Ente Nazionale per l'Energia Elettrica (ENEL), in which the Italian state maintains a shareholding of around 24%. In Spain, due to these circumstances, part of a strategic sector such as the electricity sector is owned by foreign shareholders, given the strong presence of ENEL in ENDESA, one of the main electricity companies in Spain, one of whose majority shareholders is precisely ENEL.

Given the relatively novel nature of renewable energies, the main lines of research have opted for comparative analysis of their regulatory systems (4–6), their degree of efficiency in the use of traditional energy sources (4, 7–9), their economic impact (7, 10, 11), their impact on local economies (12, 13), or their ecological (14) or landscaping repercussions (13).

The activity developed by this company is classified with code 3,519 within the National Classification of Economic Activities (NACE). In order to contextualize the company and its activity, it is necessary to analyse the renewable energy sector in Spain, where the company mainly operates.

The rest of this article is as follows. Section “2. Photovoltaic solar energy sector in Spain” describes the photovoltaic solar energy sector in Spain, and an analysis of Porter’s five competitive forces for the sector is performed. Section “3. Analysis of the company Sunier and dependent companies” contains an analysis of Sunier and its subsidiaries, describing its mission, values, and environmental commitments, complemented by a Strengths, Weaknesses, Strengths, and Threats (SWOT) evaluation. Section “4. Analysis of the balance sheet and income statement” studies the company’s balance sheet and income statement. Section “5. Solvency and risk analysis of Sunier and its subsidiaries” studies the profitability of the company and its subsidiaries. Section “5. Solvency and risk analysis of Sunier and its subsidiaries” implements a study of risk and solvency. Finally, Section “6. Conclusion” presents the conclusions of the case study. The primary objective of our work is to demonstrate how, taking “Sunier” as a reference, companies in the renewable energy sector can be completely self-sufficient from an economic-financial point of view. Thus, in the same way that they are able to generate large profits for their partners, their operations allow them to be solvent in the long term, guaranteeing their self-sustainable operation and ensuring the production of clean energy (of photovoltaic origin).

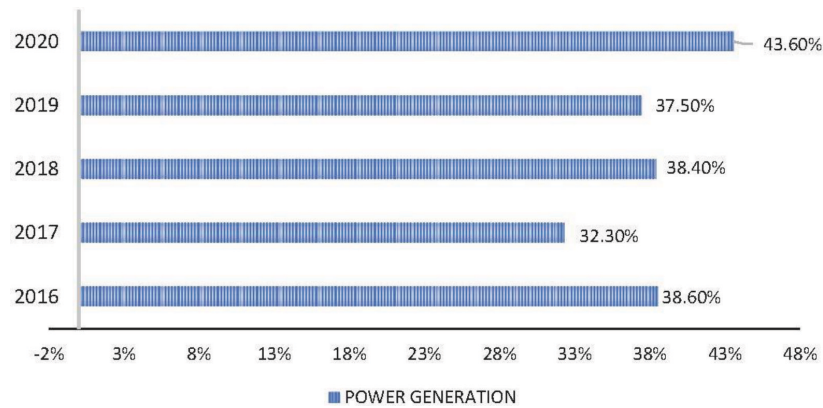
## 2. Photovoltaic solar energy sector in Spain

“Renewable energies are clean and almost inexhaustible resources provided by nature” (15). For example, photovoltaic solar energy is the subject of this work, since it is the sector in which the company Sunier is located. In 1970, renewable energies were considered an alternative to traditional energy sources, as these are finite and there may come a time when they can no longer supply the demand. In addition, it should be noted that renewable energy sources have a lower environmental impact and generate welfare for society. However, nowadays, they are no longer an alternative but a reality, as shown in **Figure 1**.

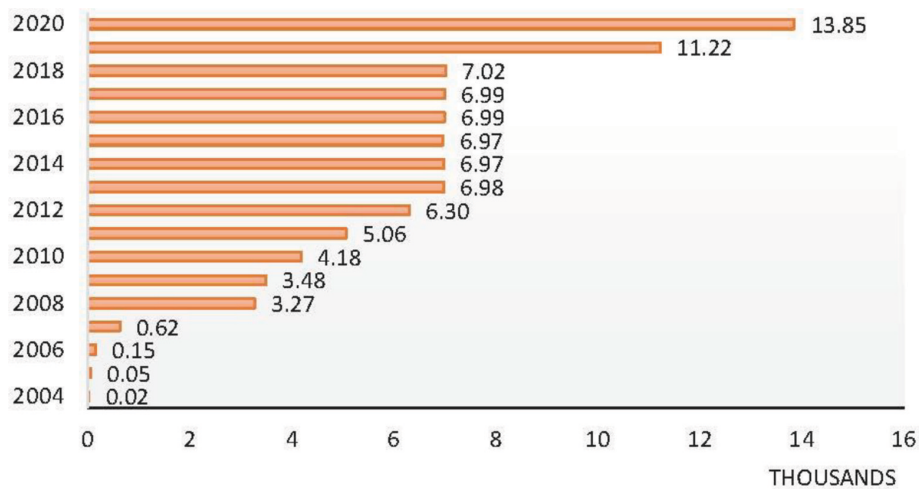
“Photovoltaic solar energy is a natural, renewable, and sustainable energy source. It is the direct transformation of solar radiation into electricity through the so-called photovoltaic panels” (15). In order to analyse this sector, a series of data will be taken into account: turnover, the sector’s contribution to Spanish GDP, and the number of workers employed in the sector. In 2019, the photovoltaic solar energy sector in Spain experienced great growth, positioning itself as a leader at the European level and sixth worldwide. Its total turnover amounts to 3,220 million euros and its contribution to the Spanish GDP is 0.26%, according to the data published by UNEF (17). In terms of the number of workers employed, this sector has 29,300 people employed in 2020, according to the data from the International Renewable Energy Agency. **Figure 2** exhibits the evolution of the photovoltaic solar energy sector, highlighting the great growth experienced in recent years (2019–2020).

“The strategic analysis of Porter’s five forces serves to develop a business strategy based on the characteristics of the sector and its degree of competition. To do this, it is necessary to study the five forces that mark the success or failure of a particular sector” (19).

1. Threat of entry of new competitors. This is a very attractive sector due to the growing concern for the environment, but the barriers to entry into the market are high. Among them, we can highlight high initial investment, cost disadvantage, positioning of current competitors, and government policies. The main factor limiting the entry of new competitors into the sector is the high initial investment required for the plant, in addition to the long period of time needed to pay it off. Companies that are already in the market and have amortized this investment will be able to compete in the market with more competitive prices. Another factor to highlight is that the installation of the plant requires a large space and involves a great visual impact, so it is difficult to find a suitable place in which its installation is allowed. In addition, it is a site that has a large number of solar hours per day to allow the generation of this type of energy. It is



**FIGURE 1** | Renewable energy in the Spanish electricity system. Source: Prepared by the authors based on data obtained from IRENA (16).



**FIGURE 2** | Photovoltaic solar power is installed in Spain in thousands of watts (MW). Source: Own elaboration based on Statista (18).

also important to take into account the high level of government regulation in this sector, which can be a barrier to entry.

2. Bargaining power of suppliers. The main suppliers are those who supply the materials necessary for the installation of the photovoltaic panels, such as companies specialized in the production of batteries and cells, companies producing cables, companies in charge of manufacturing the panels, and, finally, the company in charge of carrying out the solar installation. The bargaining power of suppliers is low, as there are a large number of companies in the market, which supply similar products and services. It should be noted that there are companies in the market that manufacture their own photovoltaic panels and install them, so it would not be necessary to contact those suppliers mentioned above.
3. Bargaining power of buyers. The bargaining power of buyers is low, as the number of companies dedicated to the generation of photovoltaic solar energy is low and is dominated by a few companies, such as Abengoa Solar, Atersa, and Sunier Energía y Medioambiente.
4. Threat of entry of substitute products. Solar photovoltaic energy is a natural, renewable, and sustainable energy source. Among the different renewable or green energies are biomass, hydro, solar thermal, wind, geothermal, tidal, and green hydrogen, which could be substitute products for solar photovoltaic power generation, as they meet the same needs that customers demand.
5. Rivalry among competitors. Although there are only a small number of companies, competition is high. This is due to the fact that the sector is in full growth and companies compete with each other by increasing advertising and reducing prices, with the aim of gaining the largest market share.

### 3. Analysis of the company Sunier and dependent companies

Sunier is a Spanish company dedicated, together with its subsidiaries, to the renewable energy sector, more specifically to the generation of photovoltaic solar energy. It was

founded in 2002 in Madrid. Initially, it was dedicated to the manufacture of photovoltaic panels, until 2014 when the company began to produce energy and develop photovoltaic power generation plants. In addition, it is the parent company of a group formed by 98 companies, owned directly or indirectly 100% by the company. In 2007, Sunier was the first Spanish solar company to be listed on the Madrid Stock Exchange, and in 2020, it entered the Ibx 35 index. It is currently a leading company in the development and generation of photovoltaic solar energy in southern Europe. It also manages and operates photovoltaic plants in Spain, Portugal, Italy, Greece, and Uruguay. As this article shows, the relative position of Sunier in the context of the energy market is quite robust, given that the long-term analysis of its main accounting figures reveals a marked relative strength of this company in terms of profit creation and solvency, this being a crucial element for a company located in such a volatile environment as that of renewables. However, not only in the case of “Sunier” but also for the sector as a whole, it can be seen how the last few years have closed with falls in the price of “Sunier” and its main rivals, such as Siemens-Gamesa. However, important investment funds such as BlackRock are closely following Sunier’s movements to become part of its capital, which indicates the great growth potential of this Spanish renewable energy company (20).

This firm has a code of ethics, with the aim of establishing the basic principles to which the behavior of the companies that make up Sunier and of all its employees and managers must adhere. The following three elements are developed in it:

1. **Mission.** To promote the development of the use of sunlight as a renewable energy source, by transforming knowledge and experience into innovative solutions that contribute to the welfare of humanity, promoting economic development, and reducing environmental impact.
2. **Vision.** A leading international company, recognized by its stakeholders as a guarantee of quality, experience, profitability, innovation, flexibility, and transparency, through continuous analysis and understanding of the renewable energy sector, in order to offer value-added solutions that exceed the expectations of its customers.
3. **Values.** The company’s values are:
  - **Leadership.** Sunier is a leading company in its sector, a benchmark organization, both in terms of capabilities and in terms of solvency, quality, technology, sustainable growth, ideas, and people.
  - **Honesty.** Sunier is a transparent company, with clients and shareholders who trust us, because what we do always corresponds to what we say, because we fulfill our commitments.

- **Innovation.** Sunier is a company where creativity and intelligence are applied to the constant search for new integral solutions that adapt to a global and changing environment.
- **Excellence.** Sunier is a company where good is never enough and value-added solutions have to exceed the expectations of our customers, to be the driving force of the organization.
- **Teamwork.** Sunier is a company where each person has a unique talent and we have to be able to take advantage of this diversity to create synergies in our daily work.

With the aim of caring for the environment and contributing to the transition toward a sustainable energy model, Sunier has the following social commitments, developed in its environmental policy:

- Implementation of a management system in the company to facilitate monitoring and evaluation of the performance of the activities carried out, as well as decision-making in this area.
- Promote the use of renewable energy, and specifically solar photovoltaic technology, as essential elements in the decarbonization of the current energy model and which minimize the impact of the adverse effects of climate change on the planet.
- Respect ecosystems, biodiversity, and cultural heritage in the natural environments in which the company’s facilities are located.
- Minimize the environmental impact of the company’s activities, reducing emissions around 14% by 2021.
- Contribute to the circular economy by optimizing the use of resources.
- Promote the ultimate mutual and social benefit in the relationship with stakeholders to protect the environment; promote and extend the company’s environmental commitment, share experiences, and create synergies.

### 3.1. SWOT analysis

“The main objective of SWOT analysis is to help the organization to find its critical strategic factors, so that once identified, to use them and support on them organizational changes: consolidating strengths, minimizing weaknesses, taking advantage of opportunities, and eliminating or reducing threats” (19).

#### 3.1.1. Strengths and weaknesses

Strengths and weaknesses are found within the internal analysis of the company.

*Strengths* are capabilities, internal resources, positions achieved, and, consequently, competitive advantages that should and can be used to exploit opportunities.

- The company owns photovoltaic plants in various geographical areas with high levels of solar radiation, which means higher returns.
- It invests heavily in R + D + i, which allows it to be up to date within the sector and to face the competition.
- Solar energy is an infinite natural resource, so you will not have supply problems with the most important productive resource within your company.

*Weaknesses* are aspects that limit or reduce the organization's capacity for development, constitute a threat to the organization, and must, therefore, be controlled and overcome.

- Presence of exit barriers, due to the large investments associated with the construction and installation of photo-voltaic plants.
- In order to implant this type of plant, large spaces are required and, in addition, they imply a great visual impact on the environment that society is not willing to accept.

### 3.1.2. Opportunities and threats

The opportunities and threats are found within the external analysis of the company.

*Opportunities* are those circumstances or situations in the environment that may represent a competitive advantage for the organization or represent a possibility to improve its profitability or increase its turnover.

- The photovoltaic solar energy sector is booming worldwide, and the growth of this sector benefits the companies within it.
- The cost of the elements necessary for the construction and installation of the solar panels has been reduced, due to the technological advances that have taken place in recent years in the solar energy sector.

*Threats.* They are any force in the environment that can prevent the implementation of a strategy, reduce its effectiveness, increase the risks of this or the resources required for its implementation, or reduce the expected income or profitability.

- Increased competition due to the growing demand for renewable energies, more specifically solar energy.
- Numerous changes in the legislative framework governing companies in this sector.
- Natural disasters, since the installation of photovoltaic panels, are carried out in the open air.

## 4. Analysis of the balance sheet and income statement

### 4.1. Analysis of the *pro forma* balance sheet

“The *pro forma* balance sheet is a balance sheet that reclassifies and groups the different assets, liabilities, and net worth in patrimonial masses, so that they serve the purposes of study and analysis of the company” (19).

#### 4.1.1. Analysis of the economic structure

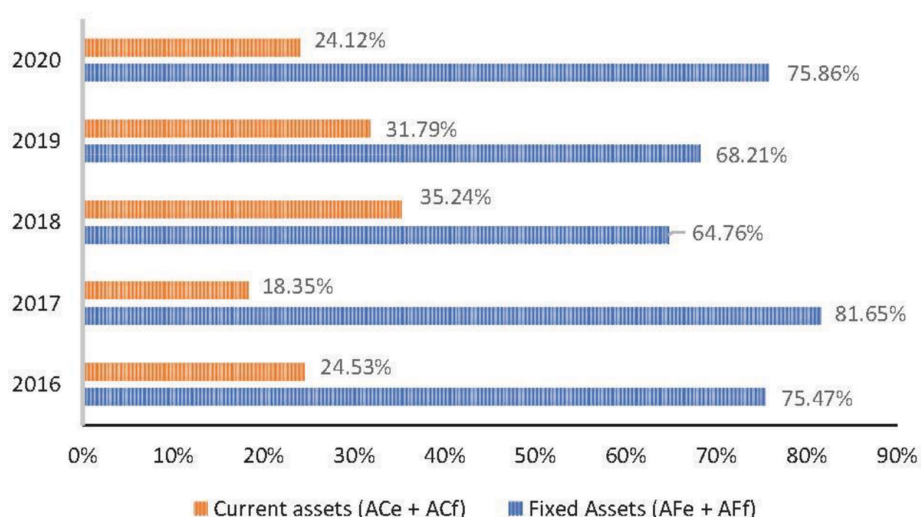
The economic structure of the company is made up of fixed assets and current assets and elements to be analyzed below. In the case of the company Sunier and its subsidiaries, investments in fixed assets predominate throughout the period under analysis (2016–2020). In addition, **Figure 3** shows that both, fixed assets and current assets, have remained constant and have no significant growth during this period.

**4.1.1.1. Fixed assets.** This item groups together those assets that will remain in the company for more than one financial year, as they represent relevant investments for the company, conditioning its long-term future. On the one hand, we find the Economic Fixed Assets, assets related to the main activity of the company and of an economic nature. As shown in **Figure 4**, in relation to tangible fixed assets, there is not a great difference between the periods of 2016 and 2018, as the group has been moderately increasing its investment in economic fixed assets. A significant increase in 2018 with 253,914,000 euros stands out, compared to 2019 with 408,933,000 euros; this is due to the increase in investments in tangible fixed assets, more specifically in technical installations and machinery (21).

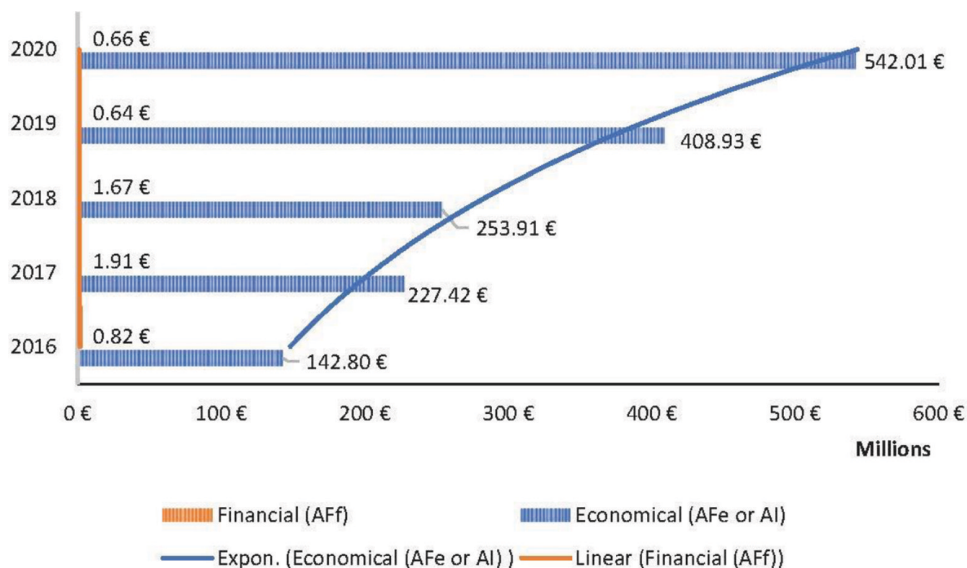
The group reaches its maximum in 2020 with a total of 542,011,000 euros, due to its increase compared to 2019 for the same reason as that experienced in 2019 compared to 2018.

In relation to intangible fixed assets, the increases and decreases that occurred in the years studied are due to variations in the item “Shareholdings in companies accounted for using the equity method” and the item “Surface rights.”

In 2017, there was a large decrease compared to 2016, due to the decrease in the item “Investments in companies accounted for using the equity method.” The cause of this reduction lies in two factors: on the one hand, the 100% acquisition of the company Serre UTA, previously 50% owned, was carried out, eliminating the stake in the same, as it became fully consolidated; on the other hand, the sale of the companies Solar One and Energía, both also indirectly 50% owned, was carried out, removing the value of the stake



**FIGURE 3** | Evolution of the economic structure of Sunier and its subsidiaries. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).



**FIGURE 4** | Evolution of the composition of economic and financial fixed assets. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

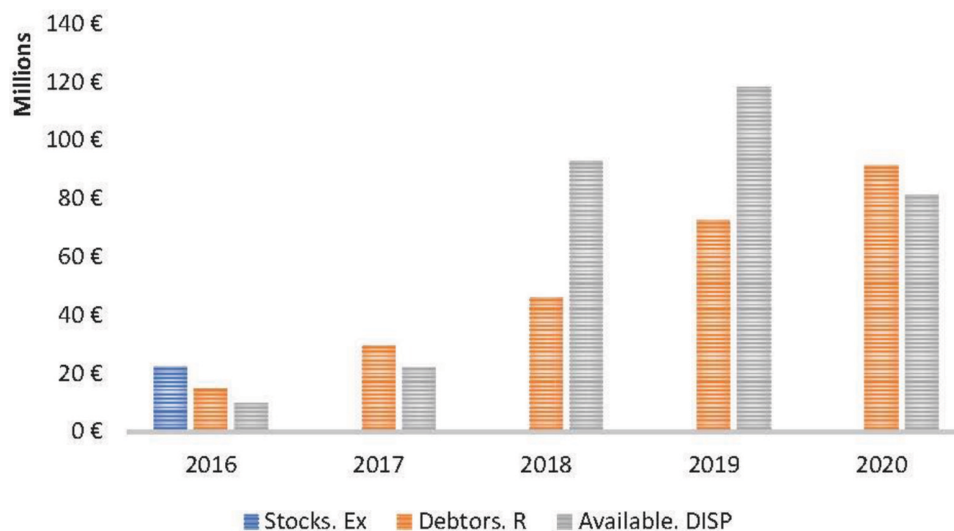
in both companies from this item (Note 4, Notes to the 2017 Financial Statements).

In 2018, there is an increase in intangible assets, due to the item “Surface rights,” which continues to increase considerably in 2019 and 2020. This increase is due to the company's own growth, as these are rights of use for the land on which the construction of the photovoltaic farms is carried out (21). In contrast, there are Financial Fixed Assets, assets not assigned to the main activity of the company, which refer to those fixed assets that constitute purely financial investments with the objective of obtaining an income. Similarly, in **Figure 4**, it can be observed that values show differences between the different years (2016–2020). A large increase stands out: in 2017, its value was 188,300 euros

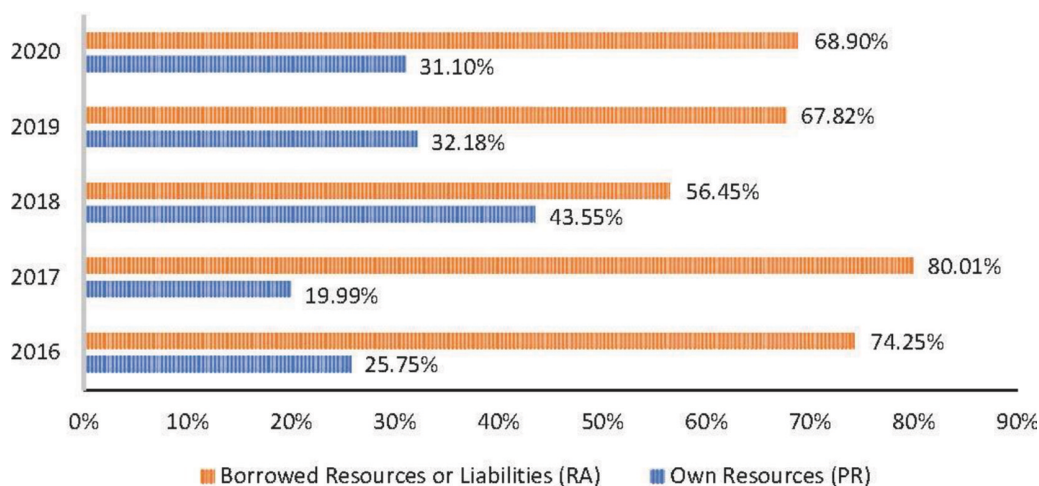
compared to 796,000 euros in 2016. This increase is due to the fact that during 2017, long-term finances in the amount of 1,100,000 euros have been set up in relation to the photovoltaic projects that the group was developing in Uruguay (21).

In conclusion, investment in fixed assets is very important for the development of the business activity. In addition, in order to continue to grow and keep growing over time, it is very important to be updated with new technologies, so in 2019 and 2020, Sunier has invested in computer applications, with the aim of being able to face the existing competition within the same sector.

**4.1.1.2. Current assets.** This item groups together those assets controlled by the company that are expected to



**FIGURE 5** | Evolution of the composition of Economic Current Assets. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).



**FIGURE 6** | Evolution of the financial structure of Sunier and its subsidiaries. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

generate economic benefits through their use in the economic or financial activity during a financial year or a period of less than 12 months.

In relation to the item of inventories, in 2016, it has an amount of 22,284,000 = C, which in 2017 becomes 0, due to the fact that these inventories were transferred to fixed assets. They mainly corresponded to materials necessary for the manufacture of photovoltaic modules required for the project that the company was developing in Uruguay (21). The rest of the years (2018, 2019, and 2020) continue to be 0.

The Accounts Receivable item, the result of the sum of Trade Receivables and Other Current Assets, does not show any significant growth from 1 year to the next. It has been growing throughout the years studied (2016–2020) but has moderate growth, reaching its maximum in 2020. With regard to the “Cash” item of this company, **Figure 5** reflects a significant increase in 2017 with 21,972,000 = C

compared to 2018 with 93,009,000 euros, as this item includes the liquidity obtained by the company following the capital increase operation carried out on 13 July 2018 (Note 6, Notes to the 2018 Annual Accounts).

It reaches its maximum in 2019, as a result of the optimization of the cash flows linked to the financing operations carried out throughout the year (Note 8, Notes to the 2019 Financial Statements). In 2020, there is a decrease due to the payment of a debt with third-party suppliers contracted by the Group during the development of new wind farms, which matured in 2020, and the repayment of promissory notes issued in 2019 (Notes to the 2020 Financial Statements). Finally, it should be noted that in the evolution of Current Assets, the Financial Current Assets have not been taken into account, since in the whole period studied (2016–2020), its value is 0; therefore, its analysis does not make sense. The group only has the item “Short-term investments

in group companies and associates,” which is not included in the Financial Current Assets.

#### 4.1.2. Financial structure analysis

“The financial structure refers to the instruments used by the company to finance itself either with its own resources or net worth (financing provided by the owners) or external resources or liabilities (financing corresponding to people outside the organization)” (19). In relation to shareholders’ equity, there was a significant increase in 2018, this also being the year in which this item reached its maximum, due to a capital increase carried out by the company in that year (21).

It should be noted that Sunier has been financed during the period under study (2019–2020) mainly with external resources, especially those of long-term contractual duration. The values of this item remain high throughout the period studied, but reach their maximum in 2017. Therefore, as borrowed funds account for a much higher percentage within the company than equity, this could lead to insolvency problems on the part of the company (see Figure 6).

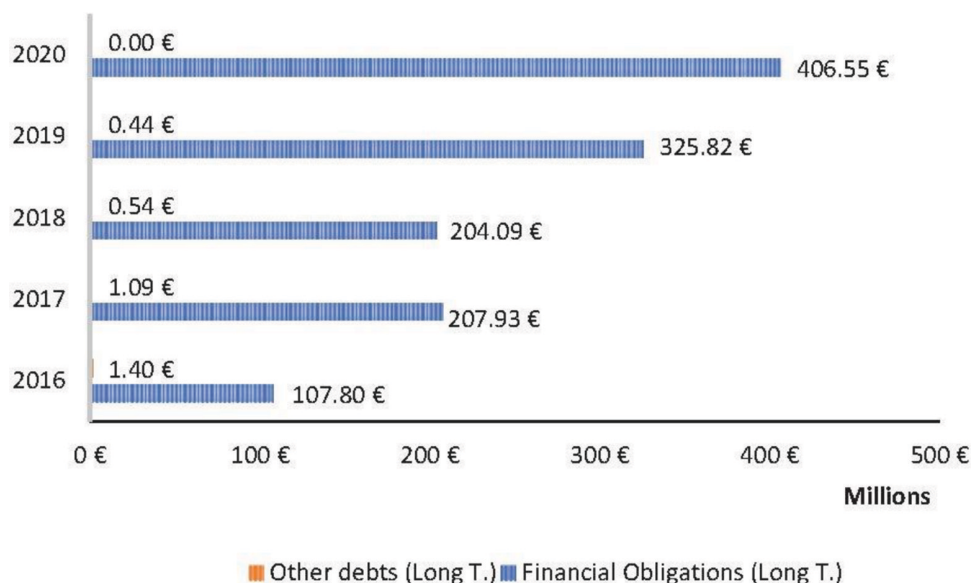
##### 4.1.2.1. Equity

Within equity, the most striking item is “Retained earnings.” These are the results of previous years obtained by the company that are reinvested in the company for the purpose of expansion or investment, since in the particular case of Sunier, the results obtained from previous years in the period studied (2016–2020) are negative, so it is not possible to allocate retained earnings. To offset these losses, the results of the year for each period were used, as well as voluntary reserves, which were gradually increased during the period under study. The results for the year for the periods (2016–2020) were positive, but not sufficient to offset the losses that the group had been carrying forward from previous years.

**4.1.2.2. Long-term borrowings.** Long-term borrowed funds are intended to collect debts or obligations maturing more than 12 months from the company’s balance sheet date. As can be observed in Figure 7, the item “Long-term financial obligations” is much larger than the item “Other long-term debts,” with long-term borrowed funds being mainly made up of the former. In addition, it should be noted that the company is mainly financed with long-term borrowed funds. In relation to long-term financial obligations, a growth is observed throughout the years studied (2016–2020), reaching its maximum in 2020 with an amount of 406,546,000 euros.

The increase has been mainly due to the item “Bonds and other marketable securities,” highlighting the most significant increase in 2017 with 132,499,000 euros compared to 2016 with 41,859,000 euros, due to the issue by the company of a bond in the amount of 45,300,000 euros (21). In addition, it is important to note the debts with credit institutions to finance the projects developed by the group in this period and the debts with creditors for the financial leasing of land where the company’s photovoltaic parks are built (21). With regard to the item “Other long-term debts,” in this particular case, it is composed solely of long-term provisions. High values are observed in the first 2 years studied (2016–2017), as the group set aside provisions corresponding to litigation in 2016 (21), which start to decrease until they become 0 in 2020, due to the fact that the company considers that there are no relevant litigations to provision (21).

**4.1.2.3. Current liabilities.** Current liabilities are those that are expected to be settled in the company’s normal operating cycle, i.e., a period of less than 12 months. As can be illustrated in Figure 8, the most significant item is “Trade payables.”



**FIGURE 7** | Evolution of long-term borrowed funds of Sunier and its subsidiaries. Source: Authors’ own elaboration based on data provided by Sunier’s financial statements (2016–2020) (21).



This refers to payment deferrals granted by trade creditors, which is an advantage for the company due to the fact that this type of financing is spontaneous in nature and, therefore, has no explicit cost, but there is an implicit cost for the deferral of payment. However, such financing could be very costly for the company. We must highlight two significant variations during the period (2016–2020): on the one hand, in 2017, there is a decrease, due to the payment of the bill for the plant construction project in Uruguay (21); on the other hand, there is a significant increase in 2019, due to the commercial debts contracted with third parties for the construction of the photovoltaic farms completed in this financial year and whose maturity on 31 December 2019 had not occurred (21).

## 4.2. Analysis of the *pro forma* invested capital balance sheet

“The *pro forma* invested capital balance sheet is a recomposition of the initial *pro forma* balance sheet; this is carried out because it gives us a new perspective resulting in a much simpler analysis of the company. By carrying out this type of balance sheet, we will be able to know the volume of investment that the company will have to face by means of financing from the owners or third parties” (19). As can be inferred in [Figure 9](#), the structure of invested capital is clearly economic over the period studied (2016–2020).

In the year 2020, the Economic Invested Capital represents 83.87% of the total invested capital, representing almost all of it. In effect, the assets outside the operation have been reduced in the period studied, representing only 0.10% of the total in 2020. This fact favors the Net Equity of the company, since the existence of outside assets can reduce its book value. In the same vein, [Figure 9](#) determines that the economic invested capital is mainly financed with external resources at cost (short- and long-term financial obligations) during the entire period studied (2016–2020).

## 4.3. Analysis of the *pro forma* income statement

“The Income Statement or Profit and Loss Statement *Pro forma* is an accounting statement that groups the different income and expenses, so that allow you to obtain the intermediate magnitudes (results) that serve the purposes of study and analysis of the company” (19). Data considered most relevant in this group are shown in [Figure 10](#).

In relation to the gross operating result, a significant growth can be seen in 2017 (74.19%), compared to 2016 (30.92%), mainly due to an increase in net turnover, which increased from 15,874,000 = C to 31,124,000 = C. The rest of the years until 2020 will continue with moderate growth. As regards net operating profit, the variations are not so

significant, except in 2017. It increased from 18.35% to 52.64%, mainly due to the sale of land that the Group had in Toledo to a third party. This fact has generated profit and has been recorded under the heading “Impairment and results on disposal of fixed assets” (Note 8, Notes to the 2017 Financial Statements).

With regard to the financial result, it presents negative values throughout the entire period studied (2016–2020), due to the fact that external financing has a great weight within the company, so that financial expenses are higher than financial income. It should be noted that the maximum loss is reached in 2020, as a result of the issuance by the company of a bond for an amount of 45,300,000 euros, which increases financial expenses considerably (21). Finally, the values of the result for the year are increasing in the period (2016–2020), reaching in 2020 a result for the year of 30,414,000 euros, which is positive for the company, as this means the development of the analysis of the profitability of Sunier, S.A. and its subsidiaries.

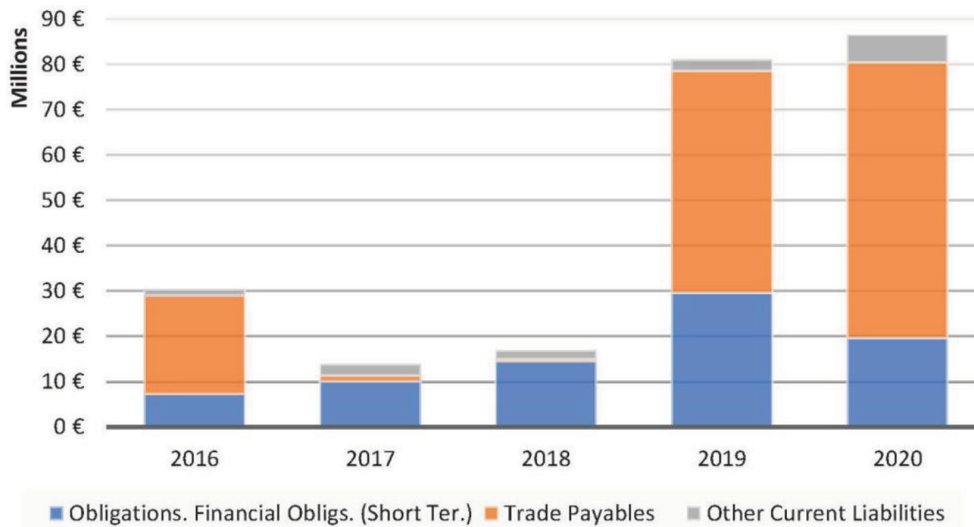
## 4.4. Financial profitability

“Financial profitability, also called ROE (return on equity), is the ability of the company to generate financial income that remunerate the owners-investors” (19).

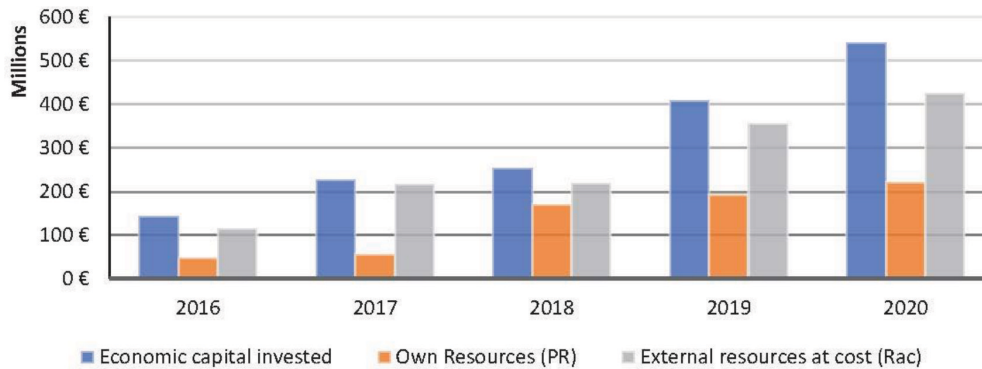
### 4.4.1. Financial profitability before tax and after tax (ROEaT and ROEdT)

Pre-tax financial profitability measures the company’s ability to generate financial income on the profits that belong to the owners-shareholders before tax whilst after-tax financial profitability measures the returns earned by owners-shareholders after tax. As stated in [Figure 11](#), the values presented by the financial profitability before and after taxes (ROEaT and ROEdT) during the period studied (2016–2020) are positive values. This means that it is in a favorable situation that benefits both owners and shareholders. It is worth noting the large variations that both returns have undergone throughout the period, which may represent a situation of instability for the company and its investors. In 2018, a large drop was observed, mainly due to variations in equity, as a capital increase operation was carried out in that year (21).

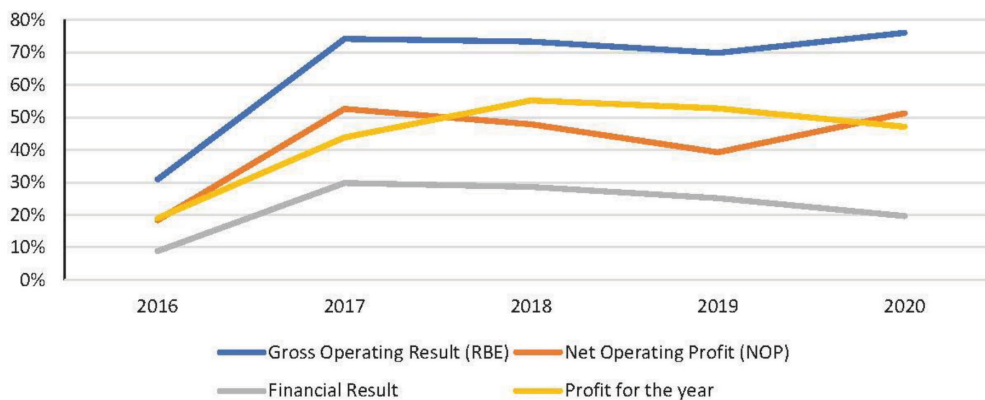
Next, the decomposition of the financial profitability in variables, such as the financial margin, the rotation of the invested capital, and the financial risk will be made. With respect to the values presented by the financial margin before and after taxes during the period studied, they are high values, which is interesting for the owners-investors, since it is what they have left before taxes for each monetary unit of sale. In the year 2020, it reaches its maximum, with 38.33%. This is due to an increase in both the profit before and after tax, as well as the net turnover. In relation to the turnover of invested capital, it



**FIGURE 8 |** Evolution of current liabilities of Sunier and its subsidiaries. Source: Authors’ own elaboration based on data provided by Sunier’s financial statements (2016–2020) (21).



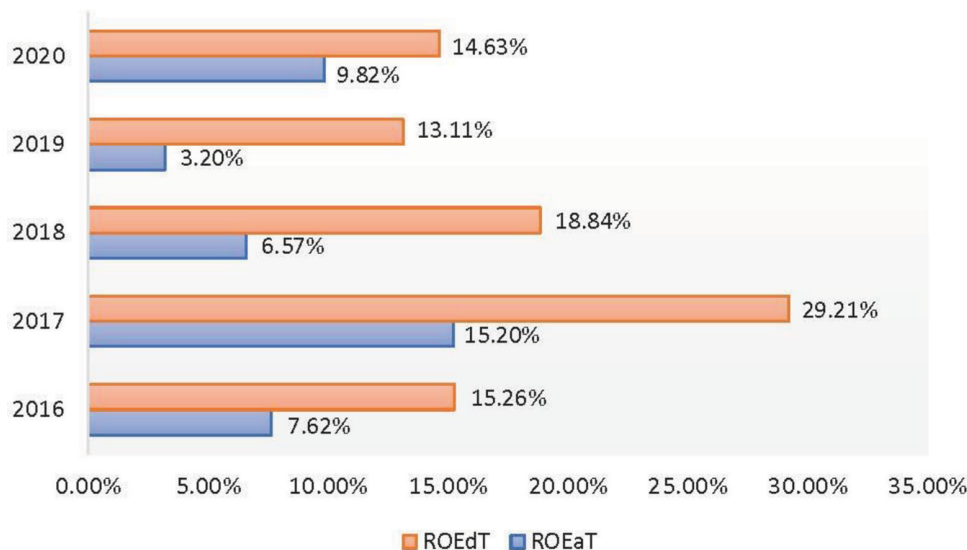
**FIGURE 9 |** Economic Invested Capital Financing with PR and R AC in the period of 2016–2020. Source: Authors’ own elaboration based on data provided by Sunier’s financial statements (2016–2020) (21).



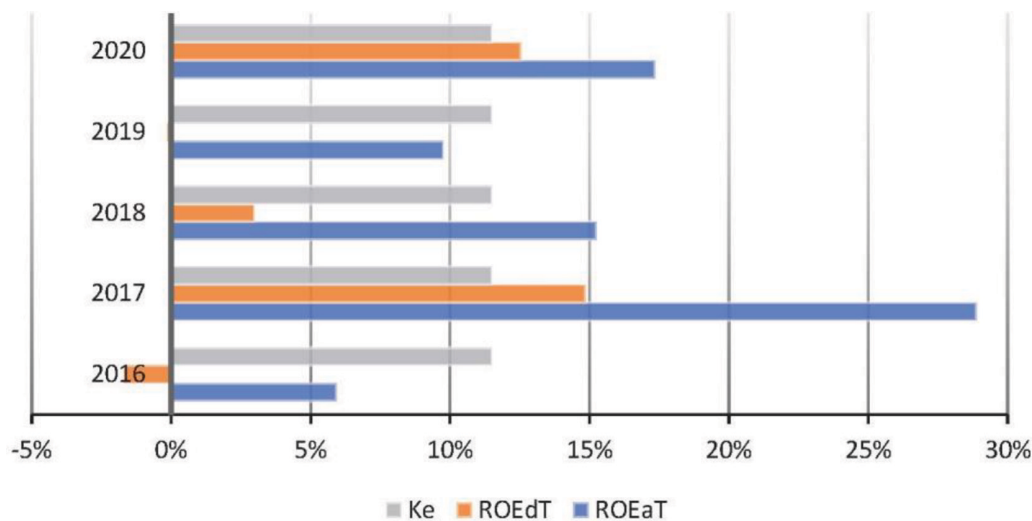
**FIGURE 10 |** Evolution of the Income Statement Results in the period of 2016–2020. Source: Authors’ own elaboration based on data provided by Sunier’s financial statements (2016–2020) (21).

represents the number of times that the company is able to recover the investment with the net turnover. In the particular case of Sunier, it presents high figures throughout the period studied, reaching its maximum in 2017 with a turnover of 14.09, which implies a great efficiency of

the company in the use of its capital. Finally, analysing the financial risk, the company presents a high level of indebtedness below one between the years of 2016 and 2018 and equal to one in 2019–2020; sometimes, it can be beneficial for the company.



**FIGURE 11** | Financial profitability before and after taxes ( $ROE_{\alpha T}$  and  $ROE_{dT}$ ) by periods. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).



**FIGURE 12** | Comparison of financial profitability before and after taxes with  $Ke$  in%. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

#### 4.4.2. Comparison of financial profitability before and after tax with the cost of equity $Ke$

Next, a comparison of the financial profitability before and after taxes, with the cost of capital ( $Ke$ ), has been carried out. To conduct this task, Figure 12 has considered a constant cost of equity equal to 15% in order to determine from what profitability the owner-shareholders are willing to make an investment in the company. As can be contemplated, during the period studied, the financial profitability after taxes is below the cost of equity.

This means that the company is not managing to create value with the investments made and, moreover, in the years of 2016 and 2019, the owners-shareholders are making losses or low profits with their investments. However, the pre-tax financial return exceeds the cost of equity in most years,

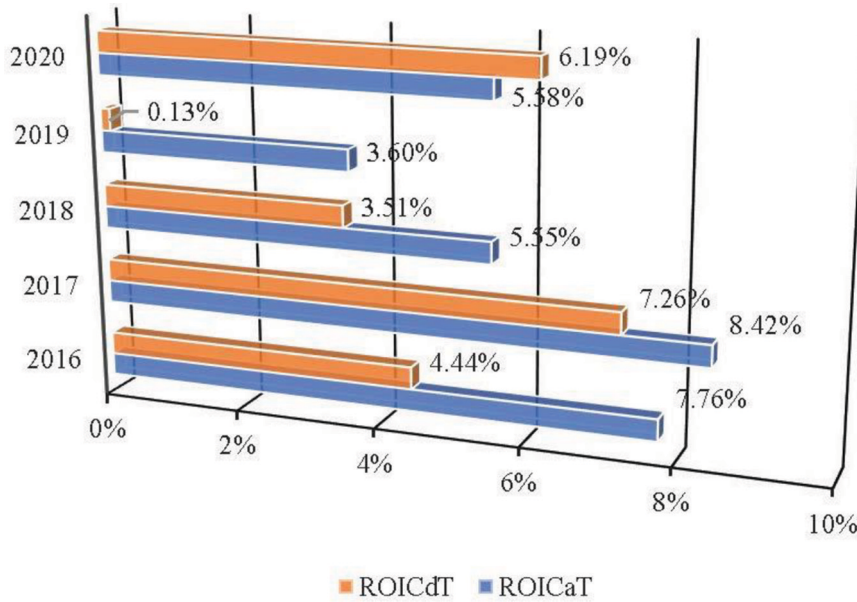
except for the years 2016 and 2019, so in this case, the company creates value for shareholders-owners-investors.

## 4.5. Economic profitability

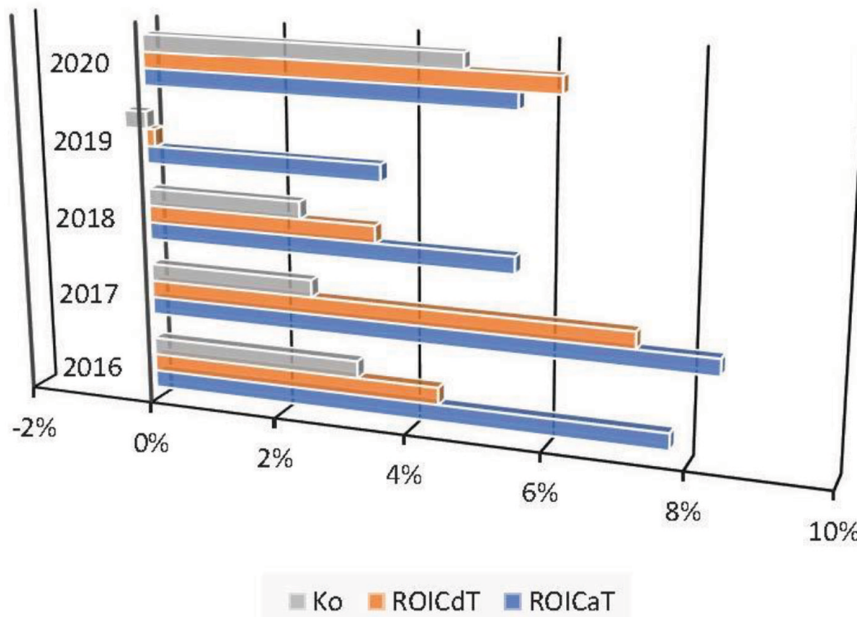
“Economic Profitability (ROIC), refers to the company's ability to generate economic rents that remunerate stakeholders, particularly owners and lenders” (19).

#### 4.5.1. Economic profitability before and after tax ( $ROIC_{\alpha T}$ and $ROIC_{dT}$ )

The economic profitability before taxes ( $ROIC_{\alpha T}$ ) is the capacity of the economic capital invested in the company to generate income capable of remunerating owners and



**FIGURE 13** | Economic profitability before and after taxes (ROICaT and ROICdT) by periods. Source: Authors’ own elaboration based on data provided by Sunier’s financial statements (2016–2020) (21).



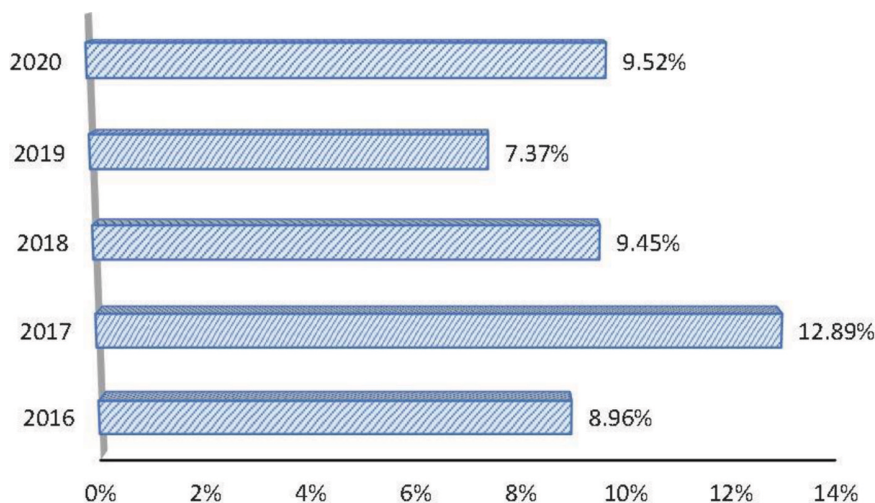
**FIGURE 14** | Comparison of economic profitability before and after tax with Ko in%. Source: Authors’ own elaboration based on data provided by Sunier’s financial statements (2016–2020) (21).

lenders while preserving the economic capital of the company and before paying income tax. After-tax economic profitability is defined as the ability to generate economic rents to remunerate owners and lenders after tax. **Figure 13** represents the economic profitability before and after taxes (ROICaT and ROICdT) during the period studied (2016–2020).

The year 2019 stands out with a large drop in both profitabilities. This fact is due to the increase in investments in tangible fixed assets, more specifically in technical

installations and machinery which, in 2018, was 253,914,000 euros compared 408,933,000 euros in 2019 (21), which causes a significant increase in the invested capital of the company and, therefore, a significant decrease in the economic profitability of the company. Next, we will proceed to the decomposition of economic profitability in two variables, which are the economic margin and the turnover of invested capital.

It presents the highest economic margin in 2020, with 62.71%; in other words, the company manages to cover the



**FIGURE 15** | Overall profitability of Sunier and its subsidiaries. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).



**FIGURE 16** | Comparison of solvency ratios from the point of view of the “static approach.” Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

costs incurred in its operating activity for each unit sold, but it is not managing resources as efficiently as possible, as it presents a turnover of invested capital ( $r$ ) of 0.089. For the rest of the years studied (2016–2019), the situation is similar to the one mentioned above.

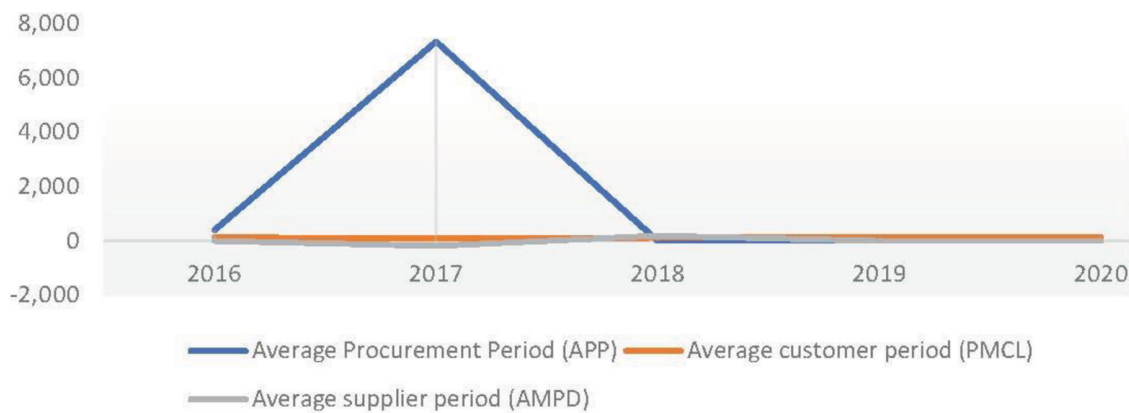
#### 4.5.2. Comparison of the economic return before and after tax with the cost of capital $K_0$

This analysis aims to determine whether the company is creating value from the point of view of the managers of the company, that is, if the economic profitability before and after taxes is higher than the cost of capital  $K_0$ , this allows the company to know whether the management that is taking is adequate or not. As shown in **Figure 14**, the company behaves as a “value creator” during the entire period studied (2016–2020), which means that the company develops an

appropriate investment policy and can continue with the investments it is making.

#### 4.5.3. Overall company profitability

“The overall profitability of the company (RGE) shows the capacity of the economic capital invested to generate income that remunerates all the factors involved in the production process and not only those who provide financial capital such as owners and lenders” (19). The measure can be implemented as a management tool, for which it is broken down into three variables: worker productivity ( $p$ ), the structure of personnel costs ( $gp$ ), and the turnover of invested capital ( $r$ ). **Figure 15** exhibits that, on the one hand, the profitability of the company suffers from two decreases, in the years of 2018 and 2019; this is due to the increase in personnel



**FIGURE 17** | Average maturity periods of supplies, customers, and suppliers. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

expenses, an increase in the average invested capital, and a decrease in the productivity of its workers.

On the other hand, the year 2017 stands out, as it is the year where the group obtains the highest profitability, due to a significant increase compared to 2016 in worker productivity and added value.

## 5. Solvency and risk analysis of Sunier and its subsidiaries

The aim of this section is to carry out an analysis of the company's risk and solvency, to find out the relationship between risk and profitability and whether the company can meet its commitments to the company's financial backers.

### 5.1. Risk analysis

Sunier and its subsidiaries are exposed to different risks. The Group's global risk management programme highlights the following risks (21):

**5.1.1. Exchange rate risk.** The currency other than the euro in which the Group mainly operates is the US dollar. The Group operates internationally and is, therefore, exposed to exchange rate risks due to currency transactions, especially the US dollar in the case of the plants in Uruguay. In this case, the exchange rate risk is minimized by natural hedging when carrying out all transactions, including financing in US dollars. Exchange rate risk also arises on the purchase of certain equipment (mainly photovoltaic modules), which is also denominated in US dollars. In this case, forward hedges are usually arranged to cover this risk.

**5.1.2. Price risk.** The Group is exposed to the risk of the price at which energy is sold to the market. Management manages this risk by taking into account market conditions at the time of the transaction and analysing the possible

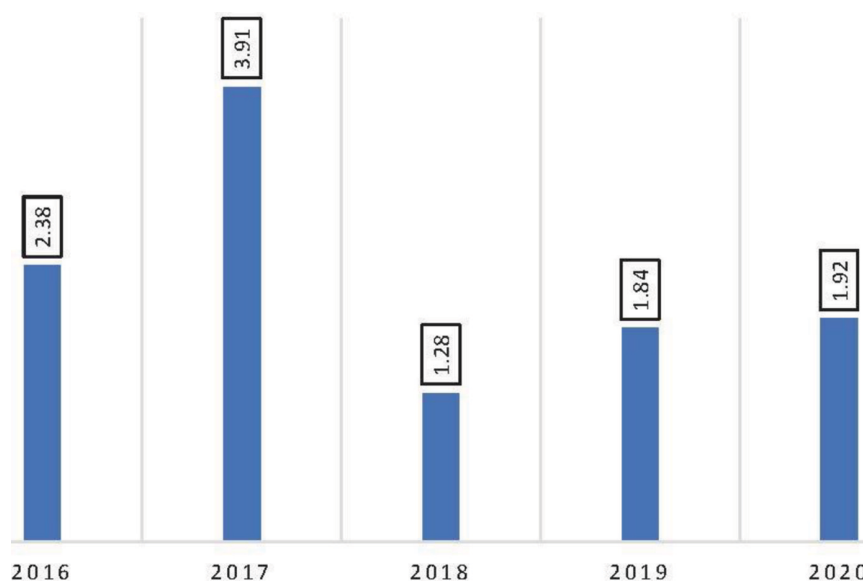
signing of contracts with a closed price. In addition, the closing of power purchase and sale agreements with various counterparties substantially reduces exposure to market price risk.

**5.1.3. Cash flow interest rate risk.** Interest rate risk arises from long-term bank borrowings. Debts at variable rates expose the Group to cash flow interest rate risk. The Group's policy is to provide financing at a fixed rate (project bonds) or to hedge the interest rate risk on loans tied to floating interest rates by arranging derivatives. In addition, another way of managing this risk is through floating-to-fixed interest rate swaps.

**5.1.4. Credit risk.** Credit risk arises from cash and cash equivalents, derivative financial instruments, and deposits with banks and financial institutions. Transactions are only entered into entities with a high credit quality and taking into account past experience and other factors. Where customers have not been independently rated for credit quality, the finance department assesses their creditworthiness, taking into account the customer's financial position, past experience, and other factors.

**5.1.5. Liquidity risk.** Prudent liquidity risk management involves maintaining sufficient cash and marketable securities, having the availability of financing through a sufficient amount of committed credit facilities, and having the capacity to settle market positions. Given the dynamic nature of the underlying businesses, the Group's finance department aims to maintain flexibility in funding through the availability of committed credit facilities. Management monitors the Group's liquidity reserve forecasts on the basis of expected cash flows.

The first two risks mentioned are systematic or market risks, associated with circumstances beyond the company's control and which cannot be modified by the company. The last three are systematic or specific risks, which depend on the decisions taken by the company and can be modified



**FIGURE 18** | Debt ratio of Sunier and its subsidiaries. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

by it. It should be noted that the systematic risk analysis will not be carried out, as the company cannot control it. In contrast, an analysis of the company's risk is going to be carried out, including the economic and financial risks to which the company is exposed. Taking into account the profitability after taxes and avoiding the accrual principle, it is determined, on the one hand, the financial risk is 9.58%, and on the other hand, the economic risk is 2.29%, and it is fulfilled that Financial risk > Economic risk.

## 5.2. Solvency analysis

“Solvency is the ability of management to meet the commitments to third parties assumed by the company” (19). In this section, we will analyse solvency according to maturity: long-term solvency and short-term solvency.

### 5.2.1. Short-term solvency

This is the company's capacity to meet its short-term commitments, once the time has come for them to expire, with the most liquid elements of current assets. To analyse this variable, two approaches are used.

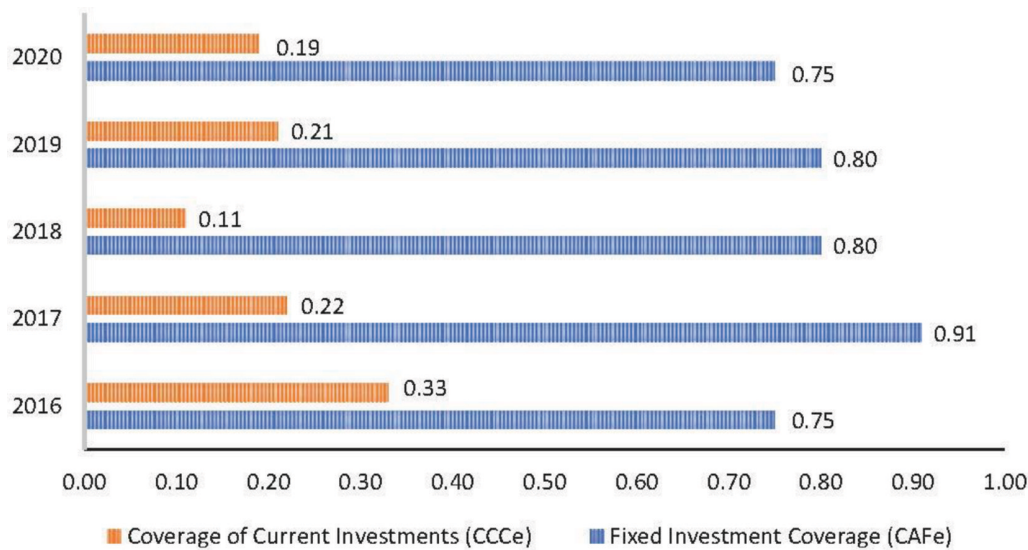
**5.2.1.1. Static approach.** This has a series of limitations as it is based on the masses of assets that the company has at a given time without taking into account that this is constantly changing. Within this approach, we will analyse the solvency or liquidity ratio, the acid test ratio, and the liquidity ratio. **Figure 16** highlights that there is no differentiation in the values of the solvency/liquidity ratios and acid test ratios between the years of 2017 and 2020, due to the fact that the company does not have inventories in that period. We highlight the year 2016, in which the values of these ratios are

different, due to the fact that in the first year, the company did have stocks.

These changes are due to the fact that the inventories that the company had in 2016 were transferred to fixed assets (21). In addition, both the acid test ratio and the solvency/liquidity ratio are above unity, which means that the company is able to easily collect its short-term receivables and meet its current obligations. In 2016, the solvency/liquidity ratio was above one, but the acid test ratio was below one, due to the high investment in inventories made in that year (21).

In relation to the immediate liquidity ratio, it allows us to know to what extent the current liabilities can be covered with the company's available cash during the period studied (2016–2020). In 2016, it is observed that the current liabilities held by the group is much higher than the available, presenting an immediate liquidity ratio of 0.3217, so that the group cannot meet the short-term financial liabilities shown on the available balance sheets. However, this ratio starts to grow in 2019, reaching its maximum of 5.4983 in 2018, when the group has sufficient cash available to meet its financial liabilities. In contrast, in 2020, the company experiences another fall in this ratio and is once again unable to meet its short-term obligations with its available funds.

**5.2.1.2. Dynamic approach.** This procedure takes into account the flow variables representative of the income-generating capacity available for the payment of debts. It analyses the company's capacity to meet its short-term payment commitments with the resources generated in its current activity. To carry out the study of solvency using this approach, we will use the average supply period, average customer collection period, and average supplier payment period. As **Figure 17** reflects, over the entire period under study (2016–2020), the group is in an unfavorable situation,



**FIGURE 19** | Coverage of investments in fixed and current assets by periods. Source: Authors' own elaboration based on data provided by Sunier's financial statements (2016–2020) (21).

as it would have to meet its short-term debts before collecting outstanding receivables from its customers, which means that it would have to meet these commitments by other means.

In relation to the average supply period, there is a high peak in 2017, since, in that year, stocks become 0, due to the fact that these stocks were transferred to fixed assets (21), and a decrease in consumption. For the rest of the years (2018–2020), this period becomes 0, as the company does not have stocks and, therefore, does not have consumption.

### 5.2.2. Long-term solvency

“The analysis of long-term financial solvency tries to study the risk that the company does not generate sufficient resources with its investments (fixed assets) in its operating activity to meet its long-term financial obligations” (19). Various debt ratios are commonly used to study long-term solvency; however, there is another way of analysing long-term solvency through coverage ratios.

**5.2.2.1. Debt ratios.** These indicate the proportion of external financing that the company has in relation to its equity. In addition, it is essential for risk analysis, since it is the basic piece of the study of financial leverage, so it is part of the financial objectives included in the strategic planning of the company. There are different debt ratios, but the most important one is the one obtained by dividing the cost of borrowed funds by the company's own resources.

**Figure 18** remarks that the group's level of indebtedness has undergone striking changes during the period under study (2016–2020). In addition, we observe that the proportion of debt supported by the company compared to its own resources is high. The year 2018 stands out, as it is the year in which the Group required the least financing, with a debt level of 1.28, compared to 2017, with a debt level of 3.91 where it reached its maximum. This is due to

a significant increase in Shareholders' Equity following the capital increase operation carried out on 13 July 2018 (Note 6, 2018 Annual Accounts).

**5.2.2.2. Coverage ratios.** We find, on the one hand, the coverage of investments in fixed assets, the degree to which the fixed assets concerned are covered by long-term obligations. On the other hand, we find the coverage of investments in current assets, the extent to which the Group's investment in working capital is covered by short-term financial obligations.

As can be stated in **Figure 19**, the group has greater investments in fixed assets, so it has greater long-term solvency. The company is financed mostly with long-term financial obligations, so it does not present solvency problems, since it can meet the payment in a longer term.

## 6. Conclusion

Having carried out the study relating to the company Sunier and its subsidiaries during the period of 2016–2020, the following conclusions can be drawn. Regarding the Economic Structure, most of the investment is destined for fixed assets, which will allow the company to serve a larger volume of customers and grow as a group. In contrast, in terms of current assets, debtors have increased considerably during the period studied, which would be beneficial for the company, since over time, it has a greater number of customers. However, the liquidity of the group could be affected by the possibility that customers are not able to meet their obligations in the agreed time. In relation to the Financial Structure, the company is financed fundamentally with external resources, mainly with long-term duration, instead of its own resources. This situation



could become negative for the company and cause problems of indebtedness, so it would be advisable for the company to start reducing its long-term financial obligations and increase its own resources so that there is a balance between both sources of financing.

With regard to the returns obtained by the group, they have had a positive evolution throughout the years studied, which is beneficial for the owners-investors. In addition, the group meets the objective of value creation, since its cost of capital is below the financial profitability of the same, thus obtaining the sufficient capacity to meet its debt.

Finally, in the solvency analysis, according to the analyzed approaches, it is extracted that the company is solvent in the short term, since during the study period, the company will be able to make the payment to its suppliers in a greater postponement than the collection of the credits to its clients. In addition, it should be noted that with the total current assets presented by the company, it can meet its short-term financial obligations. In contrast, with respect to long-term solvency, the company is mainly financed with long-term financial obligations, but it has a large number of investments in fixed assets with which it can meet these obligations.

The main implication of this research can be found in the fact that an environmentally friendly company, belonging to the CSR Scope, can be perfectly viable from an economic-financial point of view and can be a solvent in the long term and thus can guarantee its future operations. Since the sole and exclusive objective of this research is an economic-financial analysis of “Sunier,” future lines of research could be developed by performing a Benchmark between this company and the main European and worldwide renewable energy companies. In the same way, it is also possible to opt for quite interesting analytical perspectives such as the one applied by Matonti (22), i.e., by analysing the impact of financial difficulties on the profit management strategies of companies in a sector as changing as that of renewable energies.

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