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How to make a service company become sustainable in Colombia.

A study case of Solare S. A. S.

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Angélica López Díaz

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Table of abbreviations

B2B: Business to Business

EPC: Engineering, Procurement and Construction Contract

ROE: Return on Equity

ROA: Return on Assets

GHG emissions: Green House Gas

CSR: Corporate Social Responsibility

SDG: Social Development Goals

LCA: Life Cycle Assessment

KPIs: Key Performance Indicator

Resumen

El bienestar económico de un país se mide por la productividad de sus empresas, es decir, si los indicadores reflejan un crecimiento conglomerado de su producción de un año a otro, esto va a indicar una disminución en el desempleo, un aumento en el consumo, un aumento en la inversión nacional y extranjera y en general un incremento en las oportunidades que propician una vida digna para sus habitantes.

Por muchos años la sociedad se concentró en el impacto económico de las empresas en la sociedad, sin embargo y con el paso del tiempo fueron apareciendo aspectos que no habían sido tomados en cuenta y que son aún más críticos para el desarrollo de la población. Es así como el aspecto social y el aspecto ambiental se convirtieron en materia fundamental para las organizaciones y su perdurabilidad en el tiempo; de esta forma son tenidas en cuenta todas las necesidades de los stakeholders y se miden las acciones para la consecución y obtención de los objetivos sostenibles.

En Colombia, el concepto de sostenibilidad cada día coge más fuerza, el gobierno ha concentrado sus esfuerzos en aportar y apoyar las metas para el 2030 propuestas por las Naciones Unidas por medio de los Objetivos de Desarrollo Sostenible, sin embargo existen falencias en la formación hacia los empresarios, quienes a pesar de querer contribuir a la mejora ambiental y social, no saben por dónde empezar para hacer de su compañía una cadena de valor sostenible.

Por medio del estudio del caso de Solare S.A.S, una start-up perteneciente a la industria energética, se proponen estrategias para lograr que sus procesos evolucionen en la transformación de una empresa sostenible que siga los lineamientos de los SDGs. Este documento pretende dar una guía a aquellos empresarios, en especial las empresas de servicios,

que deseen convertir sus operaciones en actividades que integren diferentes elementos como el bienestar de sus clientes, de sus empleados, de sus proveedores, el cuidado ambiental, la protección de los derechos humanos, la transparencia, entre otros.

Palabras clave: Sostenibilidad, sostenibilidad empresarial, empresas de servicios, cadena de valor, objetivos de desarrollo sostenible.

Abstract

The economic well-being of a country is measured by the productivity of its companies, that is, if the indicators reflect a conglomerate growth of its production year-to-year; this will indicate a decrease in unemployment as well as an increase in consumption, national and foreign investment, and opportunities that foster a decent life for its inhabitants.

For many years, the focus was on the economic impact of companies on society, however, aspects that had not been taken into account and that are even more critical for the development of the population began to appear. This is how the social and environmental aspects became fundamental matters for organizations and their durability over time. This way, all the needs of the stakeholders are considered, and the actions to achieve and obtain the sustainable objectives are measured.

The concept of sustainability gains strength every day in Colombia, where the Government has concentrated its efforts on contributing and supporting the 2030 Agenda proposed by the United Nations through the Sustainable Development Goals (SDGs), but there are shortcomings in training with entrepreneurs who, despite wanting to contribute to environmental and social improvement, do not know where to start to make their company a sustainable value chain.

Through the case study of Solare S. A. S., a start-up belonging to the energy industry, strategies are proposed to make its processes evolve in the transformation of a sustainable company that follows the guidelines of the SDGs. This document aims to provide a guide to those entrepreneurs and service companies that wish to transform their operations into activities that integrate different elements, such as the well-being of their customers, employees and suppliers; the environmental care; the protection of human rights; and the transparency.

Key words: Sustainability, corporate sustainability, service company, value chain, sustainable development goals.

1 Introduction

1.1 Background

Colombia is considered an emerging country with a potential economy and the highest growth in Latin America, therefore, it is very attractive to foreign investors. To achieve such attributes, Colombia concentrated its efforts on promoting industries from different sectors: tourism, agribusiness, service provision, construction, manufacturing and tec-industries (Colombia is one of the most important actors in the region when it comes to the creation of large technology-based companies, like UN Bank, Platzi, and Rappi), which intend to be the future of the Colombian economic base to emancipate us from our dependence on the export of hydrocarbons. All of this, along with the commercial exchange product of globalization, has triggered an environmental problem. In an article published by a recognized radio network in the country, it is stated that for 2018:

According to the World Health Organization (WHO), Colombia is the second country in Latin America with the most air pollution, with an average of 19 000 annual deaths throughout the territory. Bogotá, the capital, registers a value of 15 PM2.5 of exposure (amount of smog it produces). (La FM, 2018, par. 2)

In addition, the Ministry of Environment and Sustainable Development maintains that atmospheric pollution:

Is one of the environmental problems of greatest concern to Colombians due to the impacts generated both on health and on the environment, in addition, it is the third factor that generates social costs after water contamination and natural disasters. According to a study carried out by the National Planning Department – DNP, in 2015 poor air quality generated around 8052 deaths in the country, with associated costs of approximately 12,2

billion pesos, a figure that is equivalent to 1,5 % of GDP for that year. (Ministry of Environment and Sustainable Development, n.d., par. 1)

It is possible to affirm that Colombia is a fundamental actor in the generation of new technologies and companies based on the interpretation that the greater the progress and development of a society, the greater its energy demand. This leads us to condense this information as a business and improvement opportunity for the quality of the energy matrix offered in the country to its new investors.

These opportunities for improvement are reflected in the scarce supply of energy projected for 2025 according to entities such as the Colombian Association of Electric Power Generators (Acolgen), where the demand for energy will exceed the power generation capacity in the country, since projects like Hidroituango (a large hydroelectric plant projected to generate 2400 MW in the region of Antioquia) will not be carried out. This will make companies to resort to generation by burning fossil fuels, causing a setback in the progress of sustainability.

On the other hand, one of the problems of the sustainability of Colombian companies lies in their technological backwardness to improve and optimize processes, products and services.

This, due to low imports and little investment in the development of new technologies that facilitate a more efficient use of the energy required throughout the supply chain; for example, manufacturing companies use machinery that is more than 10 or 15 years old and some older machines are refurbished for use. This leads to a high and inefficient energy consumption that does not allow companies to maximize their profits, so the object of the development of this work proposes a solution to make service companies in Colombia profitable and sustainable.

Now, the Government has proposed goals and strategies to face the growing environmental problem, however, there is a lack of information in the market regarding all its

transversality and horizontality, which is why the businessmen have not dared to invest in sustainability policies (based, for example, on solar energy); and there are different situations that have raised the cost of making companies sustainable: the upcoming recession, the shortage of glass, the container crisis, and the Ukraine-Russia war.

1.2 Aim

Over time, the economy has been one of the most significant and relevant determinants in the history of a country. An economically stable government can offer welfare to its inhabitants. This is defined by access to health, education, housing, employment, business development and the country's ability to produce goods and services.

The Gross Domestic Product, known by its acronym GDP, is the indicator that shows whether a country has a healthy economy and how it is performing. It began to be applied as a global index to measure the national production of each of the companies in a country in a given period. The analysis and evaluation of this indicator are as critical as the diagnosis of a person's health; based on it, Government decisions, budgetary and monetary policies, and other types of business and investment decisions are made. Consequently, if a country's GDP is high, it is more attractive to foreign investors, who take their companies to economically attractive countries; with this, unemployment is reduced by creating job opportunities and income per capita increases (Stobierski, 2021).

The GDP contemplates within its calculation: the level of consumption of goods and services, the level of investment that the Government makes in assets that benefit the country in the long term, the level of public spending that means Government spending, and the difference in profit between exports and imports (Stobierski, 2021). The growth of companies has a positive correlation with the growth of the economy and, therefore, the well-being of the population will

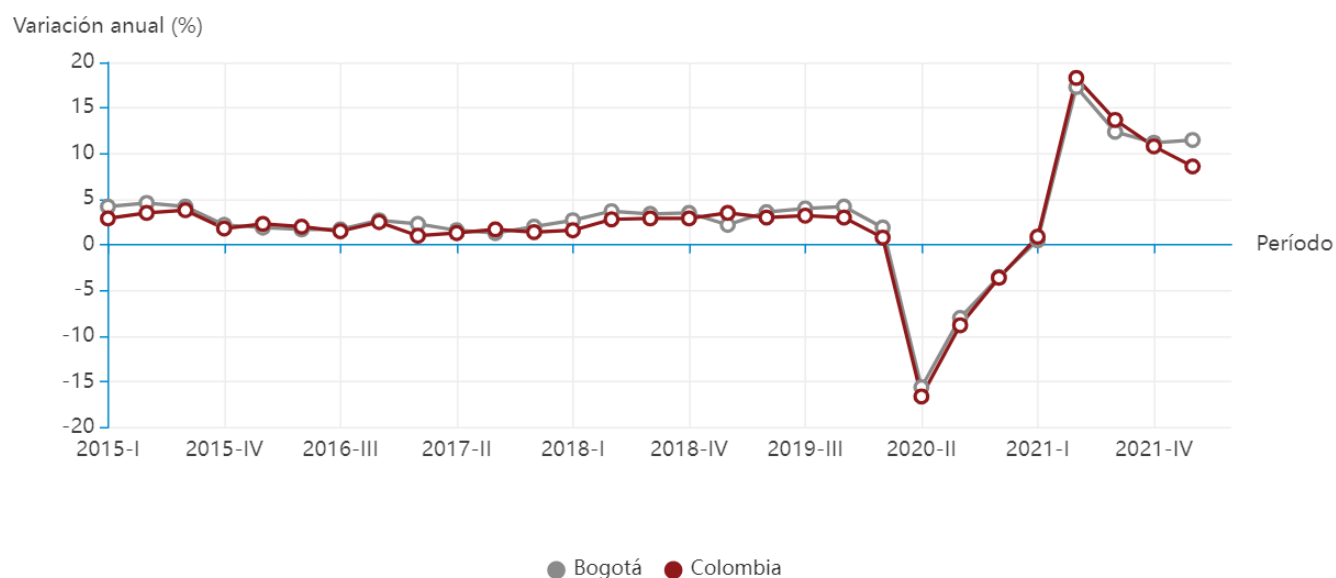
increase with the level of investment in education, health, R&D, infrastructure improvements, subsidies, among others.

Over the last few years, Colombia has had a history of prudent fiscal and macroeconomic management, anchored in an inflation targeting regime, a flexible exchange rate, and a fiscal framework based on fiscal rules, which allowed the economy to be a leader in the region in pre-pandemic times and had sustained growth since 2000. In addition, it managed to reduce poverty and unemployment significantly in the last 10 years.

(Universidad EAFIT, 2021, par. 4)

Since last year, Colombia's GDP has shown positive results despite the impact of the global pandemic. The DANE (National Administrative Department of Statistics) projected a growth of 10,2 % for 2021, a percentage surpassed by the 10,6 % growth of the country's economy (World Bank, 2022).

The behavior of the GDP in the last year has shown one of the most important increases among Latin American countries, which has made it a strong economy, despite the problems it had to face regarding the oil crisis and, therefore, the dollar boom. However, the productivity of the companies has been maintained; the investment and the creation of new companies have grown; and the different economic activities, such as construction, agriculture and services, have been strengthened. This means that the Government has implemented strategies that favor the productivity of organizations, encourage the creation of new businesses, and contribute to the permanence and durability of existing product and service companies.

Figure 1*Economic growth*

Note. Taken from Chamber of Commerce of Bogotá, n.d.

Businesses have played a vital role in Colombia's economy; In particular, service or third sector companies, according to reports from the Ministry of Commerce (2022), represent 68 % of the country's GDP. Although the influence of the service sector on the wealth of a nation has been analyzed for many years, the pandemic highlighted its importance in the growth of an economy, not only because it was a critical factor for economic reactivation, but also because it offered people the opportunity to keep their job or be employed, which is essential for a country's development and social well-being.

Figure 2*Third sector*

Composición del PIB, 2021

Sector	Partic.
Primario	14,1%
Secundario	18,0%
Terciario	68,0%

Fuente: DANE

Note. Adapted from *Macroeconomic context of Colombia*, by Ministry of Commerce, 2022.

As evidence, the service economy is essential for the transformation and growth of nations; as the United Nations mentions, developing countries could consider them a new frontier, so the positive integration of developing countries into the globalized service economy is important from the point of view of development national policies and regulatory initiatives, and cooperation in multilateral and regional trade policies must recognize the development potential of services. However, the Government and the companies themselves, aware of the importance of services for the development of countries, have established endless practices and strategies to maximize their productivity and efficiency and ensure their permanence and durability.

To do this, different companies have adopted strategies that have evolved, leaving aside the retrograde perspective of reducing organizations solely to the search and achievement of benefits; on the contrary, today they adopt comprehensive policies based on the well-being of their employees, offering career programs within the organization, selection processes focused on the quality and diversity of work teams, thus generating a positive social impact. They consider aspects that have become more relevant, such as practices aimed at caring for the environment, and the reduction of activities that generate a negative impact. All this means that both product and service companies have a more holistic and comprehensive vision of the creation and execution of a corporation, which makes them more competitive in national and international markets, since the trend in these markets revolves around sustainability.

2 Objectives

This work aims to analyze the activities in the value chain of a service company (Solare S. A. S.) that can be transformed or integrated to implement sustainable practices that lead to a competitive advantage in the market and that seeks the improvement on the quality of social justice, environmental protection, and a global economic growth.

On the other hand, there are secondary objectives: identifying the political, social, environmental, or cultural variables that may represent a challenge for Colombian companies that want to change to sustainable concepts, and offer the reader recent information about incentives offered by the country that promote sustainability.

Based on this information, the goal is by analyzing the problem, propose strategies that can be useful not only for the company under the case study, but also to many other companies in the service industry who want to turn its purpose into sustainability.

3 Literature review

3.1 Concept of service company

The definition of services has undergone variations over time due to the complexity of its nature, which is not completely detached from the concept of good, causing discernment between authors and thinkers, thus leading to the creation of different interpretations. However, the basis for understanding what is a good and what is a service is that goods can be defined as objects, devices or things; and services as events, activities or performances (Hoffman & Bateson, 2011). Now, the main difference between these two terms is intangibility, as well as another series of important elements that differentiate them, such as those presented below:

- Intangibility: as Hoffman & Bateson (2011) explain, intangibility is the lack of physical substance. On the other hand, goods lead their entire value chain to end in a tangible product, while services end in actions or performances despite the fact that there are products within their value chain.
- Inseparability: the skill cannot be separated from the person or company that owns it. That is, a singer's voice cannot be separated from the singer, or a teacher's knowledge cannot be separated from the teacher. Therefore, the service cannot be separated from the company or person that provides it.
- Heterogeneity: in production, standardization is one of the most important principles and one that the company or factory must seek to pursue; however, in services, having the component that they come from the action of humans, the services will never be exactly the same with each other. In other words, despite the fact that two companies have the same corporate purpose of providing cleaning services, the provision of the service

between the two will never be completely the same.

- **Perishability:** services have the particularity that they are sold and consumed simultaneously, for this reason they tend to perish if they are not consumed. A product can be kept for a certain amount of time while, for example in a dentistry service, if the dentist does not have patients that day, the time in the hour of service will not be able to be replenished for the professional; therefore, if the service is not used, it would be wasted.
- **No transfer of ownership:** when acquiring a service, we are paying for the use or access, but we are not becoming its owners.

Figure 3

Difference between product and service

Physical Goods	Services
A thing	An activity or process
Tangible	Intangible
Homogeneous	Heterogeneous
Production and distribution are separated from consumption.	Production, distribution and consumption are simultaneous process.
Core value produced in factory	Core value produced in buyer-seller interactions.
Customers do not participate in the production process.	Customer may participate in the production
Can be kept in stock.	Cannot be kept in stock.
Transfer of ownership.	No transfer of ownership.

Note. Adapted from Service management and marketing, by Grönroos, 2007.

3.2 Strategy concept: how do service companies position themselves?

The strategy is a fundamental methodology in the growth and positioning of a company or brand, it gives guidance on how to achieve the goals set by the organization, reducing uncertainty and improving decision making. Decisions are made strategically when they directly impact competitive advantage: "Competitive advantage cannot be understood by looking at a

firm as a whole. It stems from the many discrete activities a firm performs in designing, producing, marketing, delivering, and supporting its product" (Porter, 1985, p.). The competitive advantage is, then, a system or set of attributes that offer exclusivity to the brand and make it different from the others.

To achieve a sustainable competitive advantage, the company must ensure that its service meets the following four characteristics that make up the VRIN model (valuable, rare, costly to imitate, non-substitutable):

- Valuable: the brand must have valuable resources that offer differentiation in a way that gives it the power to take advantage of its strengths and neutralize the threats of its competitors.
- Rare: the company's resources must offer exclusivity, a competitive advantage is not generated when a large number of brands have the same resource, even if it is valuable.
- Costly to imitate: for the competition and other companies, the resources that the brand has must be difficult or impossible to copy.
- Non-substitutable: to achieve a sustainable advantage, resources, in addition to being valuable, rare and difficult to imitate, must have a component that cannot be substituted or replaced by another valuable resource.

3.3 Value chain of a service company

According to the contributions of Porter (1985), a value chain is the complete set of the different activities that a company develops from its creation to the completion and delivery of the product or service. The elaboration and analysis of a value chain helps company managers to make strategic decisions, in such a way that they use it to separate each of the processes and thus

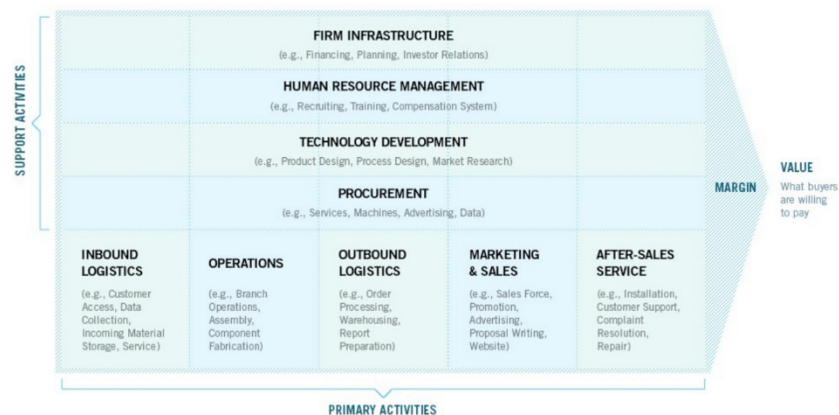
observe the detailed operation of each one of them.

The objective of this tool is to examine which are the strategic activities to focus on the resources that offer the company a competitive advantage and, as mentioned, make decisions that favor the company in terms of brand positioning (Porter, 1985).

In his publications, Porter (1985) offers a value chain with generic activities that apply to both the goods and service industries. In this way he divides the chain into primary activities that are responsible for the creation of the service, its sale and delivery to the customer, and after-sales service; and the secondary activities that support the primary ones, such as human resources activities, marketing, among others, as shown in Figure 4.

Figure 4

Primary and support activities



Note. Adapted from *Institute for Strategy & Competitiveness*, by Harvard BusinessSchool, n.d.

Now, taking into account that the strategy is proposed based on the area of the critical chain for the company, and that decisions are made to optimize and improve the resources that offer competitive advantage to the company, it is determined that the actions and results of a company must be sustainable, that is, they must last over time and be beneficial for both the company and its external environment.

3.4 Sustainability concept: how the services area has been developed in Colombia in terms of sustainability

The concept of sustainability arises from the need to make organizations structured entities capable of responding to current demands, considering each one of their stakeholders, that is, all those organisms, individuals, organizations and interested variables that intervene in the organization functioning process; and how their presence can affect each of these, thus seeking viable solutions to reduce their impact on the environment. To deepen the concept, Bancolombia (n.d.), one of the largest financial groups in our country, defines sustainability as to generate: “positive impacts on our environment from our actions as people or companies in the economic, social and environmental fields, thus seeking to conserve the resources that future generations will need to exist” (par. 1).

Today we speak of the term Triple Bottom Line (TBL), which refers to the factors that a company must have to ensure its holistic commitment both internally and externally, and therefore supports the purpose of the sustainability: seek that companies are fair to society, and that they protect and preserve the environment and that their activity contributes to economic prosperity at a global level. Willard (2002) mentioned seven benefits of the TBL:

1. Easier hiring of the best talent.
2. Higher retention of top talent.
3. Increased employee productivity.
4. Reduced expense for manufacturing.
5. Reduced expenses at commercial sites.
6. Increased revenue/market share.

7. Reduced risk, easier financing.

In order to comply with this integral panorama, the company must acquire different practices such as the corporate social responsibility (CSR), where the impact that each of the activities of the value chain generates in the community related to the company is measured: customers, employees, suppliers, shareholders, etc.; and based on its measurement, it is necessary to take measures and actions that always seek to improve and reduce its negative impact on these groups, that is, to ensure the quality of employment, the healthy origin of the resources and the workforce that extracts those resources, the respect for animals, the social integration, among others. Another of the objectives of the CSR is to guarantee the transparency of companies towards their stakeholders, which is why all companies with good practices make an annual report that reflects the measurements previously made of their impacts, their goals, scope and the planning and actions to be taken to achieve those goals. In addition, in these reports it is possible to know more in depth the way in which the organization is operating and the strategies that have been applied up to now.

Other practices that promote sustainability in companies and that are associated with environmental aspects are Cradle To Cradle (C2C), in which companies use biodegradable elements; Reduce, Reuse, Recycle (3-Rs), with which companies give continuity to the elements they use for their operations; the use of renewable energy with solar panels, windmills and water; the reduction in the use of fuel, when companies are committed to digitization and virtuality; and the eco-design in services, in which companies make use of innovation to change the direction of their services in such a way that they can reduce their carbon footprint.

In a fundamental way, Governments, organizations and individuals have adhered to the approaches created by the United Nations, known as SDGs. These are 17 principles that aim for "climate change, education, women's equality, defense of the environment, the design of our cities" (United Nations, n.d., par. 1), and seek universal prosperity, transformation, production and responsible consumption. Figure 5 shows the 17 principles.

Figure 5

SDGs



Note. Taken from *17 goals to transform our world*, by United Nations, n.d.

One factor leads to the other. If companies do well, the country does well, so the number of companies that have implemented this strategy in their policies and practices has been increasing, achieving results represented in the profit margin increase. The synergic integration of these three factors (economic, social and environmental) leads, as mentioned, to improve the company's profitability; the main reason is that today's market is more aware of the consumption and the manufacturing process of the products. Knowing market trends and needs, sustainability allows organizations to evaluate themselves in terms of competition and anticipate changes.

According to Correa & Hernández (2017), social, environmental and governance performance impact positively on the fulfillment of the basic objective of companies: the

generation and maximization of value. The cost of capital and, therefore, on the value of the company, would be positive, which would become a point of convergence between the stakeholders and shareholders approach, since accounting for the actions of the company to its stakeholders contributes to an increase in its value.

Globalization has brought about many positive changes influenced by developed countries. The concept of sustainability came to Colombia and many other countries, guided by the United Nations and the creation of the World Commission on Environment and Development, which was born out of concern about the inefficient management of natural resources and environmental deterioration. As a result, the World Commission on Environment and Development (1987) produced a report known as the Brundtland Report or *Our common future*, which has become a worldwide milestone in the direction of sustainability.

Colombia is characterized for being a country rich in biodiversity and natural resources; likewise, its preservation has been important since the incorporation of environmental articles in the Political Constitution of 1991. However, it was not until 2014 when the Colombian Government began to make its first approaches to the global term of sustainability, through its participation in the United Nations Conference on Sustainable Development Rio+20, where Colombia and different countries of the European Union and Latin America began to weave the concept of the SDGs (Ministry of Foreign Affairs, 2022). This way, the Government began to understand that, in order to achieve the SDGs, CSR practices must be implemented, which include terms of transparency and accountability, and encouraged to boost the profitability of companies in terms of efficiency according to the needs of the current market, without forgetting that it must also be a joint effort of companies, public administration, society, national and international organizations and all those who may be involved. To continue within the

framework and guidelines stipulated by the United Nations, Colombia has implemented a series of actions aimed at fulfilling the 2030 Agenda:

- “Pact for Colombia. Pact for equity”: it was a National Development Plan implemented through Law 1955 of 2019 that seeks to achieve equity and equal opportunities for all Colombians in legal and business matters.
- The Green Growth Mission seeks to unify planning and public resources with the green and sustainable growth goals.
- Incorporation of the SDGs in the National Development Plan.
- Creation of the commission to monitor compliance with the SDGs.
- Colombia is part of the universal agreement held in Paris COP21 that seeks to reduce greenhouse gas (GHG) emissions by changing the operating model of the different economic activities.
- In 2020 Colombia officially becomes the 37th member of the Organization for Economic Cooperation and Development (OECD), in order to reform its legislation, labor policies, waste and waste policies, judicial system, business system, towards the guidelines of the organization, and thus nurture their knowledge regarding the good practices of the countries belonging to the OECD.

3.5 Stimuli from the Colombian Government to promote sustainability in companies

In order to counteract the effects of the pandemic, make the Colombian economy more sophisticated, mitigate labor informality, reduce inequality and poverty, and stimulate business creation and sustainability, Colombia has developed in recent years a series of incentives that are presented next:

- **Law 1715 of 2014:** the purpose of this law is to encourage the development and use of renewable and non-conventional energies, through their integration and participation in long-term contracts with the State to bring energy to non-interconnected areas of the country.
- **Law 1901 of 2018:** allows any type of company to adopt the status of Collective Benefit and Interest Company (BIC), so that organizations can join the SDGs.
- **Marshall Plan or Agreement 780 of 2020:** due to the economic crisis caused by the pandemic, the Government will deduct a percentage of the Industry and Commerce (ICA) tax from those companies that have reported loss or decrease in income. This agreement also proposes a progressive rate for micro-enterprises between 2021 and 2027.
- **Law 1834 of 2017:** “set of activities that, in a linked manner, allow ideas to be transformed into cultural goods and services, the value of which is determined by their intellectual property content” (Buitrago & Duque, 2013, p.). With this law, which is supported by the National Council of the Orange Economy (CNEN), the expansion of the creative economy is sought through lines of credit and financing for those companies that wish to promote cultural infrastructure, in addition to promoting the created seal in Colombia, to publicize all goods and services of Colombian origin.
- **Financing for entrepreneurs:** different organizations, such as the Business Growth Management Unit of the National Government - INNpursa, the Bank for Business Development and Foreign Trade (Bancoldex), and the District Account Fund for Innovation, Technology and Creative Industries - FITIC, offer credit lines and programs to finance from micro to large companies from all industries, in addition to advice and credits for solutions on issues of costs and operating expenses, advice for brand creation,

advice on innovation and technology, among others. CTel funds are allocated to projects with a productive and sustainable social purpose in the regions of Colombia.

- **Universal access:** the Ministry of Information Technologies and Communications will promote the establishment of self-sustaining technocenters in remote municipalities of the country where resources are scarce and will provide training, access and training to information and communication technology (ICT) services.
- **Equal opportunities for social prosperity:** with the aim of stimulating the autonomous generation of income in rural areas that have been affected by violence, the Government created the Sustainable Colombia Fund together with the Development Program with a Territorial Approach (PDET), which is financed by Norway, Sweden and Switzerland, and supported by the Inter-American Development Bank (IDB). In this program, a financing plan has been established for people in vulnerable conditions, granting microfinance to enterprising peasants who wish to start or promote their business ideas. Likewise, the rural population will be supported with financial education that encourages micro-savings and micro- insurance.
- **Law 2069 of 2020:** this aims to:

Establish a regulatory framework that promotes entrepreneurship and the growth, consolidation and sustainability of companies, in order to increase social welfare and generate equity. Said framework will outline a regionalized approach in accordance with the socioeconomic realities of each region. (article 1)

This law provides the opportunity for expansion and market penetration for cooperatives, MSMEs and SMEs, thus increasing social welfare and equity.
- **Colombian Center for Corporate Responsibility (CCRE):** this non-governmental, non-

profit organization has been created with the purpose of accompanying organizations in their management in favor of corporate social responsibility. Thanks to their evaluation and advice, many companies have implemented social policies such as the development of social practice strategies, the promotion of strategic alliances, the implementation of environmental measures, the construction of communication channels between the company and suppliers, as well as the ethical establishment in the value chain with each of the groups involved.

3.6 Examples of application: what Colombian service companies have done in terms of sustainability

Sustainability has been constantly growing both in Colombia and in Latin America, and different product and service companies from Colombia have implemented different strategies to achieve the objective of sustainability.

One of the strategies to achieve sustainability in the medium and long term is to maintain a policy open to innovation in the company's services. For this, it is essential to have a team of people with creative abilities who adapt such creation into products or services according to the evolution of the world and the environments that surround the company. Suppose there are high-performance teams with characteristics of empowerment, led by people who have this same capacity for innovation: in that case, the business organization will maintain the ability to produce and provide services according to the needs and expectations of the market and the industry, which constantly changes over time and becomes the main reason why a company needs to be at the forefront.

For example, in the history of banking institutions in Colombia, we find adaptations that were made in the industry to achieve the sustainability of the banking business. Banks have been

handling checking and saving accounts for a long time, using checkbooks and handling bank teller transactions. Then they came up with the help of ATMs and debit and credit cards. Later they found the need for society to make transfers to different cities. In this evolution, banks began to make transfers to other banking institutions. They also began receiving payroll payments with automatic posting to employee accounts during this time.

In addition, some banks began to receive transactions in foreign currency. In recent years there has been an adaptation where new directions have been reached, such as banking correspondents and virtual transactions, following the modern digital age. Thus, over several years, the evolution of banking services has evolved in a minor way thanks to innovative thinking adapted to customer needs. The banks that did not achieve this adequacy were left out of the competition.

Continuing with the sustainability strategies, among other measures that have remained in force in several companies are the policies of austerity and savings in elements. These measures are often used to control and reduce costs to allocate resources to other activities. However, in Colombia, medium and small companies adopt internal strategies and, in most cases, their economic activity did not arise to change the way of doing things or improve methods and processes to generate a positive impact on the environment. For example, some companies have implemented policies such as saving in the use of paper, pens and ink; this, with the help of computers, and all kinds of elements that do not interrupt work performance or company processes. Therefore, not only will the company face gains represented in income, but this will also reduce unnecessary consumption and will have a great impact on reducing waste. Others consider options such as remote work, which translates into a decrease in the use of means of transport: subway, bus, plane, car and train, which translates into a reduction of GHG emissions.

Another type of service that can cause striking and positive environmental impacts, for example, are transport companies when providing their services, and instead of using a traction car that may have an old engine that produces polluting gases, or vehicles with high consumption of hydrocarbons, they use electric cars. These produce significant savings in the consumption of elements, which in the long term make them more sustainable by saving the income, and this helps to achieve a greater profitability. This generates a social impact that makes the company visible in the global trend of social and environmental responsibility, achieving a responsible position.

Environmental care policies and social and environmental responsibility have become increasingly important, becoming a global effect that leads human beings to make the rest of the world aware of eco-friendly trends. Currently, companies have opted for strategies that lead them to maintain an increasingly friendly position with the environment and respect for natural resources. In this aspect, innovative human capital has been essential to show the public the trends in communication and processes, which are also demanded by the clients themselves.

Thus, in order to achieve better indicators of environmental sustainability, it is necessary to provide services that do not produce unpleasant, difficult to eliminate or toxic waste in their processes, but that have high rates of reuse or recycling. In addition, the methods must involve less use of basic elements of the environment, or that can deteriorate these elements in their natural state, such as water, energy, hydrocarbons, trees and plant elements that require long production cycles. All these strategies are summarized in changes in the logistics of the supply chain, making it a sustainable supply chain, through strategies raised around care and environmental responsibility.

In order to ground some of the strategies proposed by different medium and large

companies in the area of services, their success stories are presented below.

3.7 Success stories of service companies that have opted for sustainability in Colombia

3.7.1 Bancolombia

Bancolombia was born in 1998 from the merger between Banco Industrial Colombiano and Banco de Colombia, and years later, with the acquisition of Conavi and Corfinsura, it was consolidated as Grupo Bancolombia. Since then, the bank has expanded its horizons internationally, in Colombia, Guatemala and El Salvador to this day; and it also has branches to serve its customers abroad. The company, 25 years ago, achieved what no other financial entity had achieved at that time: reach the market of the New York Stock Exchange, which is the most important in the world, and thanks to its trajectory, expertise, strategy and projection, it is established as the most important bank in the country (Bancolombia, n.d.).

Bancolombia's purpose is to promote sustainable economic development to achieve the well-being of all, and this was verified by the evaluation of the Dow Jones Sustainability Index, in which they have been participating since 2012, where they obtained 87 points out of 100, which places them in the fifth place globally. Under this slogan, the entity, being aware of the global challenges we face today, accepted the 17 SDGs, developing an operation and business model that includes the issues of linking relationship groups, purchasing policies, environmental goals, climate change, human rights, financing and investment. For this, Bancolombia created the 20/20 vision from which the strategies in the environmental, social and corporate governance areas emerge. Among its main strategies to generate a positive environmental impact are:

- The issuance of green and sustainable bonds for a value of COP 2,1 trillion.
- The management of waste that goes to final disposal; of water, through the water

management model; of paper, redesigning processes and increasing digitization; and of sustainable businesses, from financial leverage to sustainable construction.

- Implementation of photovoltaic energy and renewable energy in its facilities for carbon neutrality.
- Implementation of buildings to the Building Manager System (BMS), which offers information related to energy consumption in order to maintain energy efficiency.
- Promotion of teleworking.
- Financing lines for non-conventional renewable energy projects and sustainable projects.
- Implementation of internal tax for each business trip. The proceeds are invested in energy efficiency projects.
- Among its main strategies to generate a positive social impact are:
- Support for the growth and improvement of the infrastructure of the countries in which they have a presence. In Colombia, for example, they have been strategic allies of concessions, such as the fourth generation concession that will improve the connectivity of Bogotá with Briceño and Zipaquirá.
- Granting of scholarships for access to higher education by the Bancolombia Foundation to more than 1900 young Colombians from rural areas.
- Flexibility in financing plans for home loans, SMEs, micro-entrepreneurs and entrepreneurs.
- Creation of financial mechanisms, such as Ahorro a la Mano and Nequi, so that more people can join this type of service in a simpler, faster and more practical way.
- Expansion of the investment portfolio towards the countryside and the productive sector of the nation by the entity itself and by third parties. The entity seeks to support

organizations that seek the welfare and development of the agricultural industry with financial and non-financial resources.

- Implementation of the circular economy plan, where they propose to sponsor circular economy business lines of their clients, mainly SMEs, companies and corporations, in the agricultural, manufacturing and trade sectors.

Among its main strategies to generate a positive impact on good corporate governance are:

- Solutions that facilitate the customer experience with the financial products and services offered by the bank, such as the expansion of the ATM network, the banking and mobile correspondents; and the expansion of digital systems, such as Wompi, Bancolombia Button, QR codes, among others, which make it easier for businesses to move their money and make transactions in a more convenient way.
- Diversity in the composition of its board of directors.
- Updating of the code of ethics.
- 93 % of the purchases are from local suppliers.
- Focus on diversity, equity and inclusion. The foregoing has made Bancolombia the most sustainable organization in emerging countries and an example for Colombian and Latin American organizations on the path to change towards sustainability.

3.7.2 **Latam Airlines Colombia.**

The Chilean airline, which changed its corporate image in 2004, arrived to Colombia initially with cargo operations in 2009 and passenger transportation from the domestic market to Ecuador. Later in 2010, the company bought the airline Aires and expanded its market in

Colombia and Latin America to finally integrate and become part of the Latam Airlines Group and change its name to what we know today. Under this route, Latam, offering national and international flights from Colombia, is positioned as one of the most important and largest airlines in the country, competing with companies such as Avianca and Viva Air, that lead the Colombian market.

The airline has obtained recognition in the 2022 edition of the Standard & Poor's Sustainability Yearbook (S&P Global, 2022), standing out as the most sustainable group of airlines in America, Europe and Oceania. Likewise, Latam has shown its efforts to implement sustainable policies at the local level, supporting sustainable tourism hand in hand with local communities and managing climate change (Latam Airlines Group, 2022).

This way, the brand launches strategies such as the alliance with IDIPRON and the Operación Sonrisa Foundation, donating tickets in regions where it operates for vulnerable children to fulfill their dream of traveling by plane and enjoying a vacation in the beautiful regions of Colombia. “I take care of my destiny” is another of the strategies that seek to lead to the fulfillment of the three pillars that the company has proposed: governance, climate change and corporate citizenship; with this initiative, the airline seeks to promote respectful tourism, supporting the preservation and recovery of spaces and places that are part of the cultural heritage of society.

The work of Latam Airlines Group does not leave behind its concern to reduce the impact on the carbon footprint, which is one of the main aggravating factors of its activity on the environment. To do this, the company offsets its CO₂ emissions by acquiring carbon bonds in environmental restoration and preservation projects, protecting strategic ecosystems and their biodiversity (Latam Airlines Group, 2022).

3.7.3 Crepes & Waffles

Crepes & Waffles is a Colombian family business created in 1980 by two university students who had the dream of starting a chain of French-style restaurants with an affordable business model for their customers and with the social purpose of hiring female staff to support mothers who are heads of households. Today the brand has around 150 sales points between ice cream parlors and restaurants, located in 15 of the most important cities in Colombia and internationally in Chile, Ecuador, Panama, Mexico and Spain (Crepes & Waffles, 2022).

It is recognized by Colombians because, by trying its dishes and living its experience, they perceive the main ingredient that moves every fiber, action and decision of society: love. This brand has unquestionably become part of the identity of the Colombian population, since, despite the fact that its menu is based on French gastronomy, every detail in the dish, as well as the attention and setting, is designed to please its customers. Colombian culture moved and motivated by passion, warmth and love. For this reason, every occasion becomes an excuse to visit this restaurant that daily witnesses birthday celebrations, graduations, anniversaries, reunions, and more.

Since its inception, the firm has focused on not only benefiting its company in terms of profit, but also benefiting its community and all the variables related to it, an unusual factor in the 1980s, since the term “social responsibility” wasn't as popular as it is today. The following are the strategies launched by Crepes & Waffles to achieve sustainability:

- **Focused on mothers who are heads of households:** its priority is to hire women in vulnerable conditions and mothers responsible for the economic support of their household. However, the company has expanded this purpose and has been training on career programs within the organization. This initiative can be seen in the team of

customer service agents, since the staff that is part of this area is previously involved in that team of waitresses, so they are trained and qualified to inaugurate this service center that facilitates the direct communication with the client.

- **Labor dignity:** following this line, the restaurant chain offers its employees a recognition program in which outstanding employees are recognized for their efforts with bonuses and incentives that seek to motivate staff to continue giving their best; and it also offers premium health and salaries above the minimum. In addition, the values and ethics that govern the brand's policies are instilled inside and outside the company, including respect for the rights of its workers and the community to generate well-being and happiness for its employees.
- **Well-being programs:** the firm offers its employees housing subsidies, subsidies for their children's education, psychological counseling and different courses such as yoga and dance, and programs like the conscious culture that offer spaces to develop and comprehensive awareness.
- **Protection of Montes de María:** along with FLORA ars+natura, this is a company that offers a space for contemporary art in Bogotá, and they have proposed to recover this area of tropical dry forest affected for many years by the armed conflict. For each purchase from the menu that they launched with the name Montes de María on their menu, they will plant a tree in the forest. Likewise, they created an exhibition of artistic works around the region that sought to reflect and make their viewers aware of the social problems that affect Montes de María.
- **Support to farming communities:** Crepes & Waffles is another organization that gives priority to sourcing from local suppliers and that enhances supply from rural

communities. This way, the restaurant chain has suppliers in 10 territories of the country, with whom it reaches agreements to protect and restore ecosystems, as it is the case with products such as cocoa, purchased from locals like Cortepaz, Corpoteva and Community Council Under Mira; or with the blackberry that is bought by the Nasa families of the Mosoco reserve in eastern Cauca.

- **Free cage eggs:** it is an initiative that has spread worldwide and seeks that poultry suppliers, being aware of animal welfare, sell eggs from hens that have not been caged. Crepes & Waffles (2022) has joined this campaign and wants 100 % of its eggs to come from free-range hens.

The previous projects allowed the restaurant chain to obtain the B Certificate as of 2016 from the non-profit organization, or Sistema B, a recognition given to companies that have a positive impact on society and that have the purpose of creating comprehensive value (Crepes & Waffles, 2022).

3.7.4 Bavaria

Bavaria is a Colombian brewery founded in 1889 by two German brothers who, with vision and effort, have managed to expand Bavaria's horizons, allowing it to be framed as the most important and influential brewery in Colombia. The factory has nearly 4000 employees, 26 registered beer brands and other product lines, such as water and soft drinks; strategic alliances with international breweries, like SABMiller; and various awards and recognitions for its very high-quality beverages around the world.

Undoubtedly, the brand, despite the fact that its operation did not initially revolve around sustainability, is one of the most concerned companies today when it comes to offer benefits to stakeholders under the framework of the SDGs, focusing on its three pillars: being the best place to work, contribute to the country's economy, and impact the Colombian population. Finally, its sustainability report allows the consumer to interpret good practices in terms of transparency in the management of its operation and environmental and social impact (Bavaria, n.d.).

The social aspect is one of the main focuses of the brand, as they say, their desire is to be the best place to work, but they also have social initiatives that have a positive impact on the population and communities. Recently, and due to the health crisis, Bavaria, in partnership with the Ministry of Defense and Banco Itaú, opened an emergency hospital to care for 50 patients in the Atlantic region, in addition to donating 242 000 face masks, 100 000 antibacterial gels, 100000 bars of soap, 30 000 protective masks, 20 000 packages of food for vulnerable communities; and transported more than 2000 tons of food nationwide.

Likewise, they have proposed strategies around the benefit of Colombian communities. In terms of entrepreneurship, they launched the Emprendedoras project, that seeks to favor 50 000 shopkeepers in Colombia by providing personalized virtual training for business strengthening

and scholarships for accredited universities in higher studies for both the shopkeepers and their children and/or grandchildren.

In terms of agriculture, Bavaria has the vision of turning the Colombian countryside into a producer and supplier of barley at a competitive level and in this way boost the productivity of Colombian farmers. To this end, it has provided two research and development centers and has invested more than USD 2 million to investigate the viability of this project.

Regarding its workers, the firm has different programs and initiatives to become the best place to work. The AB-InBev Global Management Trainee talent program seeks to attract the best talent for the commercial and logistics areas and the supply chain trainees for the productive area. The development program includes the “Coaching: mujeres líderes” and “Training: liderazgo inclusivo al alcance de tu mano” plans, which seek to ensure gender equality and inclusion. Also, the “Familias Felices” program aims to assist families in the adoption process for families facing challenges at the time of conceiving and families in the initial stage of motherhood, granting financial support and leave licenses for both maternity and paternity.

In the environmental sphere, solar panels have been implemented in most of its facilities, seeking to supply 100 % renewable energy by 2025. Similarly, for the transportation of its products, the brand has introduced 200 electric trucks to its floats in order to reduce its carbon footprint. It also purchased friendly refrigerators to accompany the previous purpose; and for water consumption, reduction goals have been proposed. Continuing with the line of reducing the negative impact from their operations, they have joined the circular economy scheme, focusing on changing most of their product packaging to returnable packaging made from recyclable materials such as PET and glass.

Bavaria was recognized in 2021 as a sustainable company, a recognition granted by the

United Nations Global Pact for good practices, in accordance with the SDGs and standing out with the “miPáramo” project, with which they intend to protect and conserve the Santurbán moorland, which is a critical point for the country's water security and on which two million people depend for their water supply. This recognition was granted for the community awareness strategies on caring for the ecosystem and the improvement in agricultural practices, campaigns to mitigate deforestation, and the planting of 268 890 native trees (Bavaria, n.d.).

3.7.5 Celsia

The foundations of Celsia originate from 2007 when Grupo Argos, which is a business group made up of nine companies □ including investments in cement, energy, road and airport concessions □ decided to expand its portfolio and invest in the creation of a company specialized in renewable energies. Within its portfolio, which is still found in Colombia, Panama, Costa Rica and Honduras, it offers, among its products and thermal services, wind, hydro, photovoltaic plants and solar projects. It is present in 87 municipalities that have 16 transmissionsubstations, 168 distribution substations, and more than 42 000 kilometers of distribution network (Celsia, n.d.).

Celsia's corporate purpose revolves around sustainability, but they have implemented strategies in all dimensions to comply with the triple bottom line model and follow the guidelines of the SDGs. In the environmental dimension:

- Environmental certification: the company has been certified in environmental management under the ISO 14001 standard, which is a certification that gives guidelines to organizations to plan and organize their processes around the reduction of their negative impact on the environment.

- Carbon neutral: this initiative has the particular purpose of being an agent of change and massively getting more organizations to join the country's objective of being carbon neutral by 2050. The company, from its strategies, wants to serve as an example so that the other companies accompany it in this challenge. Some of its strategies are the optimization of its operations by acquiring sustainable technology and performing constant maintenance on its equipment, energy efficiency with the use of digital platforms that offer a diagnosis of energy consumption, reduction in the use of fossil fuels, and the increase in the use of clean energies.
- Climate change: aware of the impact that organizations generate on the environment, the company prepares annual reports on the quantification of GHG emissions generated by Celsia's operations. Through the measurement of these indicators, the company sets objectives and strategies to achieve the least impact on the environment.
- Eco-efficiency: through control of waste management, energy resources, water resources and atmospheric emissions, the company seeks to focus on the optimal and efficient use of natural resources.
- Protection of biodiversity and ecosystems: Celsia proposes strategies and actions in favor of the protection of biodiversity, and it has also launched a project called VerdeC to restore the most affected ecosystems in the departments of Colombia through the planting of trees.

In the social dimension:

- Celsia focuses on improving the quality of life of its workers, who are considered as the most important pillar in the organization. For the company, as long as the employees are happy, they can all succeed in all aspects; therefore, the organization proposes initiatives

that seek the happiness of its staff by improving their quality of life and supporting safety and security, and health at work.

- On the other hand, the firm contributes to society through investments in Colombia and Central America in aspects such as the well-being of communities related to operations and sustainability for the development of productive skills, for access to energy, and for access to education.

In the economic dimension:

- Investment has been the main strength in the economy of the organization and also its contribution to the collective economic benefit. In recent years, the company has made investments that strengthen the relationship with customers, such as supporting substations and control systems to reinforce the trust. Similarly, Celsia has set aside a budget to invest in research and development, which has led them to carry out investment projects: the diversification into conventional and non-conventional energy models, the transactional platforms to invest in large-scale solar energy, the transmission, and the thermal power generation.

4 Methodology

4.1 Difference from authors' work and own work

The methodology used to achieve the purpose of this project starts from the compilation and the analysis of issues related to the definition of services and business sustainability in order to lay the necessary foundations to contextualize the development of the theme that is the purpose of this work. In addition, to materialize the previous conceptualization, success stories of leading companies in the country that have managed to implement a sustainable value chain will be briefly exemplified, with the aim of offering a guideline on possible solutions that can be adapted, so that Colombian companies such as Solare S. A. S. can integrate the concept of sustainability and, thus, be a sustainable company in Colombia.

Subsequently, the information of the company on which the case study will be based will be presented; this was collected through the participant observation (PO) methodology, where the researcher (the author of this work) is part of the daily activities of the company. This way, it is possible to gather grounded, honest and intimate information about the society in order to carry out an analysis of the problems that the company may face in terms of sustainability, and thus be able to propose the strategies that can follow Solare to become a socially responsible, economically viable and environmentally sustainable service industry business.

This degree work geographically locates its research around the development and behavior of sustainability in the service industry in Colombia, as well as the business analysis and entrepreneurship on which the case study is elaborated.

- **Primary data sources:** company documents and statements.
- **Secondary data sources:** web pages with public information from organizations and entities that analyze and report the political, economic, social and cultural aspects of the

country; as well as scholar and academic publications and books.

5 Case study: Solare S. A. S.

5.1 History

Solare S. A. S. is a company incorporated in February of 2021 by Andrés López, international business manager, and Giovanny Díaz, electrical engineer. These are two young entrepreneurs who saw a great opportunity in the renewable energy market, which is a stage of growth and development in Colombia, according to the market study carried out by ICEX in collaboration with the Embassy of Spain in Colombia..

This enterprise was born then with the objective of working as an agent of change in the face of growing environmental problems, creating and offering solutions for the optimal use of resources in addition to the high costs of electrical energy, the inefficiency of the electrical service, the inefficiency of the network operators, and the high costs that the consumers must assume to have access to this service. Aware of the responsibility of communities to be agents of change and promoters of reducing the negative impact on the environment, Solare came up with the idea of offering alternatives that significantly reduce the carbon footprint by removing greenhouse gases from organizations like residential complexes, rural areas, shopping centers, homes, companies, shops, and the State itself. This, in order to achieve the collective goal of improving people's quality of life, favoring the household economy and, even more importantly, favoring the environment.

Despite the short time that the company has been in the market, its growth has been reflected through the projects it has managed to complete, such as the installation of solar panels in residential buildings and business buildings. Recently it closed a negotiation to install 200 kW in one of the largest shopping centers in the city of Cali. With this, the company, despite the fact

that it started its business in the city of Bogotá, has managed to expand its market in other cities of the country. In addition to the above, Solare has provided other services, such as consultancy in analysis to reduce the charge for energy penalties to large stores like Vanti and Alquería.

On the other hand, its market focus has been concentrated in the private area, but in the medium term, with the purpose of obtaining the single tax registry, so that it is possible to launch itself as a bidder in the SECOP I and SECOP II platforms that the State has to bid and participate in the calls issued by the entities.

5.2 Logo and slogan

The logo was a joint work of the board of directors, but designed and shaped by one of the co-founders, as shown in Figure 6. The figure represents the sun as the main element from which its economic activity starts, the pointed lines represent the rays, and the warm and cold colors show an integration between all the natural resources from which clean energy can be obtained: the colors are intended to symbolize the air that generates wind energy, the water that generates hydraulic energy, and the sun that generates solar energy. Also, the letter *o* intends to represent the aesthetic integration of the colors of the logo and show that it is the central axis, not only for the word *sun*, but of our solar system itself and, thus, in a practical way, to illustrate the logo in a letter.

Figure 6*Logo**Note.* Author's elaboration.

The desire of the founders of Solare has been to become the most influential company in the market, not only because of its sales, but also because of its impact and scope that helps it to reach every corner of the country, allowing to bring energy to areas that are not interconnected, and where this valuable and fundamental resource for the life and development of the population is not present. For this reason, the board of directors formalizes the slogan of its brand with the phrase *Energiza la vida*, which means “energize life”.

5.3 Business model and competitive advantage










Solare S. A. S. is a company committed to creating solutions for the optimal use of resources from other companies and organizations. The expansion of the focus consolidates them as an interdisciplinary work group in constant growth, able to highlight problems, recommend solutions, and help in their application. Its value proposition is to focus on the economic growth of its clients, hand in hand to care for the environment. As evidenced in the previous section, Solare has so far developed a business to business (B2B) model, since its sales are concentrated on a large scale; however, in the short term, they intend to expand their sales directly to the consumer.

Even though it can be assumed by the venture, having solar panels as the main resource, that it is a product company and not a service one, the truth is that it really is an EPC, for its acronym stands for Engineering, Procurement and Construction; that is, it is a company that provides consulting, engineering, installation and project development, and maintenance services.

Solare is part of a Colombian business group made up of seven companies, mainly providers of security and cleaning services. The business model is derived from a cross-selling model, that is, the main companies, to boost the sales of emerging companies, and offer complementary products or services belonging to their portfolio. The main strategic alliance is between Solare S. A. S. and Seguridad Nápoles Ltda., which has a nationwide presence, with 7000 security guards and a wide portfolio of clients. This alliance allows Solare not only to introduce Nápoles clients into its database as potential clients, but also offers endless benefits to all parties; for example, the entities that take part in this cross-selling have the possibility to adhere to one of the main gains, which is the access to tax benefits. The sales models are then mainly divided into the following:

- EPC contracts: Solare designs, supplies, builds and installs the project in a given time, in exchange for a previously agreed value, allowing access to tax benefits.
- Contracts without investment: in order to facilitate the energy transition process, we have financing solutions without an initial investment.

Figure 7*Business model*

Key Partners  <ul style="list-style-type: none"> Public Services Providers Holding Group Allied companies from the same industry Providers of supplies and equipment Financial entities Public bidding systems 	Key Activities  <ul style="list-style-type: none"> Electrical installations Electrical systems installations Energy advisory Maintenance services 	Value Propositions  <p>Business model based on sustainability and social responsibility, backed by a business group capable of financing different projects with zero investment by its clients.</p> <p>Cost savings for users and improvements in quality of life.</p>	Customer Relationships  <ul style="list-style-type: none"> Business group customer database After sale service strategy Organic communication Long term contracts 	Customer Segments  <ul style="list-style-type: none"> Malls Private <u>buldings</u> Hospitals Stores Commercial customers Governmental entities Rural zones
Key Resources  <ul style="list-style-type: none"> Natural resources Human resources Know how Solar panels Require <u>equipments</u> Specialist 		Channels  <ul style="list-style-type: none"> Database Networking Commercial sellers Custom references 		
Cost Structure  <ul style="list-style-type: none"> Costs associated with labor Solar panels costs Supplier expenses Administrative costs Operational costs Research costs Commercial expenses Certifications costs 		Revenue Streams  <ul style="list-style-type: none"> Electrical and energy advisory Energy and electrical installations Equipment sale On grid and off grid <u>proyects</u> sale 		

Note. Author's elaboration.

5.4 Mision and vision

- Mission: disrupt the energy market in Colombia and Latin America with new business models that encourage the partial or total financing of residential, businessand industrial projects.
- Vision: by 2027, Solare aims to be a leading company in the energy sector with salesin the private and public sectors, being recognized for its quality, commitment and interest in the well-being of its co-workers and customers.

5.5 Products and services

Solare's main economic activity focuses on services, however, some products are also offered in its portfolio:

- Electrical installations: execution of works in industrial and commercial electrical installations under regulatory compliance and the team of specialized and trained professionals.
- Maintenance: Solare has trained personnel and certified equipment to maintain its clients' facilities in optimal conditions, guaranteeing the availability of the electrical service. The company performs preventive, corrective and predictive maintenance.
- Electrical systems: installation of medium voltage substations, electrical panels, electrical conduits, structured wiring and shielding, and grounding systems.
- Equipment:
 - Three-phase energy quality analyzer.
 - Thermographic camera.
 - Extech MA640 RMS AC/DC 600A, clamp meter.
 - Fluke 1630 Earth ground clamp meter.

5.6 Financial analysis

Table 1

Financial performance measure

Current Ratio	\$4
Net Profit Margin	1.2%
Working Capital	\$34,6 50,870
Quick Ratio	\$3
Leverage	1.35
Debt-to-Equity Ratio	0.35
Return on Equity	0.02
Return on Assets	0.01

Note. Author's elaboration.

Solare's financial indicators show that the company is capable of meeting its financial obligations and has sufficient liquidity to pay for itself and meet the commitments made, represented in liabilities. Also, as the leverage indicator shows, the company has leveraged itself through liabilities rather than equity; however, it has not acquired long-term debt. In addition, it can be seen that the capital of the estate has not been compromised in relation to the debts.

The Return On Equity (ROE) is slightly higher than the Return On Assets (ROA), which indicates that the company has been financed through debt and has achieved some growth that is also reflected in its assets. In conclusion, the results of the general balance corresponding to the period of 2021 show a positive exercise. The company has assumed debts to be able to leverage itself and assume the costs of the projects; but, likewise, the income and assets show that these can be solved without affecting the capital of the partners. Despite being a young company, it shows growth and profit over the years. The figures represented in Table 1 are expressed in

Colombian pesos.

5.7 Communication and visualization with clients

The company has had an organic approach method with clients through business cards, brochures, word of mouth, references, networking, among others. However, it has not created other communication channels besides the direct one, like a website, social networks or media; nor has it participated in visualization media, such as forums, conferences, fairs, etc.

5.8 Market strategy

5.8.1 External analysis

Through a study carried out on the renewable energy market, Aramburu & Vela (2019) established that:

In the Colombian energy market, hydraulic energy dominates, followed by thermal energy. Thus, non-conventional renewable energies (mainly solar and wind) are in an early stage of development and have a residual weight in the total national energy mix. However, the fact of having a matrix so dependent on water resources means that, in periods of drought, the country presents situations close to the deficit and, therefore, prices increase considerably. (p. 3)

[...]

Colombia has both the potential and the need to develop non-conventional renewable energies to solve the problems presented by its energy sector. For this reason, a gradual increase in the participation of these sources in Colombia's energy mix is expected, both through public initiatives, such as energy auctions, and through bilateral

contracts between private agents. The speed at which the sector will develop will depend on the country's capacity to overcome the barriers detected and to establish the optimal conditions for the development of this market. (p. 5)

Figure 8

Installed capacity (MW) and electricity generation (GWh)

Tecnología	Capacidad instalada (MW) 2019	Generación eléctrica (GWh) 2018 S1
Eólica	18,42	16,6
Hidráulica	11834,57	27186,9
Solar	17,86	6,9
Carbón	1660,3	2109,7
Biomasa	145,15	341
Gas	2583,29	3822,5
Combustibles líquidos	1082	58
Total	17341,59	33541,6

Note. Taken from The renewable energy market in Colombia, by Aramburu & Vela, 2019, p. 3

5.8.2 Industry materiality map

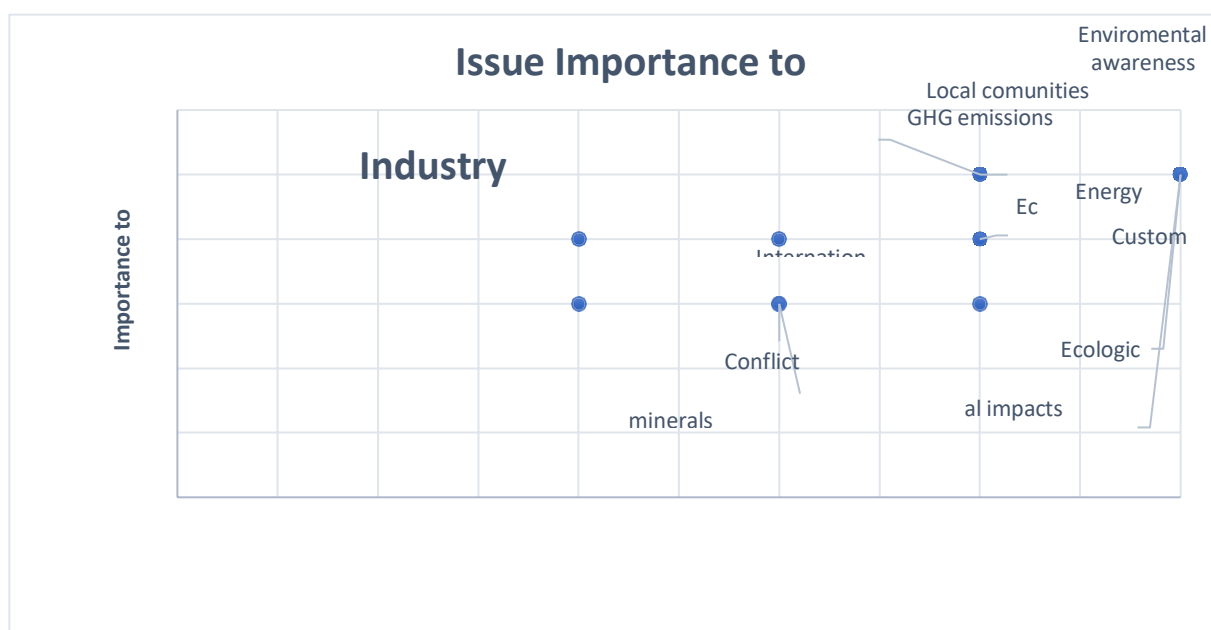
The following materiality analysis of the industry is carried out with the objective of showing the most relevant issues for the renewable energy industry, and prioritize them according to the importance of the stakeholders. For the exercise, clients, shareholders, the Government, employees, strategic allies and communities were taken as stakeholders.

In Figure 9, it can be seen that the main issues are those related to environmental aspects (GHG emissions, environmental awareness, energy management), but there are also social and political issues, those from local communities, political aspects, the economic and social situations at an international level, and the policies and regulations concerning the energy

industry. On the other hand, the less relevant issues are employee welfare, protection of the rights, and work materials; however, this does not mean that companies belonging to the industry do not work on improving these aspects, but rather that the greater relevance, thanks to its corporate purpose, focuses on environmental impact.

Figure 9

Issue importance to industry



Note. Author's elaboration.

5.8.3 PESTEL analysis

5.8.3.1 Political conditions

Colombia recently experienced a change in the Government, not only in terms of the president, but also of traditional political ideologies and customs.

The recent president arrives in the context of social pressure characterized by an anti-establishment way of thinking, accompanied by a series of political activism, and the influence

from a teachers' union to doctrinaire as a consequence of the relationship between corruption and the ideological spectrum of the Colombian right (even without this, in some cases, being close to the cores of corruption).

The sum of these factors, added to the construction of the enemy of the political left embodied in a character as questionable as Álvaro Uribe Vélez, the main representative of the right and what he represented in the face of the different political processes (peace process, political controls, among others), meant a great opportunity to capitalize on social sentiments and come to power with a political agenda characterized mainly by an aversion to everything that conservatism entails (in the social, cultural, political and economic fields). Therefore, the new Government will try to maintain a favorable image in the public opinion by carrying out acts with symbolic relevance, but maintaining the old political practices.

In view of the above, there is great uncertainty among national and foreign businessmen from different economic segments regarding the new Government in the face of economic stability, freedom of enterprise, and the guarantee of private property, which are the main sources of concern.

5.8.3.2 Economic conditions

In economic matters, austerity and the decrease in public spending do not seem to be a quality of this new government; as we see in the statements of the Minister of Finance José Antonio Ocampo:

We are going to present an addition of \$11 billion, a little more than that, but also very well financed because they do not have any debt resources, they are all firm Government resources and we are going to dedicate them, we are still in the composition that is the object of debate. (Ruiz, 2022, par. 2)

To sum up, there is no plan to reduce allocations and their subsequent execution in public spending. The foregoing includes greater tax stress, as well as an increase in the taxable base, which might affect the Colombian business community and also the economic cycle.

Due to the uncertainty generated by the change of Government, the increase in interest rates in the United States, the conflict in Ukraine, the current container crisis, and the problems of national agricultural production, Colombians are facing higher prices in food, housing, water, electricity and other fuels. Such increase in inflation has been the highest recorded ever since 1999.

5.8.3.3 Social conditions

In the social sector, the Government of Gustavo Petro shows great interest on maintaining an ideological hegemony to keep itself either through a legislative act that allows re-election or a political successor in power.

The labor spectrum is not unrelated to what has been previously commented, by virtue of the fact that, with the appointment of the Minister of Labor, Gloria Inés Ramírez (member of the Colombian Communist Party), much more rigorous labor policies are envisaged with an optic inclined towards unrestricted protection of the worker, going in one way or another to proscribe some dispositive acts of the will, such as the contract for the provision of services, reaching the above to have an impact on informality in terms of social security.

5.8.3.4 Technological conditions

According to the Colombian Association of Systems Engineers, due to the pandemic, the consumption of technology in Colombian homes grew fast. According to IMS Insights (as cited by ACIS, 2021), “consumption in digital media increased by more than 54 %, according to the

Colombian Chamber of Electronic Commerce, e-commerce grew by 44 %” (par. 1).

However, despite the efforts of the Government and the industry to meet the growing demand and needs of the different sectors in the use of technology, the digital gap between Colombia and other Latin American countries remains very large.

Colombia is not known for specializing in production and innovation in technology, on the contrary, most technological products are imported. This is because Government investment in science and technology activities is 0,4 % of its Gross Domestic Product, which is very low compared to other countries that invest a percentage greater than 4 % (ACIS, 2021).

The Ministry of Information and Communication Technologies (MinTIC) has been one of the agents of development and progress in terms of technology hand in hand with the Ministry of Mines and Energy, especially when it was led by former Minister Diego Mesa, who led and drove the energy transition. Initiatives were also promoted, such as the creation of solar farms that, from 2018 to 2022, multiplied the country's solar and wind energy capacity by 100.

5.8.3.5 Environmental conditions

In environmental terms, this Government has outlined an agenda apparently colored by a strong cultural influence, since the appointment and subsequent declarations of the new Minister of Environment and Development María Susana Muhamad show a strong position against the exploration and extraction of oil, and a stoppage in the production of natural gas to be imported from Venezuela. She stated that:

The door to fracking is closed, we believe that going to look for the last remnants of gas generates more harm than good. We believe that fracking is not an alternative for a complex such as Colombian ecosystems. We must accelerate the energy transition [...].
[...]

Nor will there be glyphosate, we will work on the substitution of illicit crops through the agrarian reform, where the aim is to fulfill the peasantry with a forestry economy without generating those conflicts that we have today. (Vanguardia, 2022, par. 3-6)

The profile of the Minister and her work plan, as mentioned above, allow us to understand her concern to encourage changes that allow us to move from an economy dependent on oil, and to implement action plans to increase the use of new ecological and sustainable alternatives to the production, economic and cultural cycles of the country.

5.8.3.6 Legal conditions

The legislative branch in Colombia is made up of 280 congressmen, including 108 senators and 172 representatives to the Chamber who make up the Congress of the Republic to promote, promulgate and record in the Political Constitution of Colombia (1991) the laws that protect and favor public order, justice, peace and development in the Colombian people.

However, in recent years, there has been a considerable increase in the issuance of laws in Colombia, which means that it is considered a hyper-legislated country, having into account that, according to the conception or basic premise of law, at most number of laws, the lower the individual and economic freedoms for a country.

The previous assumption leads us to presume that there is a high bureaucracy in the processes that have to do with the State, which means that the legalization of a company before the Colombian State tends to be slow, bureaucratic, regulated and costly. This is reflected in the step-by-step process of creating a company before the Chamber of Commerce, where it is necessary to define a corporate, contractual and statutory purpose of the company, with its code of economic activity. This process is passed multiple times to different reviewers who, given the smallest detail, return the documentation for its due correction. The legal process to create a

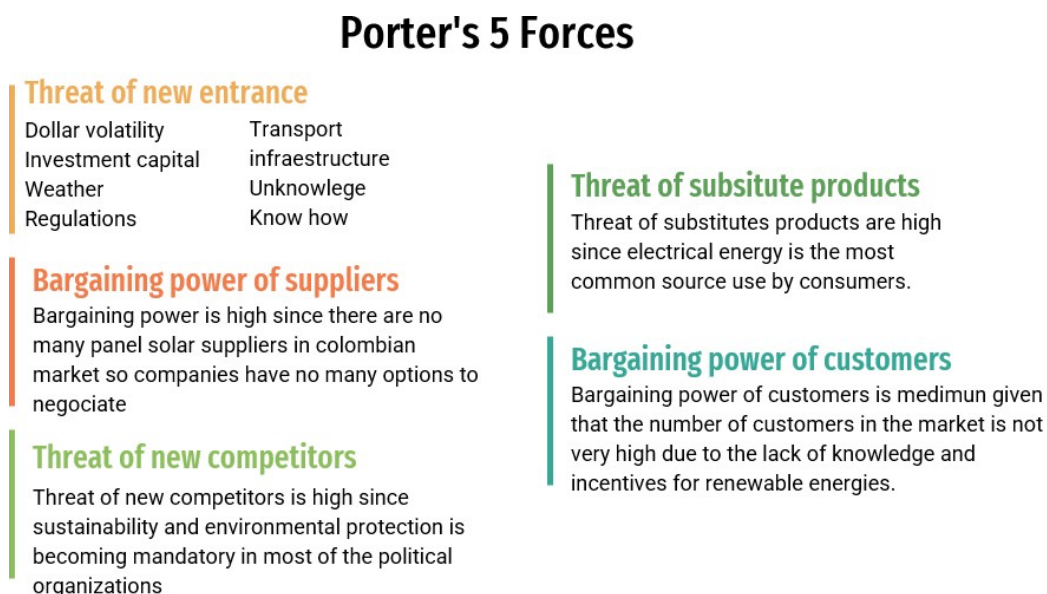
company is not entirely simple; likewise, this procedure is not only given at the beginning, but also in the operation of the company, as well as the respective certification of the projects.

On the other hand, the solar energy market is regulated by the same entities that control the energy market in Colombia, which is why it is necessary to adapt to these regulations either as an operator, generator or marketer, which is reviewed by the Energy Mining Planning Unit (UPME), the Energy and Gas Regulation Commission (CREG), and the certifiers of the Technical Regulation of Electrical Installations (RETIE). For example, the installation of an on grid project (project connected to the grid and focused on savings) is subject to the review of a specific resolution of the CREG, as well as to the approval of the marketer and the grid operator.

5.8.4 *The five forces of Porter (1985)*

Figure 10

Porter's forces



Note. Author's elaboration.

The forces that drive the renewable energy market show that this last, even when growing, is still lacking of exploration and exploitation. Thanks to the rise of sustainability and the importance that both Governments and organizations are giving to protect the environment, the adaptation of friendly systems which reduce the percentage of negative impact generated by the different economic activities is more important.

However, there is still a lack of knowledge and interest in Colombia when it comes to the State implementing public programs of training, education and awareness of the preservation of the environment and clean energy, in addition to the savings and profitability in the investment of these projects. This is why the demand in the market is still very low in the country, as well as the number of competitors.

5.9 Internal analysis

5.9.1 Resources that create value (VRIN)

The following framework offers an idea of how Solare S. A. S. is delivering its value proposition.

- Valuable: the business model focuses on reducing the negative impact on the environment from the use of fossil fuels, offering alternatives like the use of renewable energies.
- Rare: within its competitive advantage, Solare S. A. S. has a cross-selling model, the result of the alliance with Seguridad Nápoles, which promotes the sales of emerging companies belonging to the holding group.
- Inimitable: the company lacks this resource.
- Non-substitutable: the company lacks this resource.

5.10 Value chain analysis

Porter's (1985) value chain theory and model are applicable to both service and product companies. However, there are some small and subtle changes that are convenient to make in order to follow the guidelines of the organization's processes. In his article, Alonso (2008) mentioned:

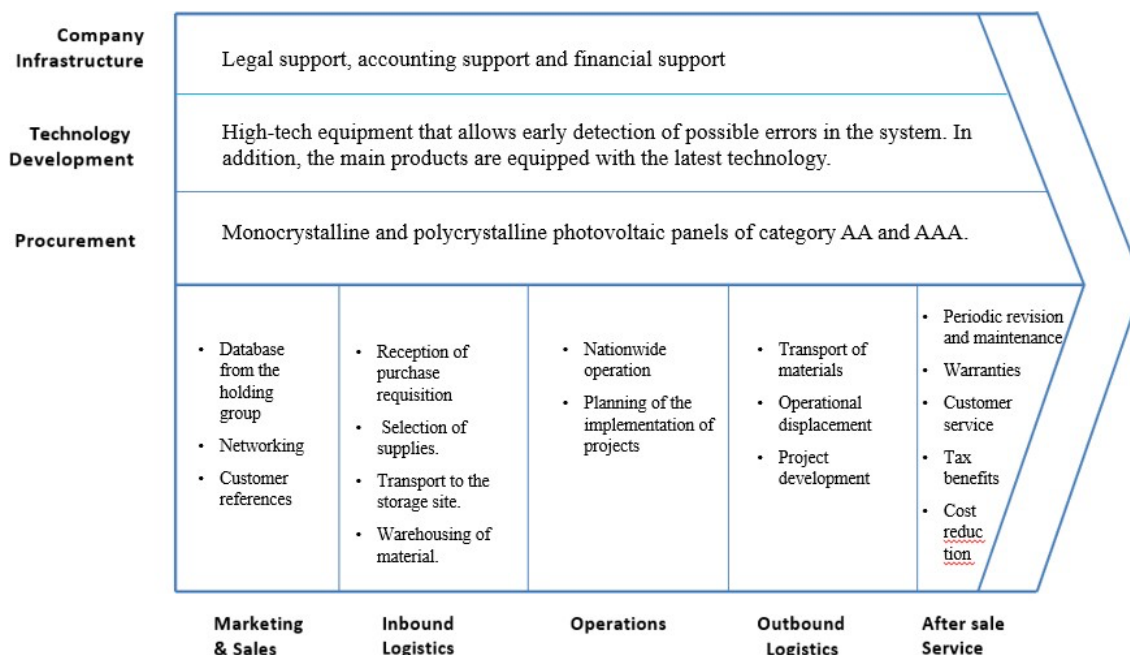
[...] The most important changes that the tool undergoes in its adaptation for its application in service companies lie in the organization of the primary links, which appear absolutely redefined and, at the same time, showing an additional classification in regards to their control possibilities.

For their part, the support links, minimally modified regarding their original proposal, have the function of contributing to the assembly of the scenario in which the provision of the service will take place, ensuring the establishment of the best possible conditions.

(p. 89)

Figure 11

Solare value chain



Note. Author's elaboration.

Being a recently created company, Solare is establishing and identifying the processes that are part of its value chain in order to consolidate the strategies that will direct the growth of the company. Consequently, thanks to what was mentioned by the author, the links to the original model of Porter (1985) were modified, since Solare starts from the search for clients and the relationship with the potential ones. A fundamental part of its value chain is the strategic alliance with the holding group, especially with Seguridad Nápoles, which is the strategy that gives both companies a competitive advantage.

After the clients' interest in Solare's business model, those in charge carry out a technical study to determine the feasibility of the project; and, if it is viable and the client accepts the economic offer, there is a request for the panels with suppliers that have lyfe cycle assessment (LCA) certification, and a transportation company is contracted for shipment by road to the installation site as well. For the approval and completion of the project, it is essential to have the certification of the projects before the different network operators and the Mining Energy

Planning Unit, in addition to the certification issued by the Commission and Regulation of Energy and Gas that certifies the installation of electrical systems.

Finally, the insurance that protects both the project and the equipment is acquired, and continuity is given to the after-sales service that involves the maintenance of the systems, and the application of tax benefits and guarantees. Among the support activities, Solare maintains its economic activity by contracting the services of expert accounting professionals to keep track of the company's financial movements and to carry out the preparation of the financial statements and the income tax return. In the future, the company plans to open a research and development department in order to promote the opening of other business lines and diversify its service portfolio. The primary activities in the value chain are summarized in the following processes:

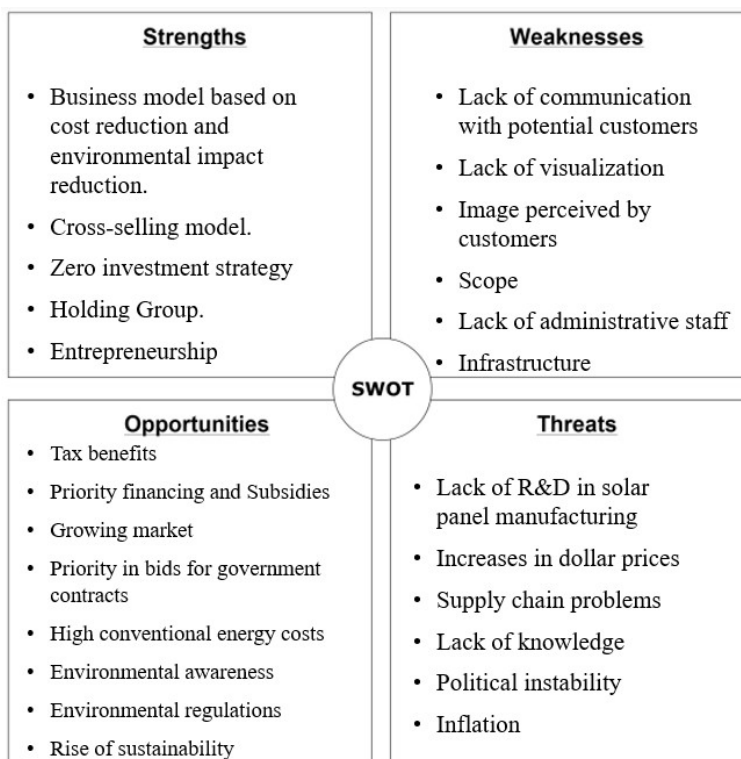
1. Approach: maintain a close relationship with companies or industries that can addvalue, in order to listen to their problems and/or share experiences.
2. Diagnosis: process of collecting information and developing the pre-analysis based on technical visits, meetings with staff, review of indicators and/or documents, installation of equipment, among others.
3. Negotiation: in this phase, the economic proposal is defined with scope and requirements, times, budgets and financing mechanisms.
4. Information analysis: identify the root cause of the problem through the use of computational, statistical, economic, and cause-effect tools, among others. Customer deliverables are generated.
5. Mitigation and innovation: provide tools and/or develop action plans that contribute to the reduction or eradication of the root cause. The mechanisms or solutions may be provided by us, the client or third party providers.

5.11 SWOT analysis

The company business model, its economic activity and the growing market in Colombia are the main factors that offer the organization an opportunity for market penetration and expansion. On the other hand, the lack of visualization and solidity in its infrastructure, and external threats such as the little training in environmental matters are determining factors that can affect the company's growth.

Figure 12

SWOT analysis



Note. Author's elaboration.

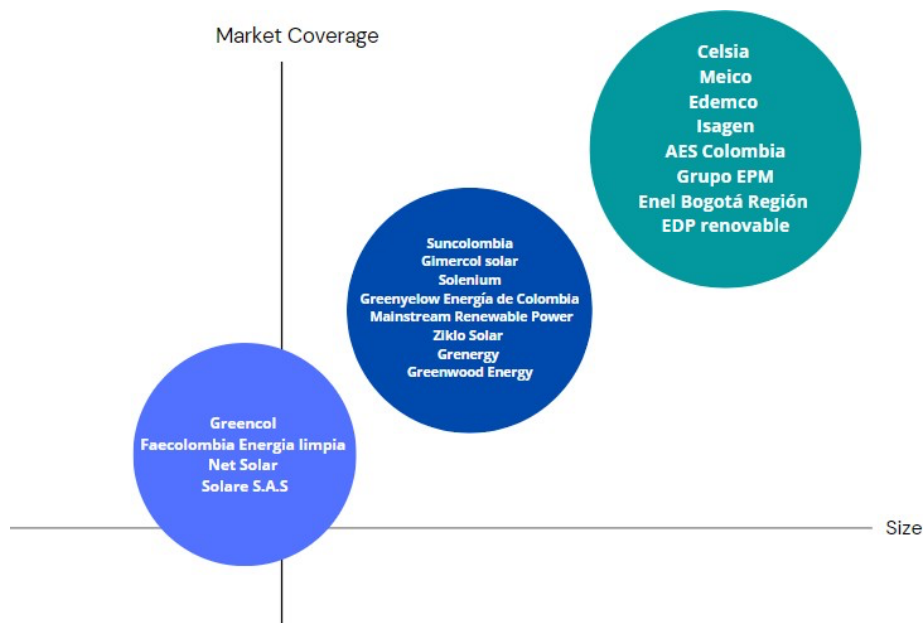
5.12 Competition

The solar energy market is essentially led by 12 companies, including Celsia, which belongs to Grupo Argos; the Canadian company Canadian Solar; and the multinational providers and distributors of conventional energy, like Enel and EPM, who created companies dedicated to the generation of clean energy as part of its commitment to comply with the United Nations 2030 Agenda for Sustainable Development. Thanks to the high investment, the track record and the support of the business groups in these companies, the brands today position themselves as the leaders in the market. These aim to create new photovoltaic solar parks in alliance with the Government to meet its established goal of reaching 4000 MW of installed capacity.

Solare S. A. S., for its part, is among the smallest companies in the market, along with one of its strategic allies, which has been in the market for seven years, and which differentiates itself from the competition by offering its installation services at much lower prices.

Figure 13

Strategy group map



Note. Author's elaboration.

5.13 Social and environmental performance

The Nápoles business group, in response to its commitment to vulnerable communities in Colombia, has developed a strategy that seeks to benefit populations living in poverty, having Solare S. A. S. as its main ally. The purpose of the “Energiza la vida” project is to bring energy to non-interconnected areas of Colombia, such as the rural area of Cunday, a municipality located in the southeast of the department of Tolima, which, along with the villages that make it up, have been affected by the problems of energy characteristic of this area.

In this case, the solar electrification of the area will have as an essential and social component the training and education of young farmers who want to learn the business of installing EPC renewable energies. With this, it is sought that the citizen participation of the municipality be active, generating employment and occupation among the peasants. This way, people who have least been able to participate actively in the training can also be part of this project, being integrated into the Annual Maintenance Plan.

6 Case study results

Throughout its history in the market, Solare has proven to be a company committed to being an agent of change and contributing hand in hand with the country's productive sector in the transformation towards the path of sustainability. Despite its short stay, thanks to the support of the business group, it has managed to penetrate the market, especially commercial, offering an innovative business model that seeks the benefit of the parties involved in the negotiations of the Nápoles group, that is, the communities, customers, shareholders, and Solare itself. For this reason, the financial balance of the previous year reflects that the company is able to solve itself, to meet its financial obligations, and to generate a profit for the year.

To analyze Solare's sustainability, we will analyze its performance in each of the factors that make up the Triple Bottom Line, that is, its impact on the economic, social and environmental aspects.

6.1 Economic aspect

Strategy is the decision-making process that a company goes through to guide the planning of the direction it wants to go and that will lead to the fulfillment of its economic goals. In order to evaluate the orientation that Solare has taken to achieve its economic growth in the short and medium terms, a strategic analysis of its business model and its value chain was carried out; this way, it is possible to have an x-ray that indicates whether the decisions made to this date have given a solid base to achieve the positioning of your brand.

In the first place, it is evident that the highest percentage of clients and the potential ones comes from their relationship with the aforementioned holding group and, therefore, their income depends mostly on the leverage and support offered by companies in the implementation

of their services. It should be noted that the company has done a good job in terms of diversifying its portfolio of services, offering, in addition to panel installation and maintenance, consulting and advisory services, and certification of energy assets. Likewise, it has been set as a future goal to have the operational and financial capacities, and the know-how to be suppliers of efficient energy from water and wind.

Its competitive advantage is not a sustainable advantage, on the contrary, it is temporary, since it is valuable for its contribution to energy efficiency and rare for its zero investment modality, but within its value chain there are no attributes that make it difficult to imitate, since a company with the same corporate purpose can offer more profitable conditions to the business group and it may withdraw from the alliance. In addition, its services and products are susceptible to changes or replacement by other types of clean energy. However, its valuable resource, that is, its contribution towards meeting the goals in the 2030 Agenda for Sustainable Development, and the support of the business group have been the main protagonists of the success that Solare has had so far.

The threats and opportunities of the environment are determining factors in Solare's positioning, since, as the market is in a stage of expansion, there are many strong competitors that, being in the phase of rapid growth within the product's life cycle, have the opportunity to take a large portion of the market by taking long-term contracts, as the Government has arranged with dependent entities. Likewise, the market has marked a before and after in recent years due to the problems it has faced thanks to the pandemic and the global economic contraction that have left important challenges in terms of the increase in the prices of raw materials, including glass, polysilicon and silver. This makes the purchase and manufacture of solar panels more expensive, thus causing a reduction in the consumption of such products. Another important

external factor is the uncertainty that the country is going through thanks to the change of Government that may lead to changes in the tax reform that directly impact the profitability of renewable energy companies.

The company, being aware of the threats of the environment, must focus on the opportunities presented by the market, such as the need of different organizations and agencies to reduce the generation of CO2 from their activities, the tax benefits granted to green companies, the different laws that promote the growth of enterprises, the financing and leverage from banks to companies that promote clean energy, among others.

6.2 Social aspect

It is common for ventures in their initial stage to provide services through service contracts, that is, the company is not obliged to pay social benefits and, unlike the direct contract, natural or legal persons agree on delivery times and payment methods. Solare does not have welfare, social inclusion or similar programs that seek to promote a decent work environment; this, due to the fact that, instead of hiring personnel by payroll, they directly hire the essential services for their operation: accounting, legal aspects, financial advice, service facilities, transportation, etc. This way they manage to reduce their costs and make their income more efficient.

Solare's board of directors is made up of its two partners, Andrés López and Giovanny Díaz. The latter is the company's legal representative. Within its board of directors and the company's workforce itself, important dimensions, such as diversity and inclusion, are not evident; this is because the company has not carried out a materiality analysis, has not clearly identified its stakeholders, and does not know the needs of the variables that are part of its environment.

Solare, through the “Energiza la Vida” project, supports vulnerable communities in the municipality of Cunday by bringing energy to the villages and non-interconnected areas. This way, the company gives its contribution to the generation of a positive impact in favor of social welfare. However, the company has not provided a corporate responsibility report, nor has it made use of social networks or web pages to inform its clients of its commitment to society, its impacts, or future projects that pursue this same goal.

6.3 Enviromental aspect

Solare's environmental performance has been very positive due to its efforts to reduce GHG emissions and to encourage the consumption of clean energy with strategies such as zero investment, which, as explained above, is a model that allows organizations to acquire solar energy systems without the investment of own resources.

An important aspect within the company's value chain is that they work with suppliers that have LCA certification, which ensures the company that it acquires panels designed so that the reduction of carbon emissions prevails within its production chain, its use and its final disposal stage. This means that Solare not only seeks to be sustainable through its main activity in the installation service, but also realizes the origin of its products.

Despite this, the analysis of the value chain shows that there are other links in the chain where their activity continues to generate GHG emissions, such as the transportation of the panels, which is done through a conventional transport company, that is, their vehicles are not hybrids, but gasoline; and it is carried out every time a contract is closed, which means that the transportation company makes a number of journeys per project. This is undoubtedly a factor that affects the emblem of the company, which is the reduction of the negative impact on the environment. Another element to take into account is the air and land travel made by commercials

to visit, install or offer a proposal to their potential customers.

As has been well exposed in this document, the renewable energy market in Colombia is growing, even so, the disinformation of the Colombian population in this regard is still very great. To mitigate this problem, Solare has the objective of training people belonging to the rural area of Cunday, in order to make an efficient use of solar installations, as well as participating in its implementation.

7 Practical recommendations

The recommendations will be based on what is observed in the results of the case study. In that order, the suggestions will be presented according to the economic, social and environmental aspects, starting from the base of the strategy, which is essential in a company for its expansion, positioning and penetration in the market. As Miller (2020) stated:

In a capitalist economy, a firm's success most heavily depends on its financial performance, or the profit it generates for shareholders. Strategic planning initiatives and key business decisions are generally carefully designed to maximize profits while reducing costs and mitigating risk. (par. 7)

Then, the practical recommendations for the company Solare S. A. S. are presented below in order for them to achieve a sustainable value chain.

7.1 Strategic recommendations

In the first instance, the company must rethink its business model in order to create sustainable value and comply with the VRIN strategic resources. For this, it is necessary for the company to carry out an External Factor Evaluation (EFE) matrix and an Internal Factor Evaluation (IFI) in a more thorough, specialized and focused manner, with all the information available for its realization. In addition, you can use the Kano model to manage the quality of your service and the satisfaction of your customers, as shown in Figure 14.

Figure 14*Kano model source**Note.* Author's elaboration.

The reformulation of the mission and vision is also necessary, as well as its evaluation through the evaluation matrix of the mission and vision. Figure 15 proposes a model to evaluate the mission and vision and a guide of the components that they must have to be viable.

Figure 15*Evaluation matrix of the mission*

FACTORS		YES	NO	PARTIALLY
1	Customers	x		
2	Products or services	x		
3	Geographic scope		x	
4	Technology	x		
5	Survival, growth and profitability		x	
6	Philosophy			x
7	Self-concept	x		
8	Concern for public image		x	
9	Reconciling effectiveness	x		
10	Inspiring quality		x	

Note. Author's elaboration.

A skill matrix and competency mapping is important to see what position Solare S. A. S. has against its competition group and what its strengths and weaknesses are against the market. Based on the analysis of the industry, the company must identify in which stage of the product life cycle curve it is. Crossing the Chasm theory says that over time many companies have failed because their strategies do not align with the stage they are in and that is why they have a hard time crossing the chasm which subsequently leads to the stage that offers greater stability and positioning to the product: the Main Stream Stage.

One of the necessary tools to cross the chasm and that helps the company to position itself in the market is marketing. The absence of this element has represented for Solare a lack of visibility of the brand, that is to say that the clients do not have the company in mind after hiring their services, they do not reach potential clients, and there is no recognition of their brand in the market. Marketing is crucial for the company to attract new customers in another way and not depend solely on its strategic alliance with the business group. For this the company must:

- Establish marketing plans that involve the implementation of STP strategies (segmentation, target, positioning) for which it is essential to have a market focus, for which it is necessary to perform a segmentation analysis.
- Develop commercial communication strategies through speeches, visual media (ppts), brochures, hot sales, sales-oriented plans depending on the segmentation previously carried out, among others.
- Create an interactive web page where interested people can request a quote according to their needs, buy products, acquire advisory services, publish news, informative and interactive blogs, have access to all the information about the company: who we are, purpose, Solare sustainable, products, services, etc. The page must be promoted from

tools such as Google Ads and Google Analytics to position itself within the search engines, the guideline can be done organically or inorganically.

- Implementation of inbound marketing strategies that seek to strengthen the relationship between the company and the consumer and the entire ecosystem that surrounds it, through the creation of valuable content such as informative courses so that clients, in addition to being interested in the projects, are trained in renewable energy issues.
- Make use of social networks LinkedIn, Instagram, Facebook and Tiktok to publicize your brand; share projects you have completed; share information related to the industry; give information about your services; and have a closer interaction with your customers.
- Transparency is a factor that improves the experience of consumers with the company, since it fosters trust, for this reason Solare must develop reports that inform clients and consumers about the company's good practices.
- Participate in events associated with the industry, such as fairs, forums, conventions, conferences held by associations, among others. One of the most important non-profit associations in the industry is SER Colombia, where more than 70 local and global companies meet to contribute their expertise and knowledge in the field of renewable energies. Other activities related to conventional marketing are carried out by local organizations such as Corferias that sponsor industrial fairs at a national level with the aim of attracting new clients, visualization and networking.
- Strengthen its after-sales services to set a differential standard in terms of quality of service and relationship marketing in order to generate sales from the recommendations of its customers (Word of Mouth).
- Loyalty programs so that current clients continue contracting services such as

maintenance and consultancies.

- Implementation of benchmarking strategies so that the company is updated on the tactics adapted by its competition and based on this make future decisions.

Finally, it is suggested to make a TOWs matrix like the one shown in Table 2, where possible strategies that the company can adopt in order to position itself in the market are observed. The strategies proposed for the company are:

- Vertical integration where the company can manufacture and distribute its own solar panels.
- Market penetration to seek to obtain greater market share for current services in new segments.
- Market development to introduce services present in different segments.
- Product development where the company can improve or elaborate products or services to keep them in the same market, such as other types of renewable energies such as wind and hydro, as well as exploring other types of energy generation such as biogas.
- Strategic alliances with companies in the sector and other companies such as green finance funds. With this last alliance, the company is protected in case Seguridad Nápoles cannot finance its projects.

Table 2*TOWS matrix for Solare S. A. S.*

	External Opportunities (O)	External Threats (T)
Internal Strengths (S)	SO	ST
Internal Weaknesses (W)	In the early stage in which the company finds itself, it should apply market penetration strategies, making its presence stronger in the platforms provided by the state for public procurement. It should take advantage of the competitive advantage of its corporate purpose and the size of its company to gain market share.	The company can implement vertical integration strategies in the long term to avoid threats such as the increase in the value of panels due to the volatility of the dollar. With this strategy, it can also contribute to research and development.
	WO	WT
	The company must improve its communication channels with customers in terms of visualization and transparency. In this way it can show the projects carried out, the strategies proposed and initiatives in favor of communities and ecosystems.	It is of vital importance that the company makes known the projects in which it has participated, the strategies it has implemented to contribute to social and environmental development, and that it makes its clients aware of its growth in the market. It can also create awareness strategies that allow it to have flexibility in the market.

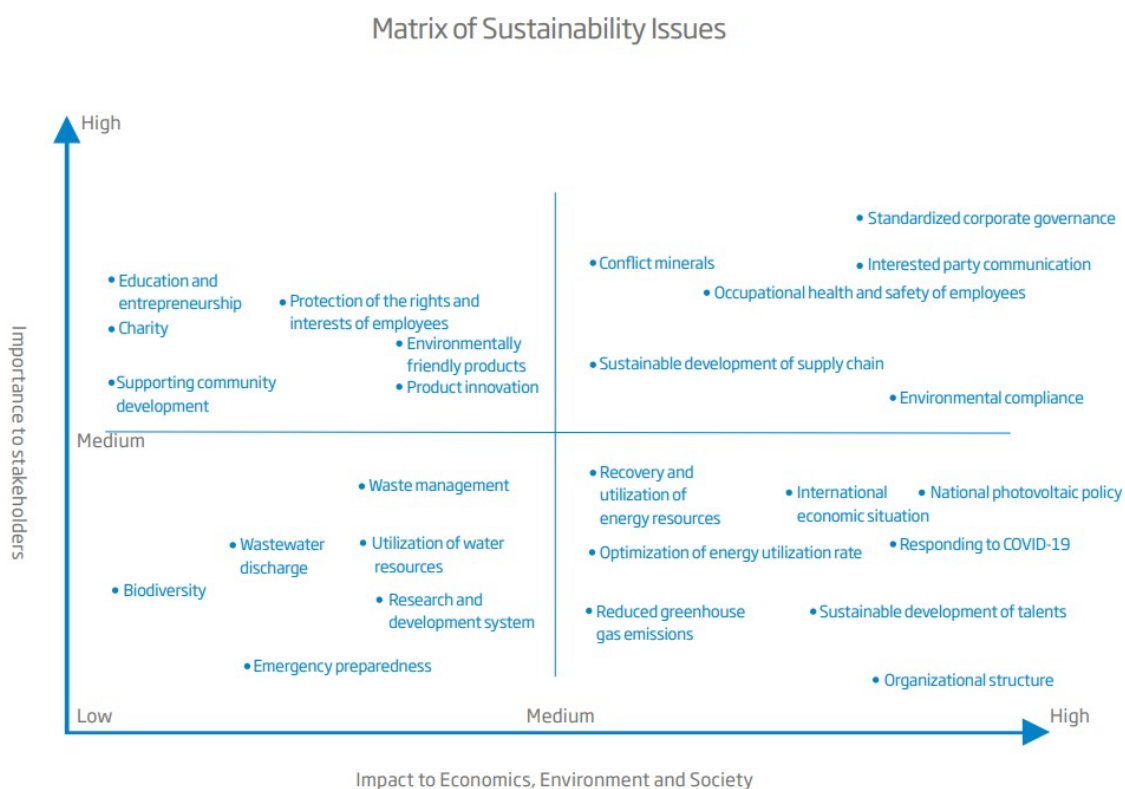
Note. Author's elaboration.

7.2 Recommendations on the value chain

Solare is recommended to carry out a materiality assessment on its company in order to match its strategic decisions with the issues of the industry and with the importance that stakeholders give it. Now, it is essential that the company first defines who its stakeholders are, what their issues are, and what power the stakeholders have over them. Figure 16 shows an example of the materiality map made by the company Trina Solar.

Figure 16

Triana's materiality map



Note. Taken from Corporate social responsibility report, by Trina Solar, 2020, p. 13.

The implementation of Key Performance Indicators (KPIs) will allow the company to

propose intelligent and efficient action plans based on the measurements on each issue and give direction to achieve the objectives that are set with a time limit. The company is recommended to carry out a life cycle assessment on the value chain of its service, to identify the processes that are polluting, from the extraction of the raw material to its final disposal.

The integration of the two previous points will allow the company to optimize its processes within the value chain and also to apply good practice principles that contribute to the well-being of the environment and people.

One suggestion is to integrate green logistics processes such as the transportation of solar panels, the mobility of the commercial and operational area, and the final management of waste. The reduction of carbon emissions through transport can be done through the supply of solar panels projecting future demand, which allows reducing the number of journeys. It is also suggested that the company hire transport companies that certify their vehicles with the reduction in the generation of GHG emissions.

When it comes to travel, the company must reduce the number of trips by scheduling meetings virtually and, if necessary, it is recommended to hire an airline that issues carbon credits for each trip made. On the other hand, Solare should consider implementing reuse, reduce and recycle practices to reduce the impact on final disposal. This way the panels that are damaged can be collected by the company and reused for a future project.

7.3 Recommendations for the scope of compliance with the SDGs

According to the research carried out and exposed in the literature review, the vast majority of companies demonstrate their environmental commitment by generating either a contribution or an action plan in the preservation of local ecosystems. Therefore it is recommended that Solare, through strategic alliances, makes a contribution to preserve the

ecosystems of the areas that are currently working, such as Cunday.

An external opportunity that must be taken advantage of by the company is the benefit that the Government gives to companies that in their share distribution have women with the highest percentage of participation, not without mentioning that the Government benefits all those companies that have staff disabled and even more so when it comes to entrepreneurship. The benefits offered by the Government are not only considered at a financial level, that is, banks and investment funds give them priority and greater access to credit lines, but they also have an important advantage in contracting with the State. To summarize, it is important for the company to add ingredients of diversity and inclusion.

Certifications provide the necessary guidelines for a company to meet the necessary requirements to guarantee good practices in social and environmental terms, it is also a critical point that gives consumers confidence since they are supported by regulatory bodies within the local legal framework.

Solare is encouraged to acquire certifications that demonstrate its commitment to furthering its positive impact. Such certifications include:

- ISO 14001 certification, which is an international standard that protects the environment through the management of environmental risks associated with the company's economic activity.
- BCorp is a certification granted to companies with the highest environmental, transparency, social and legal standards. The company undergoes an evaluation called B Impact Assessment, and according to the score obtained in the evaluated dimensions (business model, community, environment, governance and employees), the certification will be granted.

- The Fairtrade International is a certification that promotes labor dignity, that is, it certifies that companies have good practices in terms of wages and fair working conditions. Likewise, it seeks to ensure that the company has fair negotiations with suppliers that meet these same requirements. The certification is given by a non-profit organization called Fairtrade International, and the compliance with the standards is audited by FLOCERT, a certifying body created by the organization.
- Climate Neutral is a certification granted to companies that, through measurement and action plans, verify the reduction of carbon emissions derived from their activity.
- Rainforest Alliance Certified is given to companies that comply with the three pillars of sustainability, and that, through their activities, ensure the conservation of forests and natural resources.

The CSR reports are a tool that promotes transparency in the company's processes and generates trust in customers. Despite its short time in the market, it is convenient for the company to adopt these practices, since they not only offer the consumer an idea about the efforts that the company is making to cover issues of generating a positive impact on people, the economy and the environment; but also help the company have discipline for the approach of objectives, measurements and action plans, that is, the company enters into a constant PDCA (plan-do-check-act), allowing to have a diagnosis of the company to know what is being done well and what is not in front of the needs of the market.

Finally, the most valuable resource and strategy for Solare is to join the call to action made by the United Nations through the approach of the 17 SDGs. Solare, then, must review how it is contributing to each of the SDGs and how it is adding value to society and the environment.

Next, Figure 17 presents the proposal to Solare S. A. S. as they currently obey, according

to the information provided, the contribution of each of their activities for compliance with the SDGs.


Figure 17

Solare's commitment with SDGs



Note. Author's elaboration.

Figure 18*Solare compliance report with SDGs*

<p>1 NO POVERTY</p>  <p>As a further step in the fight against poverty, Solare proposes a model for the generation of organic employment in rural areas where it carries out electrical interventions, so that it can employ local labor and thus minimize the impact of unemployment in the region, increasing consumption and development in these areas.</p>	<p>3 GOOD HEALTH AND WELL-BEING</p>  <p>By reducing carbon dioxide emissions, Solare participates in achieving this UN sustainable development goal and is a clear participant in the reduction per ton of carbon dioxide emissions. This, as a result of reducing CO₂ emissions, will make the environment more conducive to habitability.</p>	<p>4 QUALITY EDUCATION</p>  <p>In line with the first sustainable development objective, not only will there be a local employment plan, but also training in the installation and maintenance of solar photovoltaic systems, which is also being done in partnership with SENA). In this sense, it will make those who learn about these market trends much more competitive in the labor market.</p>
<p>7 AFFORDABLE AND CLEAN ENERGY</p>  <p>The energy that a solar panel receives from the sun, is converted by a micro-inverter (or inverter), to alternating Flow energy, which can supply energy to the network of a house, business, hospital, hotel, shopping center, etc. In this way, the consumption of energy produced by burning fossil fuels is discouraged.</p>	<p>8 DECENT WORK AND ECONOMIC GROWTH</p>  <p>Current trends in the labor market are influenced by the demand for new or old products and services, indispensable or dispensable and this is why high-profile resumes are required. All these variables make the renewable energy market (a relatively new indispensable service) completely attractive to become a part of, so Solare is considered an interesting employer</p>	<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>  <p>Solare is projected as a major solar panel manufacturer in the region, investing in research and development to innovate internal processes, and thus offer better quality modules at a lower price, taking advantage of the early age of the market in Latin America.</p>

11 SUSTAINABLE CITIES AND COMMUNITIES



Today, the development of a society can be measured by the amount of energy demanded, as well as its supply. In this sense, the current marginal costs of energy are fixed according to the most expensive form of production, so increasing the supply of energy in the region through non-conventional sources of generation is an opportunity for the country and for Solare.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Along the same lines as the previous sustainable development objective, it is proposed that the greater the demand for energy, the greater its consumption will be, and therefore the supply must be able to provide enough to meet that demand. The key is that the supply of that energy is given by non-polluting generators and thus be responsible within the energy market and comply with the Paris agreements.

13 CLIMATE ACTION



By reducing the amount of carbon dioxide emissions, the heat concentrated on planet Earth can be released, since its atmosphere will no longer have a layer of CO2 to prevent this heat from escaping, so that the average temperature of the planet can be regulated naturally.

17 PARTNERSHIPS FOR THE GOALS



Solare is developing strategic alliances with state entities such as Bancoldex, the Mining and Energy Planning Unit (UPME), or Finnagro, to finance projects of this matter. Likewise, it has also made alliances with private sector companies to obtain new clients for both parties, making it much more attractive and profitable.



SOLARE
SUSTAINABLE
DEVELOPMENT
GOALS



Note. Author's elaboration.

8 Limitations and future directions

Given the political panorama that the country is going through, a priori we can presume that the new Government will promote the renewable energy sector through tax and fiscal measures. However, within the tax reform, measures are established such as a double income tax for legal entities, which means that companies will greatly reduce their investments in non-current assets that may represent more than 1% of their operational profit, this implies a reduction in the investment appetite of the sector of non-conventional sources of renewable energy generation. In order to do so, associations such as ACOSOL or the National Association of Industrialists (ANDI) have proposed an increase in tax exemptions for entrepreneurs who allocate resources for this type of energy generation.

On the other hand, there has been evidence of a global shortage of glass that has spliced with various vicissitudes such as the lags left by the pandemic, the container crisis and the current global recession, the sociopolitical instability of several countries with large reserves lithium and silicon (main metalloid compounds for on and off grid projects).

All these factors that play against each other have caused an increase in the unit marginal costs of the main parts of photovoltaic solar systems, understood as solar modules, inverters and batteries. Likewise, one of these main factors (socio-political instability) has caused greater regulations in the Ministry of Mines and Energy, which promptly and untimely announces that it will assume the functions of the Commission for the Regulation of Energy and Gas (CREG). The result of this intervention will be reflected in the devaluation of the price of energy in the market; the immediate effect on the solar market will be a loss of appetite for solar power generators to sell the watt to network marketers as supply; installation and energization costs will stay the same and rise; while the price per watt sold will be less, making it difficult to recover in lesstime.

In conclusion, the solar energy market in Colombia will go through difficulties within the regulatory regulations, the fiscal framework and the geopolitical and economic situation worldwide, such as those expressed above.

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10 Appendices

Appendix A. Solare CEO interview

- Good morning Mr. Lopez and thank you for giving a little bit of your time to this interview. First I would like to congratulate your courage to create a company from the scratch and to make it success. We would like to know more about your company, so can you tell us a little bit about what is Solare S.A.S
 - ✓ Thank you Angelica for that amazing greeting, it's a pleasure for me to take about my company. Along with my partner Giovanni Diaz, we wanted to create a company that deliver value to society and the entorno en el Que vivimos, and from almost to year now, we saw an opportunity in the renewable energies, despite the fact we are currently only working with solar energy, we want to also (aportar) with other kind of energies like wind and hydro, that is why we played with the colors of our logo, to represent also those energies.
- Can you tell, what is the position you have in Solare.
 - ✓ I'm the CCO of the company and one of the shareholders. Me and my partner Giovanni Diaz are the owners of Solare.
- What services offer your company? Are you a service company or a good company?
 - ✓ We are a service company since we work as an EPC which means that we design, we supply and install the project. Other than that, we have a sale model that we call zero investment which means that we facilitate financial solutions to our clients for them to have access to the projects. Also, we sale some equipments that are required to the installation and good performance of the system

- Which is your business model?
- We are a strategic ally of Seguridad Napoles, together we deliver value through the awareness of offering people an environment a hope of development and positive impact. Nápoles and the other companies have the clients data base, and thorough a cross selling they offer our services to their clients and finance the projects for the client to have an added value of zero investment.

In this sense we are promoting organizations to adopt good environmental practices to decrease their consumption of fossil energies.

We also offer advisory services in terms of electric efficiency and energy efficiency. And install directly solar panels to other clients (obtenidos -atrapados) by the commercial (gestión) of the company.

- What makes you different from the other solar companies?
 - ✓ First able, we are delivering value by taking care of the environment and raising awareness to the organizations of the importance of reducing GHG emissions. Secondly, we have this alliance with one of the most important security companies in the industry, which help us to have a bigger scope to deliver our value. No other solar energy company in Colombia has this business model.
- Can you tell me, what is the process the company follows in its value chain?
 - ✓ First, we make a very extensive commercial work, when we get a client's attention we go into the next step which is to make a technical visit to analyze what exactly are the needs of our client and to evaluate the viability of the project. Once the project is approved, we sign contracts, get insurance and the next step is to call our supplier to deliver to us or directly to the client the solar panels, and we

proceed to the installation. Finally, we need to get certain certificates that support the quality of the project with entities like CREG and after comes the maintenance of the equipment according of the times agreed in the contracts.

- Can you tell me about your suppliers?
 - ✓ Our main supplier is Trina Solar. We decided to work with this company not only because it is in an international level, but mostly because they have a quality and environmental certificate which matches with our principles and values and makes us feel confident that we are offering our customers a fair and quality service.
- What are you doing to communicate with your clients?
 - ✓ Currently we don't have any communication channel. We only communicate with them through phone calls, and we use WhatsApp.
- Do you have employees in you company?
 - ✓ No, we don't. We only have people working with through service contracts
- Have your company participated on a social project?

We are currently working hand in hand with Seguridad Nápoles, one of our allied companies within the Nápoles business group; creating a project to bring energy to the interconnected areas of Cunday and its nearby villages, we also want to involve the community to work within the installation of these projects and train them for proper maintenance.

Thank you so much Mr. Lopez for your time, I really appreciate the opportunity to get to know better Solare S.A.S which I'm sure that is a company that will leave a positive mark on the world.

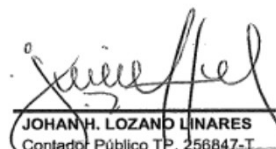
Appendix B. Solare balance sheet

SOLARE S.A.S.
NIT 901.451.263-3
ESTADO DE LA SITUACION FINANCIERA
A Diciembre 31 del 2021
Cifras expresadas en pesos colombianos

<u>ACTIVO</u>	NOTA	2.021
<u>Activo Corriente</u>		
Efectivo y equivalentes al efectivo	3	18.311.267
Inversiones en asociadas	4	48.510
Cuentas por Cobrar	5	23.769.086
Inventarios	6	5.050.879
Activos Intangibles	7	46.500
Total Activo Corriente		47.226.242
<u>Activo No Corriente</u>		
Propiedad Planta y Equipo		
Equipo de Oficina	8	1.739.800
Depreciación Acumulada	8	86.990
Total Activo No Corriente		1.652.810
TOTAL ACTIVO		48.879.052
<u>PASIVO</u>		
<u>Pasivo Corriente</u>		
Deudas con accionistas o socios	9	9.000.000
Cuentas por pagar	10	3.438.937
Pasivo por impuestos corrientes	11	136.436
Total Pasivo Corriente		12.575.372
TOTAL PASIVO		12.575.372
<u>PATRIMONIO</u>		
Capital	12	36.000.000
Reserva Obligatoria	12	44.012
Resultados del Ejercicio	12	259.668
TOTAL PATRIMONIO		36.303.679
TOTAL PASIVO Y PATRIMONIO		48.879.052



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Appendix C. Oath of personal work**OATH OF PERSONAL WORK**

I undersigned, Angelica Lopez Diaz, declare that the following graduating project is my own work. No part of this research has been submitted in the past for publication or degree purposes. I am fully responsible for the truthfulness of this declaration.

Date: October/2022

Angelica Lopez Diaz

Appendix D. Confidentiality agreement**CONFIDENTIALLY AGREEMENT OF GRADUATING PROJECT****Family name:** Lopez Diaz**First Name:** Angelica**Program attended at RENNES School of Business:** MSc in Sustainable Management & Eco-Innovation**Title of the graduating project:** How to make a service company become sustainable in Colombia. A study case of Solare S. A. S.**Date of submission:** October 31st/2022**Appendices** **YES** ☒ **NO** ☐**Confidentiality** **YES** ☒ **duration:** **NO** ☐**Comments:** No comments required