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Greenvolt's IPO

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A OPI da *Greenvolt*

RESUMO

Nos últimos anos, tem ocorrido uma notável tendência global rumo ao uso de práticas sustentáveis e escolhas de energia verde. Recentemente, a guerra na Ucrânia e a crise resultante no fornecimento de gás em toda a Europa colocaram mais pressão sobre a União Europeia para garantir um fornecimento viável de gás sem depender da Rússia. O objetivo final dos países europeus é ter as suas próprias fontes de energia, idealmente verdes. Estas circunstâncias colocaram em destaque empresas capazes de fornecer uma resposta verde face à necessidade de energia. A *Greenvolt* é o maior representante português neste cenário e tem despertado um interesse crescente dos média e dos investidores, assim como algumas empresas estrangeiras similares. Como resultado, os principais atores desse setor têm obtido bom desempenho nos mercados financeiros, sendo considerados uma aposta segura para o futuro. O objetivo desta dissertação é analisar a *Greenvolt*, a sua OPI e o seu posterior desempenho financeiro nos mercados. Quatro objetivos interligados são estabelecidos para esta dissertação, que serão abordadas sucessivamente: estudar os conceitos de OPI e OPI Verde; estudar a *Greenvolt* e o seu caminho até ao ponto em que a OPI foi lançada, bem como o processo da OPI e o seu estado atual; analisar as semelhanças com as OPIs de outras empresas sustentáveis e avaliar o desempenho financeiro nos mercados antes e depois da OPI; por fim, ser capaz de prever a evolução do crescimento e lucro da empresa.

Palavras-Chave: Energias Renováveis, *Greenvolt*, OPI (Oferta Pública Inicial), Sustentabilidade

JEL Classification: G30; G32

Greenvolt's IPO

ABSTRACT

In recent years, a noticeable global trend toward the usage of sustainable practices and green energy choices has occurred. Lately the war on Ukraine and the resultant crisis on the supply of gas throughout Europe has put more pressure on the European Union to guarantee a reliable supply of gas without being dependant in Russia. The ultimate goal of the European countries is to have their own sources of energy, ideally green ones. These circumstances put companies that can provide a green answer to the energy necessity on the spotlight. Greenvolt is the biggest Portuguese figure of this event, and it has had growing media and investor interest as some similar foreign companies. Consequently, particularly the big players of this sector have been performing greatly on the financial markets as they are considered a reliable bet for the future. The aim of this dissertation is to analyse Greenvolt, its IPO and its posterior financial performance on the markets. Four interconnected goals are established for this dissertation, which will be addressed successively, to study the concepts of IPO and Green IPO; to study Greenvolt and its path to the point where the IPO was released as well as the IPO process and current state; to analyse the similarities to other Green companies' IPOs and evaluate the financial performance in the financial markets before and after the IPO; lastly to be able to forecast the evolution on the company's growth and profit.

Keywords: IPO (Initial Public Offering), Greenvolt, Renewable Energy, Sustainability

JEL Classification: G30; G32

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MAIN ABBREVIATIONS USED

CEO - Chief Executive Officer

EBITDA - Earnings before Interest, Taxes, Depreciation, and Amortization

EDP - *Energias de Portugal*

FY - Fiscal Year

GW - Gigawatt

IPO - Initial Public Offering

Nasdaq - National Association of Securities Dealers Automated Quotation System

NOK - Norwegian Krone

OPI – *Oferta Pública Inicial*

PV - Photovoltaic

PSI 20 - Portuguese Stock Index 20

SEO - Sustainable Energy One

SEK - Swedish Krona

UNFCCC - United Nations Framework Convention on Climate

UK - United Kingdom

US - United States (of America)

CHAPTER 1

INTRODUCTION

According to the 2015 Paris Agreement within the United Nations Framework Convention on Climate (UNFCCC), a consensus was made to overcome the environmental issues through financing mitigation and adaptation to climate change and sustainability (Mumtaz & Yoshino, 2021).

Among the growing global emphasis on sustainable practices and green energy alternatives, on July 15, 2021, Greenvolt, a Portuguese sustainable energy company took a big step by going public. The significance of Greenvolt's Initial Public Offering and the circumstances surrounding it are examined in this dissertation.

In 2021, during the world's recovery from the COVID-19 crisis, Greenvolt reinforced its dedication to fostering sustainable energy solutions across Europe. The company's decision to go public demonstrated optimism and exemplified resiliency in the face of challenging circumstances.

The decision to go public during a difficult period revealed Greenvolt's determination to actively contribute to the green energy revolution as well as the firm's long-term objectives. One of the key events of 2022, was the beginning of the war in Ukraine. Political tensions and uncertainty had an impact on the world economy leading to businesses and investors to face setbacks. Despite this, Greenvolt recovered within the same year, as it presented an attractive investment opportunity for the future.

The dissertation is structured into five sections after this chapter, each delving into distinct facets of Greenvolt's IPO. Chapter 2 entails an in-depth examination of the fundamental concepts of IPO and Green IPO, carefully supported by a comprehensive literature review. Various scientific articles spanning from the 1980s to 2021 were analysed, enabling a panoramic understanding of these concepts and an enhancement of knowledge in the field.

The third Chapter of the dissertation provides a comprehensive overview of Greenvolt, elucidating its genesis, core activities, and noteworthy competitors. A detailed analysis of its financial performance is thoroughly presented, shedding light on the factors that ultimately propelled Greenvolt's journey towards its landmark IPO. The various

stages of the IPO process, as well as its actors, from its inception to the current state are described and studied.

Chapter 4 focuses on scrutinising Greenvolt's IPO itself. It provides an in-depth examination of the planning, inherent costs, and careful timing that contributed to the execution of the IPO. The analysis correlates each aspect of the IPO with the relevant findings from the Literature Review, offering valuable insights into the strategic decisions and their impact on the IPO's overall performance.

In the fifth chapter the dissertation inspects Greenvolt's financial performance post-IPO, analysing different timeframes from July 15, 2021, to July 15, 2023. This two-year period witnessed significant fluctuations and changes in the stock price of the Portuguese company, as various events and market dynamics, which are addressed, influenced its trajectory.

Lastly, before concluding the dissertation, to provide a broader context, a comparative analysis with the renowned PSI 20 index is conducted, offering valuable insights into Greenvolt's performance relative to the broader market. The comprehensive findings from this analysis contribute to a deeper understanding of the company's resilience and long-term prospects in the dynamic financial landscape of green energy.

CHAPTER 2

LITERATURE REVIEW

2.1. IPO Definition

IPO is the process of going public by selling stock to a large number of diversified investors (Ibbotson & Ritter, 1995). IPOs are considered a vital financing measure through which a firm can enlist on the stock market and raise funds from the general public (Mumtaz & Yoshino, 2021).

2.2. Process of IPOs

“The initial public offering process involves a complex combination of tasks by the company, the underwriter, and the syndicate members.” (Ellis et al., 1999, p.10). The company depends on the underwriter's skills to promote, set the price, allocate, stabilize, and endorse the offering, while the underwriter counts on the company's transparency and honesty. Once the process is concluded successfully, the company obtains fresh capital, and the public gains a new chance to invest (Ellis et al., 1999).

2.2.1. The Underwriter of the IPO – Investment Bank(s)

Once a company decides to make its stocks available to the public, the next step involves choosing an underwriter. This can be a single bank or multiple banks who will assist throughout the process. If multiple banks are involved, one is designated as the main underwriter while the others share in managing the process.

Numerous factors come into play when selecting an investment bank. These include considering their reputation, expertise, and prior experience within the industry. In addition, past relations between the company and financial institution also play a role in this decision-making process. The main underwriter conducts a preliminary valuation of the firm, which involves determining its worth through methods such as examining industry and company growth rates and using various valuation multiples (Ellis et al., 1999).

2.2.2. Types of Underwriting the IPO

2.2.2.1 Firm Commitment

Firm commitment is the more commonly used method for larger issues (Ibbotson & Ritter, 1995). This approach involves the investment bank (underwriter) purchasing all the securities from the company going public at a discount, typically around 7%. The underwriter then resells the securities at a higher price, with the difference between the buying and selling prices being the gross spread. With firm commitment underwriting, the underwriter agrees to sell a certain number of securities to investors, meaning they assume significant risk during the IPO process (Ellis et al., 1999).

2.2.2.2 Best effort offering

“Best efforts offerings are used almost exclusively by smaller, more speculative issuers” (Ibbotson & Ritter, 1995, p.1011). With a best-efforts contract, the issuing firm and its investment banker agree on an offer price as well as a minimum and maximum number of shares to be sold. Throughout the selling period, the investment banker puts forth its "best efforts" to sell the shares to potential investors on their own best interest since if the minimum number of shares is not sold at the offer price within a set timeframe, typically around 90 days, the offer is cancelled, and all investors receive a refund of their money. In this scenario, the issuing firm does not receive any proceeds from the offering.

2.2.3. Marketing of the IPO

Cook, Kieschnick, and Van Ness (2006) highlighted the influence of marketing strategies on IPOs. Specifically, they found that pre-issue publicity is positively associated with retail trading activity on the first day of trading, higher offer prices and valuations compared to comparable firms in the industry, and initial IPO returns.

Investment banker compensation is also positively and significantly correlated to the marketing of the public offering, reinforcing the importance of marketing to issuers and investment bankers (Cook, Kieschnick, & Van Ness, 2006).

The main goal is to create awareness and demand for the IPO and there are many tools used: one is the prospectus, which is a legal document containing key information about the offering that is distributed to private and institutional investors (Cook, Kieschnick, & Van Ness, 2006). Another common tool is presentations given by the underwriter to potential investors, which provide a platform to showcase the benefits of investing in the offering according to Loughran and Ritter (2004). In addition to these tools, firms may also use roadshows, where management and underwriters travel to different cities to meet with potential investors, answer questions, and promote the offering (Ritter & Welch, 2002).

2.2.4. The Effective day

The effective day of an IPO holds great importance for both the issuer and the underwriter. Prior to this significant day, it is customary for them to convene and deliberate on the number of securities to be sold as well as determining the offering price.

As pointed out by Ritter (1987), IPOs are frequently undervalued, implying that there may be a surge in security prices during its initial trading period. This strategic approach of underpricing serves the purpose of attracting additional investments and solidifying the success of the offering.

In contrast, if the share prices are set too high resulting in investors perceiving them as overvalued, there would likely be little interest in purchasing said shares. Despite promoting various advantages through underpricing, certain researchers have posited concerns about potential long-term repercussions for both companies and their investors (Ritter & Welch, 2002). Notwithstanding these concerns, it remains evident that the effective date of an IPO plays a critical role capable of significantly influencing its overall success.

2.3. Timing of IPOs

The decision to go public through an IPO can be influenced by various factors. The circumstances of the market, the financial performance of the company and the preferences of investors are some of the studied factors by researchers that have been actively trying to understand the nature of IPO timing and what influences it.

Lowry (2003) investigated the fluctuations in IPO volume over a period and concluded that these fluctuations are primarily driven by alterations in market conditions. During periods when market volatility is high, investors tend to exhibit greater caution towards taking risks and become less inclined to invest in IPOs. Consequently, issuers are more likely to postpone their IPOs until such time when market conditions improve. On the other hand, during phases characterized by low volatility in markets, issuers lean towards bringing their IPOs onto the stage for public participation.

Benninga, Helmantel, and Sarig (2005) focused on the strategic timing of IPOs. The authors argued that companies can maximize their IPO proceeds by timing the offering to coincide with positive news announcements or other events that increase investor confidence. However, the authors cautioned that timing an IPO too closely with positive news can also create the perception that the company is riding a bubble, which can undermine investor confidence.

Busaba (2006) examined the use of Book-building and the option to withdraw in IPOs and how they impact the timing of the offering. He found that Book-building, which involves gathering indications of interest from potential investors, can help issuers gauge market demand and determine the optimal time to bring an IPO to market which can be an extremely useful tool.

2.4. Companies' motivation and advantages to perform IPOs

In Ritter and Welch (2002) the primary reason for a company to go public is to raise equity capital for the firm's expansion and development and "to create a public market in which the founders and other shareholders can convert some of their wealth into cash at a future date." (Ritter & Welch, 2002, p.3).

The second reason stated as minor is a non-financial one, the increase in publicity and the reach of the firm increasing brand recognition and public awareness of the company's products or services (Ritter & Welch, 2002).

More severe reporting and disclosure requirements are mandatory to public companies, which may increase transparency and accountability. The company's reputation and credibility can also be enhanced, attracting investors and other stakeholders (Pagano et al., 1998).

Lastly, these authors pointed out that going public can provide a platform for future mergers and acquisitions. Public companies can use their shares as currency to acquire other companies, which can be an effective growth strategy. This can provide the company with access to new markets, products, or technologies, which can be difficult to achieve through organic growth alone.

2.5. Costs of IPOs

Going public through an IPO can be a costly process for firms. Firstly, there are direct costs involved in hiring underwriters, lawyers, accountants, and other professionals who assist with the IPO process (Ritter, 1987). The direct costs can range from 2% to 7% of the total amount raised by the company (Aggarwal & Rivoli, 1990). In addition to the direct costs, there are indirect costs such as management distraction, loss of control, and disclosure costs.

Companies going public must meet strict disclosure requirements and provide comprehensive financial information to investors (Larrain et al., 2021). The price of auditing, accounting, and legal services may also rise as a result of these disclosure requirements. To comply with regulatory standards, businesses might also need to modernize their information systems and practices. These indirect expenses, according to Aggarwal and Rivoli (1990), may represent 15% to 30% of the company's overall revenue.

Additionally, because they are less well-known and have less negotiating power with underwriters and other industry specialists, smaller businesses may pay more when going public. Smaller companies can also be compelled to pay the underwriters a greater

spread to offset the increased risk they are taking. Because of this, it may be challenging for smaller businesses to compete with bigger ones that have a stronger reputation (Ritter, 1987).

Finally, companies going public may face ongoing costs associated with being a publicly traded company such as regulatory compliance costs, listing fees, and the costs of investor relations (Larrain et al., 2021). All this is put into account when any company is studying the possibility to perform an IPO (Ibbotson & Ritter, 1995).

2.6. IPO types

The valuation of IPOs is challenging and highly uncertain. There are at least three mechanisms for selling new issues: Book-building, fixed and auction, according to Hanafi (2021).

Book-building and the fixed price mechanism are the most common ones and the key difference between them is information solicitation. “In the fixed method, the offer price is set without soliciting information from investors. In the Book-building method, underwriters solicit informed investors to reveal information that will be used to set the offer price.” (Hanafi, 2021, p.3).

The auction mechanism is considered as superior because of its inclusion of information on current and previous market conditions. Nonetheless, Book-building mechanisms have gained popularity worldwide and are looked at as superior to the others by a big number of researchers in terms of achieving lower underpricing and lower aftermarket volatility (Hanafi, 2021).

2.7. IPO's Anomalies

Ritter (1991) pointed out three Anomalies in IPOs' process: (short-run) underpricing, the “hot issue market” phenomenon and long-run IPO underperformance.

2.7.1. Underpricing

Underpricing is a common phenomenon for companies newly listed on stock exchanges that have a high positive return due to the difference between the offer price and the first trading day price (Ibbotson & Ritter, 1995). Anderloni and Tanda (2017) analysed underpricing and stock performance of energy companies that concluded between 2000 and 2014 their IPOs on the main European stock exchange. They aimed to investigate the performance of energy companies at IPOs, and highlighting the differences compared to non-green ones. “The final sample was made of 144 energy firms (58 green ones).” (Anderloni & Tanda, 2017, p.6).

For the total sample, the computed average underpricing was determined to be 14.6%. In particular, the average underpricing for green businesses was 10.9%, compared to 17.1% for non-green businesses. These figures were determined based on the computation conducted on the first day of trading, as previously outlined (Anderloni & Tanda, 2017).

Regardless of the numerous hypotheses explaining underpricing, the majority of them claim that this phenomenon is connected to information asymmetries. Therefore, if a firm is more challenging to appraise due to its youth, small size, or production of less well-known goods or services, it may be more susceptible to information asymmetries regarding both the company and the industry and, as a result, suffer a higher underpricing at IPO.

Considering this, more recent and unknown green energy companies should suffer this however, the evidence of the study showed that “the two groups of firms follow similar trends both in the short and long run, despite green energy companies show a significant lower underpricing at IPO.” (Anderloni & Tanda, 2017, p.6). Although not having differences in the stock performance after IPO in the framework studied, green energy stocks are believed to display their intangible value added in the very long run (after the time horizon investigated) (Anderloni & Tanda, 2017).

This is reinforced by Mumtaz and Yoshino (2021) and Chan and Walter (2014), addressed before, which state that the green companies present a performance advantage compared to traditional companies on the long run.

2.7.2. “Hot Issue Markets”

The second anomaly highlighted in this article occurs when the return on the first day of trading exceeds the typical return for the company's first month of trading on the stock exchange (Ritter, 1991).

2.7.3. Long-run IPO Underperformance

Lastly, Ritter (1991) reported the long-run IPO underperformance of company shares as a pattern noting that, on average, the firms of the sample selected that conducted an IPO in the US between 1975 and 1984 performed poorly in the financial markets over the first three years after turning public. Risk under-estimation, unfavourable luck, and overconfidence are all potential causes of this underperformance.

2.8. IPO Investment

According to Robert Shiller (1988), individual investors tend to be more prone to investing in IPOs than institutional investors. This is probably because people believe that IPOs offer a singular potential for large short-term gains. Individual investors also have a propensity to cling onto their IPO assets for extended periods of time, according to Shiller, which can lead to poorer total returns than institutional investors, who have access to resources and the knowledge necessary to manage their IPO investments.

Additionally, the significance of performing exhaustive due diligence before investing in an IPO is emphasized, as this type of investment might be inherently dangerous due to the lack of past financial data and the scarcity of information about the firm.

Aggarwal and Rivoli (1990) showcased the "hot issue" or "winner's curse" theory, which suggests that investors should invest in IPOs that have a high level of investor demand. This assumes that an IPO with strong demand will probably see a big price increase on the first day of trade, giving investors a quick return. This tactic, meanwhile, can be risky because the IPO's price might drop after the first day of trading.

According to Lowry and Schwert (2002), other investors use a longer time horizon and concentrate on the fundamentals of the company, such as its management group, growth possibilities, and financial performance.

2.9. Green IPO Definition

"Green IPOs are an essential component of green finance, which refers to issuing new shares by firms that develop or produce environmentally friendly products" (Mumtaz & Yoshino, 2021, p.1). This financial mechanism gained significance as green companies grew and sought to expand their operations. As these environmentally conscious firms matured and gained market traction from the 1980s onwards, going public through IPOs became a natural progression for them.

By offering shares to the public, green IPOs not only provide companies with access to capital to finance their activities but also offer investors an opportunity to support companies dedicated to making a positive impact on the environment.

2.10. Green IPO's Performance

In Mumtaz and Yoshino (2021) and Chan and Walter (2014) is stated that in the short-run environmentally friendly companies' IPOs will underperform and obtain low returns due to extra costs in mitigating of pollution, designing clean technology systems and manufacturing environmentally friendly products.

On the contrary, and the most important for investors, in terms of long-term performance, both studies state that IPOs of companies with higher environmental standards outperform the remaining ones as they can avoid the potential costs of corporate social crises and environmental disasters, providing superior value to the stakeholders and potential investors.

2.11. Green IPOs in the US

Several green companies have gone public in the past 20 years and have gathered a lot of interest across numerous industries. With its environmentally benign approach to energy generation, First Solar changed the solar energy industry. With its cutting-edge electric automobiles, Tesla upended the conventional auto sector, while Enphase Energy established itself as a fintech firm focusing on renewable energy solutions. In order to challenge the traditional meat market, Beyond Meat popularized plant-based meal substitutes. One of the most popular online marketplaces for second hand designer clothing, Rebelle recently made headlines as the first "Green IPO" in the history of the Nasdaq system (Nasdaq, 2022). Each of these businesses exemplifies a distinct strategy for their markets, highlighting the significance of sustainability, innovation, and disruption in modern business practices.

First Solar is an American company that provides responsibly produced eco-efficient solar modules. "First Solar's advanced thin film photovoltaic (PV) modules represent the next generation of solar technologies", their ally on the fight against climate change (First Solar, 2021).

In its first public offering in 2006, the business sold 22.942.500 shares at a starting price of \$20 per. A group of underwriters, including Credit Suisse Securities and Morgan Stanley & Co., undertook the offering. Shares climbed 24% on the first day of trading, marking a successful IPO (First Solar, 2006).

Tesla, a world known Electric car manufacturer, announced its IPO on June 29, 2010. Tesla issued 13.3 million shares at a price of \$17 each, achieving a total of \$226,1 million in revenue.

Despite initial worries about Tesla's finances and the practicality of electric automobiles, the first day of trading was highly promising as shares prices jumped by 41%, finishing at an astounding \$23,89. This achievement and its market worth of more than \$2,2 billion, rose Tesla to become one of the most valuable automakers in the world (Tesla, 2010).

On March 29, 2012, Enphase Energy Inc. announced the pricing of its IPO, \$6 per share for approximately 8.969.697 units of common stock. The company Enphase Energy, Inc. sells solar microinverter technology and received \$54 million in its IPO, having a market value of about \$275 million.

The shares were directly offered by Enphase. At the end of 2012, Enphase Energy shares were valued at about \$14, more than double their original value. The company continued to perform well, and the stock price rose significantly. A considerable increase from its IPO price of \$6 per share, the company's stock was valued roughly \$185 per share as of September 2021 (Enphase, 2012).

Beyond Meat, a company that produces vegan burgers that resemble meat, launched its IPO in May 2019. The initial share's price was \$25, and it was believed that it had potential to raise more than \$250 million to finance business growth.

The stock price increased rapidly, reaching a 645% gain on its peak of the day, giving the company a market evaluation of \$11,2 billion. Beyond Meat's IPO was a success, in contrast to other companies that went public in the same year, like Uber and Lyft.

The market response and change in the consumer's demands generate estimations that Beyond Meat will one day become a multi-billion-dollar industry, taking a big bite of the \$1,4 trillion global meat market (Beyond Meat, 2019).

Founded in Germany, Rebelle is an online store that focuses on selling high-end used designer clothing. The company's goal is to provide cherished items with a new home while preserving their originality and identity (Rebelle, n.d.).

An important turning point was reached for the market and the firm with the IPO of Rebelle on the Nasdaq First North Growth Market in Stockholm. The IPO, which occurred in February 2022, was notable for being the first "Green IPO" within the Nasdaq system. Companies that achieve certain sustainability requirements, such as producing more than 50% of their revenue through sustainable business operations and investing a sizeable sum in green initiatives, are given this distinction.

Rebelle's IPO was a tremendous success, with the company raising \$56 million in total. At a price of SEK 45 per share (\$4,8), the business issued 2.250.000 new shares and sold an extra 4.500.000 existing shares. At the time of the IPO, Rebelle had a total market value of around \$186 million (Rebelle, 2022).

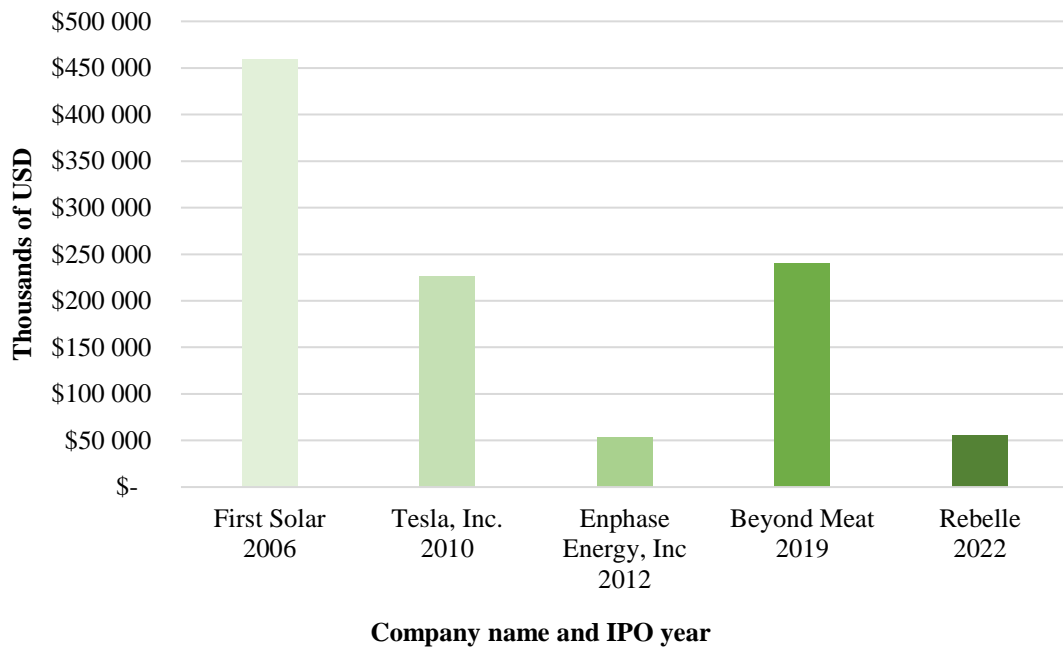


Figure 2.1: Major Green IPOs in the US by year.

Source: Prepared by the author based on IPO Data from Select American Companies' Press Releases and Prospectuses.

Figure 2.1 provides a visual overview of the IPO activity in the US within the 21st century, highlighting the trends and fluctuations in the number of IPOs from year to year.

2.12. Green IPOs in Europe

Greencoat UK Wind went public in the UK in 2013 in the country's largest renewable energy IPO to date, raising €300 million, surpassing its goal of €245 million. The infrastructure fund, managed by investment group Greencoat UK, used the funds to buy its first six wind farms, with a combined capacity of 126,5 megawatts (Reuters Staff, 2013).

Leading global renewable energy producer Volterra focuses on generating electricity from wind, solar, hydro, and biomass power facilities. It started trading on the Euronext Paris stock exchange on July 11, 2014. The company successfully raised over €100 million through a capital increase. The gross proceeds from this transaction were

generated by the issue of 11.639.660 new shares priced at €8,60 per share, increasing the company's market capitalization to nearly €210 million (Euronext, 2013).

A Norwegian firm called Scatec Solar ASA develops, constructs, and runs solar power plants with an emphasis on developing markets. The company, which has operations in Africa, Asia, the Americas, and Europe, was created in 2007 and has since developed into a major participant in the worldwide solar sector. Scatec Solar ASA announced the successful completion of its IPO on the Oslo Stock Exchange on October 1, 2014. The IPO comprised of 26.315.790 new shares and 10.000.000 existing shares, each priced at NOK 19,00 (€2,28) per share.

The total size of the offering, including the over-allotment facility, was NOK 794 million, just about €97 million. Following the IPO, Scatec Solar had a market capitalization of NOK 1,783 million, equivalent to nearly €214 million (Scatec, 2014a, 2014b).

Innogy, the renewables, network, and retail business of utility firm Germany, completed its €4.6bn IPO on October 6th, 2016, making it the largest IPO in Europe in five years and the largest in Germany in almost 16 years. Innogy's IPO was the second largest ever from the renewable energy sector, behind Iberdrola Renovables in December 2007. Innogy issued 55,6 million new shares, while parent RWE put up as many as 83,3 million existing shares for sale at €32-€36 apiece. The IPO gave Innogy a market capitalisation of up to €20bn (Steitz, 2016).

2.13. Green IPOs in Portugal

EDP Renewables, a subsidiary of EDP and one of the largest wind energy companies in the world as of March 31, 2008, announced the Listing of shares representing the respective share capital on the Eurolist by Euronext Lisbon. The IPO consisted of a combined offer of up to 225.427.952 shares, representing up to 25% of EDP Renewables share capital after the capital increase. The offering began on May 19, 2008. The subscription price range was set between €7,40 and €8,90 per share, equivalent to an enterprise value between approximately €7 billion and €8 billion, making it the largest IPO to be launched in Europe in 2008 up to that date.

The offer raised €1,568 billion and its proceeds were used to finance EDP Renewables' growth strategy, including the execution of its wind project portfolio to reach its goal of more than 10,5 GW of installed capacity by 2012. The public subscription offering in Portugal consisted of 45.085.590 shares representing 20% of the combined offer (EDP, 2008).

In 2008, EDP Renewables became the first green IPO in Portugal, marking a milestone in the country's renewable energy industry. The IPO was well-received by investors, reflecting growing interest in sustainable investments. EDP Renewables' successful public offering also paved the way for another renewable energy company to follow suit, Greenvolt (Reuters Staff, 2008).



Figure 1.2: Major Green IPOs in Europe by year.

Source: Prepared by the author based on IPO Data from Select American Companies' Announcements, Euronext, and Reuters.

Figure 2.2 provides a visual overview of the IPO activity in Europe within the 21st century.

CHAPTER 3

GREENVOLT

3.1. The beginning of Greenvolt

In the end of 2018 Bioelétrica da Foz became fully owned by Altri when the renewable energies' group invested 55 million euros to obtain the remaining part of the company that was owned by EDP. Greenvolt appeared in March of 2021 with the rebranding of Bioelétrica da Foz boosted by the recently invited CEO, João Manso Neto, former CEO of EDP Renewables.

Manso Neto has a long career in the green energy sector which brings valuable know-how and expertise to the company, on top of long experience of managing complex and big dimensions businesses (Greenvolt, 2022a).

3.2 Greenvolt's Organization and Management Team

Greenvolt's organization and management team is led by CEO João Manuel Manso Neto, who provides strategic guidance and oversees the company's operations. The Board of Directors, chaired by Clementina Maria Dâmaso de Jesus Silva Barroso, consists of non-executive directors with diverse backgrounds. Together, they ensure effective leadership and decision-making for Greenvolt's growth in the renewable energy sector.

Greenvolt has established several committees to address specific areas of its operations. The Shareholder Remuneration Committee, chaired by Fernanda Luisa Zambujo Carapuço Vieira de Moura, focuses on remuneration matters. The Statutory Audit Board, led by Pedro João Reis de Matos Silva, oversees auditing activities. The Remuneration and Nomination Committee, chaired by João Manuel Matos Borges de Oliveira, handles remuneration and nomination processes. These committees, along with others like the Audit, Risk and Related Parties Committee and the Ethics and Sustainability Committee, contribute to Greenvolt's strong governance framework (Greenvolt, 2023).

3.3. Greenvolt's Structure

In Figure 3.1, you can observe the Shareholder Structure according to Greenvolt's Annual Report, 2021.

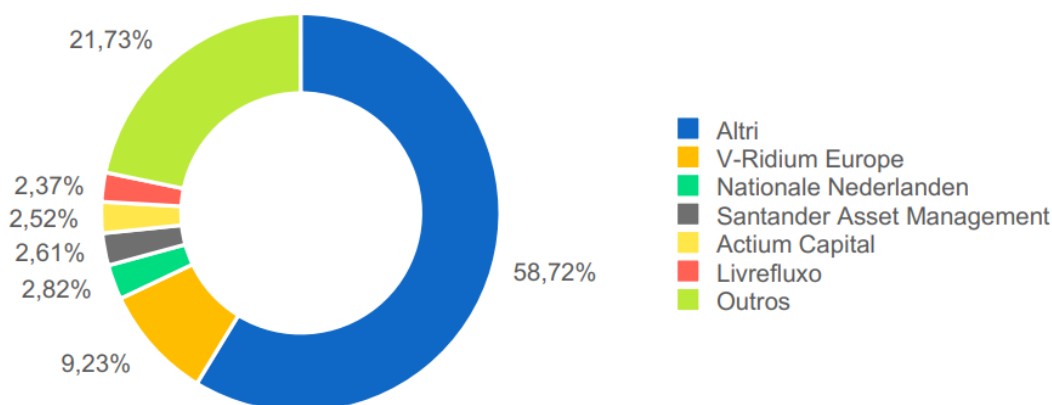


Figure 2.1: Greenvolt's shareholder structure as of December 31, 2021.

Source: Greenvolt's Annual Report, 2021.

More recently as April 16, 2023, according to Greenvolt's Website, the number of shares held, and the percentage of direct voting rights are structured as follows in Table 3.1.

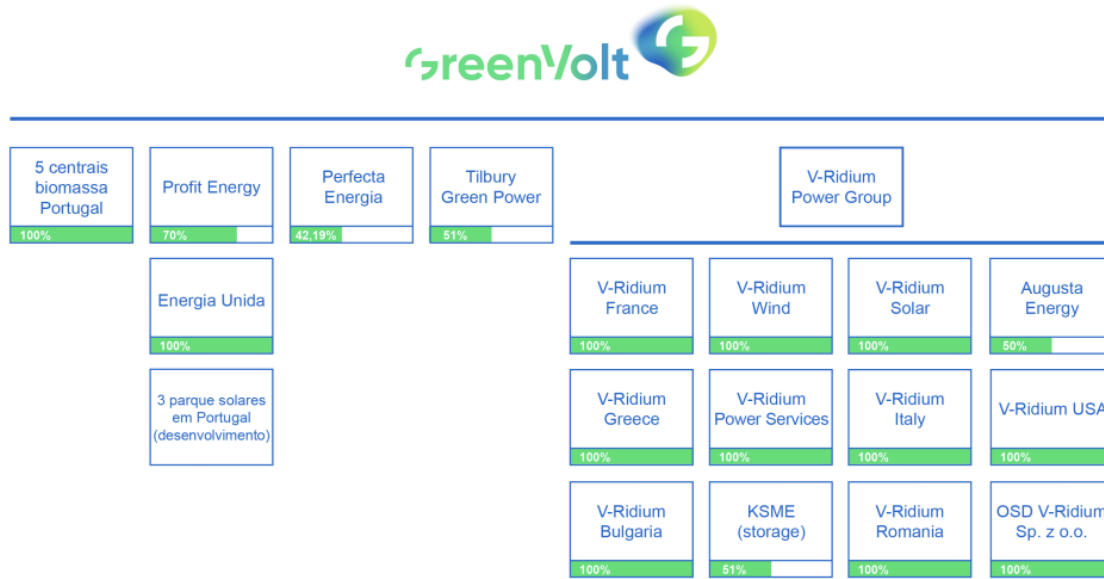
Table 3.1: Greenvolt's Shareholder Structure as of April 16, 2023.

<u>More than 15% of voting rights</u>	<u>Number of shares held</u>	<u>Direct % of voting rights</u>
Altri, SGPS, S.A.	23.154.783	16,64%
Directly	4.404.783	3,17%
Through Celbi S.A.	18.750.000	13,47%
<u>More than 5% of voting rights</u>	<u>Number of shares held</u>	<u>Direct % of voting rights</u>
ACTIUM CAPITAL S.A. (b)	13.917.220	10,00%
PROMENDO INVESTIMENTOS, S.A. (a)	13.389.937	9,62%
KWE Partners Ltd; V-RIDIUM EUROPE SP. Z.O.O.; CEEV Partners SP. Z.O.O.	13.317.593	9,57%
- KWE Partens Ltd	1.641.808	1,18%
- V-RIDIUM EUROPE SP. Z.O.O.	11.200.000	8,05%
- CEEV Partners SP. Z.O.O.	475.785	0,34%
CADERNO AZUL, S.A. (c)	12.101.403	8,70%
LIVREFLUXO, S.A. (d)	11.665.206	8,38%
1 THING, INVESTMENTS, S.A. (e)	7.529.589	5,41%

Source: Greenvolt's Website, 2022.

The organizational structure of Greenvolt, as illustrated in Table 3.2, is derived from the Annual Report of Greenvolt for the fiscal year 2021.

Table 3.2: Greenvolt’s Societary Structure as of December 31, 2021.



Source: Greenvolt’s Annual Report, 2021.

Table 3.3 showcases Greenvolt's Societary Governance Entities as of December 31, 2022.

Table 3.3: Greenvolt’s Societary Governance Entities as of December 31, 2022.

Shareholder Remuneration Committee

Fernanda Luisa Zambujo Carapuço Vieira de Moura (Chairwoman)
Francisco Domingos Ribeiro Nogueira Leite

Statutory Audit Board

Pedro João Reis de Matos Silva (Chairman)
Francisco Domingos Ribeiro Nogueira Leite (Effective member)
Cristina Isabel Linhares Fernandes (Effective member)
André Seabra Ferreira Pinto (Alternate member)

Board of the General Meeting

António Bernardo Aranha da Gama Lobo Xavier (Chairman)
Inês Pinto Leite (Secretary)

Auditor

Deloitte & Associados, SROC, S.A. Represented by
Nuno Miguel Santos Figueiredo (ROC n.o 1272)

Board of Directors

Chief Executive Director (CEO)

João Manuel Manso Neto

Non-Executive Directors

Clementina Maria Dâmaso de Jesus Silva Barroso (Chairwoman, independent)
Paulo Jorge dos Santos Fernandes (Non-independent)
Pedro Miguel Matos Borges de Oliveira (Non-independent)
Ana Rebelo de Carvalho Menéres de Mendonça (Non-independent)
António Jorge Viegas de Vasconcelos (Independent)

João Manuel Matos Borges de Oliveira (Non-independent)
Domingos José Vieira de Matos (Non-independent)
José Armindo Farinha Soares de Pina (Non-independent)
Céline Dora Judith Abecassis-Moedas (Independent)
Maria Joana Dantas Vaz Pais (Independent)

Remuneration and Nomination Committee

João Manuel Matos Borges de Oliveira
Paulo Jorge dos Santos Fernandes
Céline Dora Judith Abecassis-Moedas

Audit, Risk and Related Parties Committee

Clementina Maria Dâmaso de Jesus Silva Barroso (Chairwoman)
António Jorge Viegas de Vasconcelos (Member)
Maria Joana Dantas Vaz Pais (Member)

Strategic and Operational Monitoring Committee

Paulo Jorge dos Santos Fernandes
João Manuel Matos Borges de Oliveira
Pedro Miguel Matos Borges de Oliveira
Domingos José Vieira de Matos
Ana Rebelo de Carvalho Menéres de Mendonça
José Armindo Farinha Soares de Pina
João Manuel Manso Neto

Ethics and Sustainability Committee

Céline Dora Judith Abecassis-Moedas (Chairwoman)
Clementina Maria Dâmaso de Jesus Silva Barroso (Member)
Maria Joana Dantas Vaz Pais (Member)
João Manuel Manso Neto (Member)

Source: Greenvolt's Integrated Annual Report, 2022.

The organization chart presented in Table 3.3 outlines the division of powers among the various corporate bodies, committees, and departments within the company. It provides information on the delegation of powers, particularly regarding the day-to-day management of the company. The chart includes the following entities as of the disclosure date of this report and reflects the progressive implementation during the fiscal year 2022 up to the present:

- Shareholder Remuneration Committee: Chaired by Fernanda Luísa Zambujo Carapuço Vieira de Moura, with Francisco Domingos Ribeiro Nogueira Leite as a member.
- Statutory Audit Board: Chaired by Pedro João Reis de Matos Silva, with Francisco Domingos Ribeiro Nogueira Leite, Cristina Isabel Linhares Fernandes, and André Seabra Ferreira Pinto as members.
- Board of Directors: Led by Chief Executive Director (CEO) João Manuel Manso Neto. It consists of both executive and non-executive directors, including Clementina Maria Dâmaso de Jesus Silva Barroso as Chairwoman, independent directors Céline Dora Judith Abecassis-Moedas and António Jorge Viegas de Vasconcelos, as well as other non-independent directors.

Additionally, Table 3.3 also displays the committees within the company, such as the Remuneration and Nomination Committee, Audit, Risk and Related Parties Committee, Ethics and Sustainability Committee, and the Strategic and Operational Monitoring Committee. These committees are comprised of various board members and have specific responsibilities related to remuneration, nomination, audit, risk, ethics, sustainability, and strategic oversight.

3.4. Greenvolt's Activity

Greenvolt operates in the Renewable Energies market, seeking to deliver pioneer solutions that accelerate a clean and fair energy transition. Its goal is to contribute to a better world through the green energy sector environmentally, socially, and economically. As of December 31, 2022, the company had a total of 486 employees. Renewable energy is becoming increasingly popular around the world as concerns about climate change continue to grow. The urge to increase the investment on alternatives to fossil fuel gets greater as the time goes by (Greenvolt, 2023).

The price of electricity has been rising in the last five years, thus the global market for distributed generation grew by 1.8 times between 2018 and 2020, making it one of the most dynamic renewable energy sectors. The Iberian Peninsula has among the highest levels of solar radiation in Europe, nevertheless it has one of the lowest levels of distributed generation in the Old Continent. Bearing this in mind, Greenvolt considers this area as strategic as it is a way to lower the electricity expenses of the Portuguese and Spanish families, not the richest ones within Europe, and a great pickup point to strengthen its market share at a European level (Greenvolt, 2022b).

3.4.1 Operating Sectors

The Portuguese company values forest residues, the potential of the wind and the sun's resources in its three operating sectors: Biomass, Wind & Solar and Distributed Generation.

3.4.1.1 Biomass

Nowadays, Greenvolt is considered the biggest player in Portugal in the energy production from residual forest Biomass. Electrical power is produced either by residual forest biomass as in the five biomass power plants in Portuguese soil or by urban waste wood, the case of Tilbury Greenpower, an English company. On top of producing energy these resources are important to incentive the forest cleaning, the rural economy, recycling, and reuse of products (Greenvolt, 2022d).

3.4.1.2 Wind & Solar

Regarding the Wind & Solar sector: V-ridium, Maxsolar Energy concepts from Germany and SEO account for Greenvolt's companies. In July of 2021 Greenvolt acquired 100% of V-Riddium, through this global player with more than 200 years of experience in the sector Greenvolt is at this time one of the largest solar and wind project developers in the world, with projects in 12 different countries (Greenvolt, 2022d).

3.4.1.3 Distributed Generation

In the Distributed Generation sector there are listed four companies: Profit Energy, *Energia Unida*, both Portuguese, and Perfecta Energia and Univergy Solar, equally Spanish. This sector is one of the strategic pillars as it is vital for the energetic transaction that Greenvolt aims to achieve. The company develops creative solutions to reach and include as many people as possible in this process (Greenvolt, 2022d).

3.5. External competition and Internal goals

Through the combination of the described three operating sectors Greenvolt owns a unique positioning in the Renewable Energies market which allows the company to outstand from traditional biomass players, notably Albioma and Drax, competitors that only focus on wind and solar PV such as EDP renewables, Acciona energia and Orsted as well as from other renewable Iberian players (Greenvolt, 2022a).

The expansion as a group is looked at as crucial by the CEO as he considers this determinant to Greenvolt's success: "through collaboration we can achieve much more and much faster.", as stated in his interview in the 2021 Greenvolt's Annual Report (Greenvolt, 2022b, p. 11). Owning completely or partially already eight companies across the renewable energy industry, Greenvolt assists the companies with strategy and development and absorbs the knowledge and know-how of each subsidiary/associate company.

3.6. Greenvolt's Financial Performance

In addition to the upcoming sector and top management of Greenvolt the investment is potentiated and based on its outstanding financial performance. According to the company's Annual report on the FY21 the revenues increased 57% reaching 141,5 million euros and the Recurring EBITDA and the EBTIDA increased both more than 70%, the second accounted approximately 57 million euros.

"The Biomass performance was the main driver for the positive EBITDA evolution" which led to a growth of 238% between the first quarter of 2021 and the homologous in 2022 (Greenvolt, 2022e, p.9). The Net Income was also positive and remarkable: 11,9 million euros (Greenvolt, 2023).

CHAPTER 4

GREENVOLT'S IPO

João Manso Neto terminated a non-competition agreement worth 1,7 million euros over a period of three years to embark on a new project. This project, part of Greenvolt's national and international expansion plan, aimed to surpass Altri and transition to Euronext Lisbon as a publicly traded company.

The primary objective was to enhance the company's market presence and secure investments that would enable diversification into additional sectors such as Wind, Solar, and other forms of energy production, complementing their existing focus on Biomass. Altri publicly expressed this desire in March of the same year, which was subsequently fulfilled.

On the 15th of July of 2021, the first Trading Day, Greenvolt's CEO strategy and goal were fulfilled after the listing and admission of the company to trading on Euronext Lisbon, under the symbol "GVOLT". BNP PARIBAS and CaixaBank acted as Joint Global Coordinators for the Offering, Banco Santander and JB Capital Markets as Joint Bookrunners, and Lazard as Altri's financial advisor. Vieira de Almeida acted as legal advisor to GreenVolt and PLMJ acted as legal advisor to the Joint Global Coordinators. Deloitte is GreenVolt's auditor (Greenvolt, 2021a).

The Offering Price was set at €4,25, implying a pre-money market capitalisation of approximately €319 million, following a successful and comfortably over-subscribed Book-building with high quality investors. The maximum number of New Shares to be issued under the Offer was 30.588.235. They were classified as “ordinary nominative book-entry shares, with no nominal value” (Greenvolt, 2021a, p.3).

4.1. Scheduled events and Book-building period

According to the Supplement to the Prospectus the Book-building Period was expected to occur from 2 July 2021 to 12 July 2021 and the remaining events were scheduled as in Table 4.1.

Table 4.1: Greenvolt’s IPO schedule.

Event	Initially Expected Date	Updated Expected Date
Start of Book-building Period	2 July 2021	2 July 2021
End of Book-building Period	8 July 2021	12 July 2021
Pricing and Allocation	9 July 2021	13 July 2021
Publication of Pricing Statement	9 July 2021	13 July 2021
Financial settlement of the Offering New Shares	12 July 2021	14 July 2021
Physical settlement of the Offering New Shares by delivery of temporary shares (<i>cautelās</i>)	12 July 2021	14 July 2021
Registration of share capital increase	12 July 2021	14 July 2021
Conversion of the Offering New Shares from temporary shares (<i>cautelās</i>) into definitive form	13 July 2021	15 July 2021
Listing and admission to trading	13 July 2021	15 July 2021

Source: Supplement to the Prospectus, 2021.

4.2. Subscription Commitments

In accordance with subscription and lock-up letters dated approximately on 6 June 2022, Promendo Investimentos, S.A., Actium Capital, S.A., Livrefluxo, S.A., Caderno Azul, S.A., 1 Thing, Investments, S.A. (core shareholders of both Altri and GreenVolt), and Kwe Partners Ltd. (an entity controlled by the same controlling shareholders as V-Ridium Europe), individually and not jointly, have undertaken the commitment to subscribe to new shares upon the exercise of their existing Subscription Rights. The details of their commitments are outlined in Table 4.2.

Table 4.2: Subscription Commitments’ Table.

Holders of Subscription Rights	Number of Shares	Percentage of share capital and voting rights held	Number of Shares following the Offer	Percentage of share capital and voting rights following the Offer
Promendo Investimentos, S.A.	11,678,050	9.62%	13,389,935	9.62%
Actium Capital, S.A.	10,085,184	8.31%	11,563,571	8.31%
Livrefluxo, S.A.	9,700,087	7.99%	11,122,022	7.99%
Caderno Azul, S.A.	9,677,544	7.97%	11,096,175	7.97%
1 Thing, Investments, S.A.	6,221,231	5.13%	7,133,201	5.13%
Kwe Partners Ltd.	11,200,000	9.23%	12,841,808	9.23%
Total	58,562,096	48.25%	67,146,712	48.25%

Source: Prospectus, 2021.

Following the completion of the Offer, provided that the Subscription Commitments outlined above are met and the Offer is fully subscribed, the respective holders of Subscription Rights will possess the holdings depicted in Table 4.3.

Table 4.3: Holdings of Subscription Rights Holders following the Offer.

Holders of Subscription Rights	Number of New Shares they commit to subscribe
Promendo Investimentos, S.A.	1,711,885
Actium Capital, S.A.	1,478,387
Livrefluxo, S.A.	1,421,935
Caderno Azul, S.A.	1,418,631
1 Thing, Investments, S.A.	911,970
Kwe Partners Ltd. ⁹³	1,641,808
Total	8,584,618 (corresponding to 48.2 percent of the share capital increase assuming that it is fully subscribed)

Source: Prospectus, 2021.

The Subscription Commitments outlined in the subscription and lock-up letters dated around 6 June 2022 involved several core shareholders of both Altri and GreenVolt, namely Promendo Investimentos, S.A., Actium Capital, S.A., Livrefluxo, S.A., Caderno Azul, S.A., 1 Thing, Investments, S.A., and Kwe Partners Ltd. These shareholders, on an individual and non-joint basis, committed to subscribing to new shares based on their existing Subscription Rights.

4.3. Underwriters

On June 9, 2022, Greenvolt entered into an Underwriting Agreement with the Managers to handle the unsold New Shares as per the distribution and allocation plan as outlined in Table 4.4.

Table 4.4: Allocation of Unclaimed New Shares.

BNP PARIBAS	32.5%
Banco Santander, S.A.	32.5%
CaixaBank, S.A.	9.6%
CaixaBI	6.2%
Mediobanca Banca di Credito Finanziario S.p.A.	9.6%
JB Capital Markets, S.V, S.A.U.	9.6%;
Total	100%

Source: Prospectus, 2021.

The Managers, including BNP Paribas, Banco Santander, S.A., CaixaBank, S.A., CaixaBI, Mediobanca Banca di Credito Finanziario S.p.A., and JB Capital Markets, S.V, S.A.U., individually committed to finding subscribers, particularly Qualified Investors, or subscribing themselves for the remaining New Shares at the Subscription Price. In the event that any New Shares are unclaimed through the exercise of Subscription Rights, excluding the commitments of Promendo Investimentos, S.A., Actium Capital, S.A., Livrefluxo, S.A., Caderno Azul, S.A., 1 Thing, Investments, S.A., and Kwe Partners Ltd., they will be allocated based on the specified percentages displayed above.

4.4. Timing and Motivation

In Greenvolt's case the increase in publicity and the reach of the firm, presented before, appeared clearly with a high importance as it was a newly rebranded company with big future aspirations. The market conditions are appointed as the most significant factor in the timing choice to go public by analysing the variation in number of IPOs during a period (Ritter & Welch, 2002).

Regarding the green energy market, the situation back in 2021 was idyllic as there were international efforts to perform an electric supply change to renewable energies and investors willing to take part in that process and profit from supporting the key players involved.

Taking this into account, Greenvolt aimed to consolidate its leading position in the Portuguese market and gain recognition in the international renewable energy market

through the IPO. The investment contributed to the realization of the Issuer's growth and expansion plans, based on three main pillars: biomass (developing biomass projects in Portugal, extending guaranteed tariff periods, and acquiring and optimizing underperforming biomass assets in Europe), solar and onshore wind development, and decentralized energy production (Greenvolt, 2021c).

The stage of the firm in its life cycle is indicated as the second most important factor. The leading board invested in a new CEO and acquisition of other companies, considering this, Greenvolt is in the growth stage of its lifecycle, also a plus in performing an IPO at that time (Ritter & Welch, 2002).

“Investing in IPOs is essentially an exercise in forecasting low-probability events.” (Meoli et al., 2014, p 2). Greenvolt’s IPO success was then related to a cognitive fallacy that can lead to poor decisions as opportunities that are immediately thought of are given a higher priority by people. Even though there are hundreds of companies available for purchase investment, investors tend to favour those that have recently made the news rather than thoroughly examining all of their possibilities, an advantage as well at that period of time for Greenvolt (Meoli et al., 2014).

4.5. Costs

The expenses of the IPO include fees payable to the Managers, as well as costs associated with other consultants and the admission of the Shares to trading, amounting to an estimated €7.339 million (Greenvolt, 2021c).

4.6. Share price valuation

In Greenvolt ‘s IPO a price gap between 4,25 and 5 euros was fixed per share, after a market analysis and equity evaluation. Then the Book-building mechanism was used to establish the final price at 4,25 euros, as previously mentioned, the minimum level indicated previously. In the procedure of this mechanism informed investors directed IPO analyses and a positive association between underpricing and long-term performance is

defended in Hanafi (2021), something to assess later on by the green company (Greenvolt, 2021a).

CHAPTER 5

GREENVOLT'S IPO AND OVERALL PERFORMANCE

5.1. The first Trading Day

Upon its entry into the stock market, Greenvolt's shares commenced trading at a value of €4,55 per share, although the Offer price was established at €4,25. During that eventful day, the shares experienced peak price of €5,18 and a low of €4,50 before ultimately closing at €4,69 per share, with a notable trading volume of 1.71M shares.

Figure 5.1 illustrates the described progression throughout the first trading day.

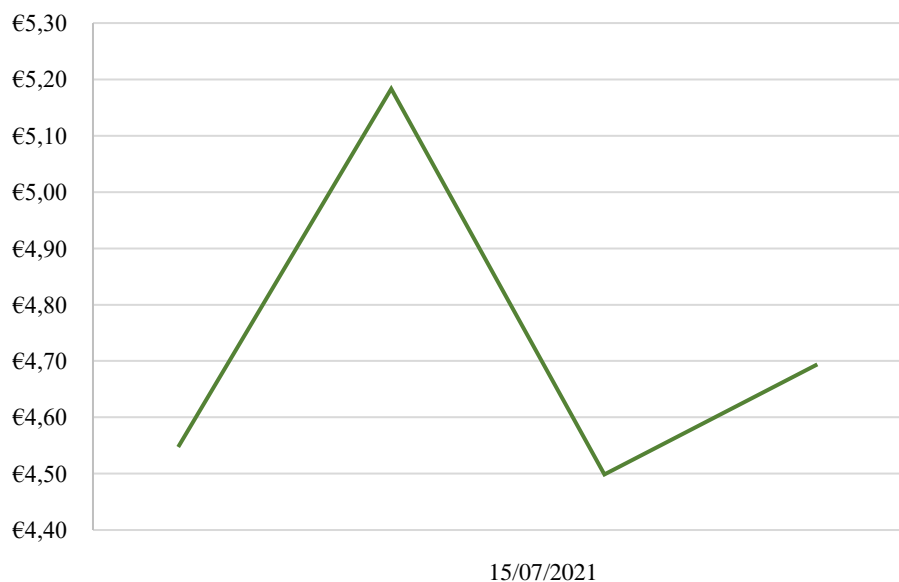


Figure 5.1: Greenvolt's stock price evolution through the first day of trading.

Source: Prepared by the author based on Greenvolt's stock prices from Euronext Lisbon.

According to Ibbotson and Ritter (1995), underpricing is computed through the percentual variation between the Offer price and the share price at the end of the first day of trading. In this case between €4,25 and €4,69, resulting in an underpricing of 10,35%, as observed in Table 5.1.

Table 5.1: Greenvolt’s stock price evolution through the first day of trading.

Offer Price	Open Price	Closing Price	Underpricing
4,25 €	4,55 €	4,69 €	10,35%

Source: Prepared by the author based on Greenvolt’s stock prices from Euronext Lisbon and Greenvolt’s Prospectus, 2021.

The underpricing percentage observed in Greenvolt's case is slightly below the average percentage reported by Anderloni and Tanda (2017) for European green energy companies in their sample, which stood at 10.9%.

According to the authors, underpricing is associated with information asymmetries. Taking this into account, Greenvolt, a newly established green energy company specializing in intangible services, might have encountered this phenomenon. However, due to its smaller size and stage of development, the degree of underpricing was comparatively lower than the average.

5.2. The first seven days of Trading

On July 15, 2021, the shares closed at €4.69 per share. In the subsequent days, the prices fluctuated within a narrow range. On July 16, the closing price was €4.56, followed by €4.57 on July 19. The prices then slightly decreased to €4.38 on July 20 before recovering back to 4,44€ on the following day.

On July 23, 2021, Greenvolt's shares closed at €4.64 per share, while on July 22 they closed at €4.63 per share. These prices almost didn’t vary and are in close proximity to the value of €4.69 per share observed on the first trading day. The consistent values suggest relative stability in the early stages of trading.

Figure 5.2 depicts the analysed evolution of the share price across the first seven days of trading.

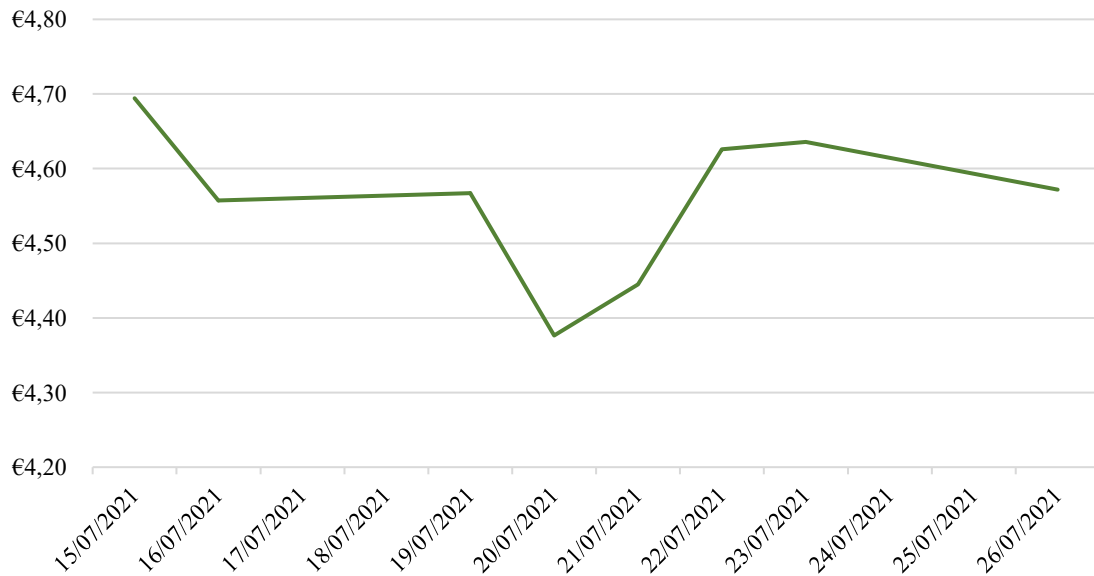


Figure 3.2: Greenvolt's daily stock price through the first seven days of trading.

Source: Prepared by the author based on Greenvolt's stock prices from Euronext Lisbon.

5.3. The first two years of Trading

In 2021, Greenvolt's stock witnessed a bullish trend, reaching its highest peak at €7,08 per share on October 25, 2021. This surge can be attributed to positive market sentiment and strong investor confidence in the company's green energy initiatives. However, the stock also experienced bearish periods, with the lowest point recorded at €4.38 per share on July 20, 2021. This dip could be attributed to market volatility and to the distribution of assets to shareholders.

On October 19, 2021, Greenvolt made an announcement regarding a potential private offering for the subscription of notes. In pursuit of its financial strategy and commitment to diversifying its financing sources, Greenvolt appointed Banco de Investimento Global, S.A. and Haitong Bank, S.A. as joint global coordinators for a potential private offering of bonds. The offering aimed to raise a minimum indicative amount of €75.000.000 and was expected to take place in the coming weeks. This news was well-received by the market, leading to a positive reaction among investors. As a result, the stock price experienced a significant increase, rising from €6.23 on that day to reach its peak of €7.08 in 2021 (Greenvolt, 2021d).

The year 2022 proved to be a roller-coaster ride for Greenvolt's stock. The stock faced a significant downturn, touching its lowest point at €5.25 per share on February 22, 2022. This decline was primarily influenced by geopolitical tensions arising from the war in Ukraine, which began on the 24th of this month, which created uncertainty and prompted investors to adopt a more cautious approach.

The conflict created a surge in demand for green and sustainable energy sources, as investors recognized the need for renewable alternatives. This heightened interest in environmentally friendly investments and could be seen as a contributing factor to the subsequent fluctuations and growth in Greenvolt's stock prices. Notably, on April 6, the stock reached its highest value so far in the year, €7,81. This surge occurred two months after the beginning of the war, indicating that despite the initial uncertainties surrounding the geopolitical situation, investors regained confidence in Greenvolt's prospects and the renewable energy sector.

On May 24, 2022, Greenvolt announce the 1Q2022 results. The key figures included in the announcement for the 1st quarter of 2022 were as follows: “Total revenues of 56.6 million euros (+167%, when compared to 1Q 2021) and EBITDA excluding transaction costs amounting to 22 million euros (+241%)” (Greenvolt, 2022e, p.7). This led to a gradual increase in the stock price over the subsequent two weeks, which was then followed by a decline to levels similar to those observed on the day of the announcement.

Approximately six months after the war started, on the 1st of August, “Augusta Energy SA, a joint venture between Greenvolt’s 100% owned subsidiary V-Ridium Power Group and German asset manager KGAL, a wind and solar portfolio located in Poland of 98 MWs was sold to Iberdrola for an Enterprise Value of €155 million” (Greenvolt, 2022f). This was GreenVolt's first divestment of utility-scale solar and wind projects, post IPO and V-Ridium Power Group acquisition, marking a significant milestone. This asset sale showcases the company's commitment to optimizing its portfolio and unlocking additional value.

Shortly after on August 18, 2022, Greenvolt's stock reached its peak at €10.80 per share. This landmark reflects the company's strong performance and the continued demand for green energy supplies due to growing concerns with the electricity supply from the traditional sources, namely from plants in Russia. Investors recognized

Greenvolt's efforts in expanding its renewable energy portfolio and positioning itself as a key player in the industry.

As illustrated in Figure 5.3, despite the initial positive outlook and robust performance in the first half of the year, Greenvolt encountered a downturn in the latter part of 2022. It followed a consistent trajectory aligned with the promising first quarter which was reinforced by the positive announcement of the first half results on September 7. However, the company's performance took a downward turn, indicating a shift in its course during the final period of the year.

This culminated in a significant setback when its stock price reached its lowest value of the last quarter on October 13, 2022, plummeting to 6.91€. Just one month after the year's peak added to the concerns among investors. The institutional presentation and presentation of results of the first nine months that followed this event may have contributed to regain momentum and stabilize the company's financial position. The stock price finished of the year at €7,80.

In 2023, Greenvolt's stock showcased resilience and exhibited moderate growth until the stock hit its highest level at €8.90 per share on January 24, 2023, as positive market dynamics and the company's strategic initiatives attracted investors.

After this point, the stock experienced intermittent periods of volatility, yet the overall trend remained consistently negative. On the initial day of 2023, the share price stood at €8.18. By the conclusion of the analysed period, July 15, 2023, the share price had declined to €6.10. Determining the precise causes for this downward trajectory is challenging. However, it is worth noting that investors may have become disheartened or disillusioned following the presentation of the 2022 results on March 23. Subsequently, on the 27th of the same month, the stock reached €6.04.

Recently the stock has been experiencing a temporary decline, with the lowest point recorded at €5.85 per share on July 10, 2023. This current dip can be attributed to profit-taking and market corrections following a period of strong performance.

Overall, over the course of two years, the stock prices of Greenvolt continued to show resilience, closely mirroring the value of the first trading day as exhibited in Figure 5.3. Remarkably, the stock has never dipped below the initial open price, and its most favourable valuation occurred during the summer of 2022.



Figure 5.3: Greenvolt's daily stock price through the first two years of trading.

Source: Prepared by the author based on Greenvolt's stock prices from Euronext Lisbon.

Greenvolt's stock performance reflects, nonetheless, the inherent volatility of the stock market and the influence of various factors, including market sentiment, geopolitical events and company-specific developments.

5.4. IPO Results

In 2021, Greenvolt successfully raised approximately 475 million euros through its participation in the Portuguese market and the debt capital market. Out of this total, 205 million euros were secured after the IPO, reflecting continued investor interest in the company (Greenvolt, 2022b). The IPO was responsible for a net cash inflow of €149.5 million, according to the Prospectus published in June 2022.

Notably, between the IPO and December 31, 2021, approximately 30.1 million Greenvolt shares were actively traded in the market, indicating a significant level of market activity and investor engagement (Greenvolt, 2022b).

5.5. Investment rounds and Green Bonds after the IPO

Financial sustainability is a key focus for the company, and it has demonstrated its commitment through pioneering, in Portugal, initiatives in the issuance of green bonds. The company's first green bond release took place in February 2019 through one of its subsidiaries.

Later, on the 26th of July of 2021, shortly after the IPO, the company announced a capital increase by more than €19.4 million with the issue of new shares, after the managers exercised the Greenshoe option, “options that are common in equity offerings and that allow the underwriting syndicate flexibility to increase the issue size.” as defined in Bessembinder et al. (2022), of 4,588,235 shares at a price of €4.25 each (p. 2). On the 27th of July of 2021, Greenvolt's share capital increased to 267 million euros, according to Rocha (2021).

A year later, in July of 2022 a similar capital increase release was issued amounting to close to €100 million, having its demand for the new Greenvolt shares corresponded to around 186.8% of the offer. This showed how trendy and interesting for

the investors Greenvolt is. It also showed the leading board that the Green Finance path has been made successfully so far as the company shortly, two months after its IPO, was included in the PSI 20 index, an index “made up of shares issued by maximum 20 highest ranking companies in terms of free float market capitalization that should in principle have a minimum Free Float market capitalization of € 100 million.” (Euronext, 2018, p.3).

More recently, on November 2nd, 2022, Greenvolt introduced the Greenvolt Green Bonds 2027, a green bond loan specifically aimed at the general public. This operation, with an initial global value of up to €100 million, is intended to finance renewable energy and energy efficiency projects, aligning with the issuer's objectives. “During the term of the offer, which ran from 2 November 2022 to 15 November 2022, inclusive, there was an aggregate demand of €188.5 million, 26% above the revised objective of obtaining €150 million with this operation.” (Greenvolt, 2022g).

5.6. Greenvolt Performance vs PSI 20

On September 20, 2021, Greenvolt entered PSI 20, the stock market index composed of the 20 largest and most actively traded companies listed on the Euronext Lisbon stock exchange in Portugal. It serves as a key benchmark and provides guidance for Portuguese companies, offering a notable example to assess the overall performance and trends of the stock market.

Given this, Figure 5.4 enables a comparison of the fluctuations in Greenvolt's stock prices with those of the PSI 20.

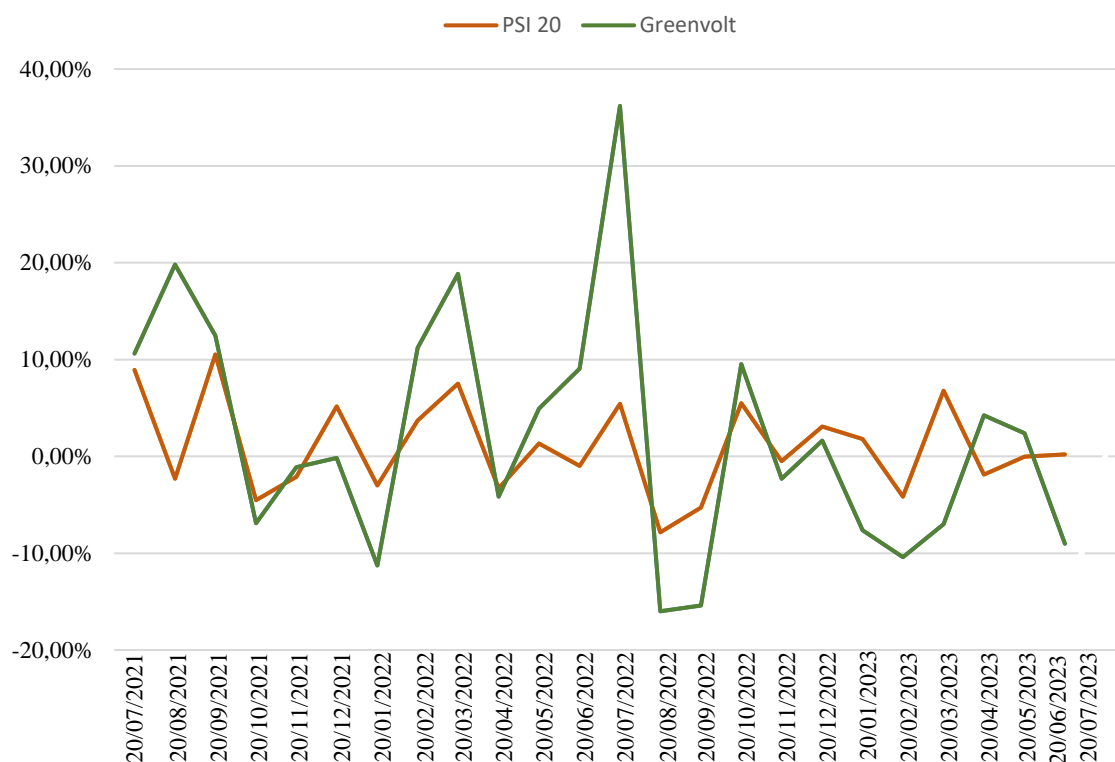


Figure 5.4: Comparison between Greenvolt’s stocks and the PSI 20 index over the last two years.

Source: Prepared by the author based on Greenvolt’s stock prices and the PSI 20 value from Euronext Lisbon.

The data presented showcases a notable pattern in the stock performance of Greenvolt, indicating that the company often aligns with the overall market trend, with few exceptions. Throughout the analysed period, Greenvolt's stock showed a thriving start from July 2021 to September 2021, achieving impressive gains of 10.61%, 19.80%, and 12.48%, respectively. During this phase, the PSI 20, exhibited a relatively weaker performance in comparison.

However, as the months progressed, Greenvolt's stock experienced fluctuations, occasionally deviating from the broader market trend. For instance, in October 2021 and January 2022, while the PSI 20 experienced negative returns of -4.52% and -3.01%, respectively, Greenvolt's stock also dipped significantly with returns of -6.90% and -11.26%.

Greenvolt's stock also demonstrated moments of outperformance when compared to the PSI 20. For instance, in February 2022 and March 2022, Greenvolt's stock

outperformed the PSI 20 with returns of 11.21% and 18.84%, respectively, while the market index registered gains of 3.69% and 7.50%. Similarly, in July 2022, while the PSI 20 recorded a positive return of 5.44%, Greenvolt's stock surged significantly higher, achieving an impressive 36.19% return.

Comparing the values between Greenvolt and the PSI 20 over the analysed period, it is evident that Greenvolt's stock generally exhibited more significant fluctuations compared to the market index. While the PSI 20 showed a mix of positive and negative returns, Greenvolt's stock displayed a wider range of gains and losses. This higher volatility in Greenvolt's stock can be attributed to its status as a relatively new green energy company operating in the dynamic and evolving renewable energy sector.

Nevertheless, this correlation with the market trend can be valuable for investors seeking opportunities that follow with the overall market direction while also consider Greenvolt's potential to outperform it during specific periods.

CHAPTER 6

CONCLUSION

The dissertation began by examining existing IPO theories, including classic ones by Ritter and contemporary ones from the 21st century, to gain a comprehensive understanding of the subject. Additionally, it focused on studying Green IPOs, specifically, with recent data and statistics to evaluate their performance, namely, in terms of underpricing and first trading day outcomes.

Greenvolt was the chosen Portuguese company to explore these topics, as a sustainable energy player. In line with its commitment to growth and expertise in the renewable energy sector, the company appointed João Manso Neto, an experienced director from Portugal's largest green energy player, EDP Renewables, as its CEO. His mission was to unlock Greenvolt's full potential by acquiring and developing foreign players, diversifying the business, and investing in its three pillars: Biomass, Wind & Solar, and Distributed Generation. Achieving these goals required significant investment, which was accomplished when Greenvolt successfully entered the Lisbon Euronext Stock Market on July 15, 2021. A month later, it joined the prestigious PSI 20 index, recognizing its performance and significance.

The literature review discussed earlier was employed to analyse its alignment with the observations made during Greenvolt's IPO. The focus was on studying the evolution of Greenvolt's stock prices after its market debut and assessing the company's overall performance from that moment on.

Greenvolt's IPO timing was strategically aligned with favourable market conditions, driven by increasing interest and demand for green energy solutions. Moreover, public announcements of the company's rebranding and the appointment of a new CEO contributed to the success of the offering, a construct supported by Lowry (2003) and Benninga, Helmantel, and Sarig (2005).

Motivations for conducting the IPO, such as raising equity capital for the firm's expansion and development, as emphasized by Greenvolt's CEO, and accessing new markets, products, or technologies, as explored by Pagano, Panetta, and Zingales (1998), were evident in the company's strategic decision-making process.

The analysis further revealed that Greenvolt's IPO costs were consistent with those reported in prior research, including Ritter (1987) and Larrain, Sertsios, and Urzúa, (2021). These costs incorporate expenses related to contracting underwriters, legal advisors, and auditing and accounting services.

Regarding the first day of trading in the stock market, one of the most common phenomena in IPOs was observed: underpricing. Upon its IPO, the shares started trading at €4.55 per share before closing at €4.69. Although Greenvolt is a newly established green energy company its IPO exhibited a slightly lower underpricing compared to values reported by Anderloni and Tanda (2017). The degree of underpricing was relatively lower than the average, most likely thanks to its smaller size and development stage.

Greenvolt's stock market journey has been marked by fluctuations and milestones. In 2021, the stock experienced bullish and bearish trends, reaching its highest peak at €7.08 and lowest point at €4.38, a month after the war in Ukraine had started. In 2022, it reached €10.80, reflecting strong performance and recovery of confidence in the market and in renewable energy initiatives. However, it experienced a downward turn in the latter part of the year, reaching €6.91. In 2023, it experienced moderate growth, reaching its highest level at €8.90, but faced temporary declines. Despite these fluctuations, Greenvolt consistently has maintained a value above its initial open price, showcasing its enduring performance in the renewable energy sector.

In comparison to the reference Portuguese market index, PSI 20, Greenvolt's stock displayed higher volatility, plausibly attributed to its status as a young green energy firm. Despite this, the stock demonstrated consistency in response to market trends, which proved favourable for investors.

Considering Greenvolt's industry, there is a strong likelihood of a positive long-term trend, given the increasing impact of climate change, the widespread adoption of electric cars, and the ongoing shift away from fossil fuels. With confident leadership, a goal-oriented administration, extensive expertise, and a wealth of experience, Greenvolt is poised to thrive not only in the Portuguese stock market but also in its global mission.

6.1 Limitations

This dissertation provides comprehensive insights into Greenvolt, its IPO and its processes, focusing on its evolution and implications. It contributes to understanding Green IPOs and their behaviour, yet it faces limitations.

The ongoing war in Ukraine and its implications on the supply of gas and energy from Russia, presents an unpredictable element that may influence Greenvolt's future stock performance. Depending on the developments in this event the investment in reliable energy sources may increase which could affect the valuation and market response to Greenvolt. As these geopolitical factors are beyond the scope of this study and remain uncertain, it is essential to acknowledge that their potential influence on Greenvolt's long-term stock performance cannot be definitively determined at this time.

6.2 Future Research

Greenvolt's IPO was only launched 2 years ago so to further this study, it would be of great interest to examine the long-term effects of the market exposure and the war in Ukraine on Greenvolt's stock performance. While the company's stocks experienced significant appreciation in the short term and later stabilized at lower values in the summer of 2023, their long-term impact remains unknown. Understanding how the war might influence Greenvolt's stock performance over an extended period and how the valuation of the company will fluctuate would provide valuable insights for future analysis of Green and traditional IPOs.

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