MEASURING IMPACT

A CASE STUDY OF IMPACT METHODOLOGIES IN THE NORDIC PRIVATE EQUITY MARKET

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Abstract:

We examine how actors in the Private Equity market define Impact, and how Impact assessments and methodologies are used in practice to source and underwrite investments. We use a case study to gain insight into Impact investing within the world of Private Equity. Our study finds that Impact investments are similar to traditional Private Equity investments. The main difference is that Impact investments tap into the sustainability megatrend with either an environmental or social objective. Impact is measurable through various metrics, ranging from qualitative to quantitative. Quantitative measures and scorecards are preferred to facilitate comparability across investments and funds. We conclude that the primary role of an Impact framework is to signal intentionality and authenticity.

Key words:

Impact Investing, Private Equity, Impact Methodologies, Verdane, Case Study

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Abbreviations

Abbreviation	Definition
AUM	Assets Under Management
ESG	Environmental, Social, and Governance
EU	European Union
GHG	Greenhouse Gases
GIIN	Global Impact Investing Network
GP	General Partner
LP	Limited Partner
PE	Private Equity
SDG	Sustainable Development Goals
SFDR	EU's Sustainable Financial Disclosure Regulation

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1. Introduction

The sustainability megatrend is apparent in all aspects of society. Regulators and market participants continuously develop directives and frameworks to accelerate the shift towards sustainable practices. The EU has moved to standardise the language and reporting of green activities through the EU Taxonomy ("Taxonomy") and the Sustainable Financial Disclosure Regulation ("SFDR"). To achieve a sustainable future, all must contribute and take responsibility, including the Private Equity ("PE") industry. The PE industry ranges from Venture Capital ("VC") to Buyouts. Preqin estimate the total assets under management ("AUM") to be USD 4.9 trillion in 2022, up from USD 4.2 trillion in 2021. Further, Preqin projects the total AUM to exceed USD 7.6 trillion by 2027 (Preqin, 2023). Roughly 10,000 PE firms worldwide oversee 20 million employees at 40,000 portfolio companies (Eccles et al., 2022). Due to the size and importance of the PE industry, it now holds a crucial role in modern finance and society. Its active participation is apparent in multiple societal functions, including tackling climate and social issues. According to the World Economic Forum (2022), the PE industry is at a critical inflexion point, where market participants can benefit from promoting a sustainable agenda and responding to evolving societal goals. The PE model provides advantages over public investors regarding capital deployment in the sustainability megatrend due to active ownership, majority control, longer holding periods, and less public scrutiny. Against this background, PE has moved beyond its traditional Wall Street niche (Eccles et al., 2022). A new era of Private Equity, referred to as "Private Equity 4.0", has started taking shape (Indahl and Jacobsen, 2019). A growing number of firms adding environmental, social and governance ("ESG") factors to their existing value creation levers characterises the era.

> "Across our clients, we see ESG becoming a competitive differentiator and driver of returns." (McKinsey, 2023)

The proportion of total private capital allocated to managers with an investment policy including ESG issues rose to 66 percent in 2022, marking a new high (McKinsey, 2023). Simultaneously, global AUM earmarked for ESG activities exceeded USD 100 billion. During the last decade, this figure has grown exponentially at a compounded annual growth rate ("CAGR") of 35 percent. Moreover, as the segment matures, dedicated ESG funds increase in size. Nine of the 13 largest ESG-dedicated funds with an AUM exceeding USD 2 billion have closed in the last two years (McKinsey, 2023).

A subset of these ESG-focused PE funds is Impact funds. The Global Impact Investing Network ("GIIN") defines Impact investing as investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return (GIIN, 2023). However, even though intentionality and measurability are core aspects of the definition, a measurement gap persists. Currently, no single globally adopted and standardised way of measuring and quantifying Impact exists. Nevertheless, there are several methods used, and more developed continuously. To standardise reporting of sustainable practices, the EU developed the SFDR, which includes sustainability classifications of funds. An Article 9 classification indicates that the fund has sustainability as its primary objective. Therefore, the SFDR could be used to identify Impact funds. However, multiple drawbacks exist with equating Article 9 funds with Impact funds. Firstly, the regulation only applies to funds marketed in the EU. Furthermore, the fund managers themselves classify the funds, and to comply with the requirements extensive reporting is needed. According to Bain & Company (2022), the lack of specific data standards and best practices related to ESG measures hamper investors' ability to evaluate ESG performance consistently. Even where high-quality data exist, firms and institutions may lack the capacity to collect, analyse, and report on it (Bain & Company, 2022).

The purpose of this thesis is to examine how actors in the PE market define Impact and how Impact assessments and methodologies are used in practice to source and underwrite investments. Given Impact funds' rise in recent years, we aim to show how they differ from traditional PE funds and how GPs use Impact frameworks. This thesis aims to answer the following research questions through a case study:

1) How do Impact investments differ from traditional Private Equity investments?
2) How do Private Equity market actors define and measure Impact?
3) What is the role of an Impact framework?

This thesis aims to broaden the knowledge of Impact investments within Private Equity. Although Impact investing has grown rapidly in recent years, literature has yet to explore the phenomenon significantly. Höchstädter and Scheck (2014) find that benchmarks and ratings to measure Impact are continuously developed, but appraisals are typically subjective, which hampers the industry's credibility. Viviani and Maurel (2019) argue that value creation in Impact companies comes from synergies generated by their operations' hybridity, justifying Impact investing as a strategy. Our thesis aims to contribute to the literature by investigating how fund managers can quantify Impact and incorporate Impact methodology in investment decisions. To our knowledge, no previous study has aimed to investigate this.

The scope of the thesis is limited to the purposes mentioned above and will neither address the financial performance of Impact investments, nor the accuracy of current Impact measures. As Impact investing is a new phenomenon, there is currently a lack of data to investigate the aforementioned aspects of Impact investing. Further, the thesis focuses geographically on the Nordics as the region is at the forefront of the sustainability movement within the financial markets. Lastly, the study focuses on Buyout and Growth segment within PE. Due to confidentiality, all data cannot be disclosed. To the extent possible, sensitive data has been anonymised to enable a thorough analysis.

The study finds numerous similarities between traditional and Impact PE investments. General Partners ("GPs") and Limited Partners ("LPs") have the same financial return requirements and are unwilling to sacrifice returns for additional Impact. Moreover, there are similarities in the due diligence of targets, and fund structures are the same. The main difference is the investable universe, which depends on the GPs' Impact definition. Even though no market standard exists, most stakeholders rely on GIIN's Impact definition, which states that Impact must be measurable and intentional. Fund managers achieve measurability through qualitative or quantitative frameworks. Quantitative measures are preferred as they facilitate comparability across investments and funds. Besides, the role of Impact frameworks is to signal intentionality and authenticity. With a framework, the GPs showcase their commitment to Impact and secure the intentionality requirement in their investments.

The study consists of seven sections. Section 2 reviews previous literature and provides an overview of the current regulatory environment. Section 3 explains the methodology used to study Impact investing and how actors in the PE industry define and measure Impact. Section 4 presents results gathered from interviews with stakeholders in the PE industry. Section 5 contains a case study about Verdane, its Impact methodology, and investment in Cleanwatts. In section 6, we discuss the results and our findings. Section 7 concludes.

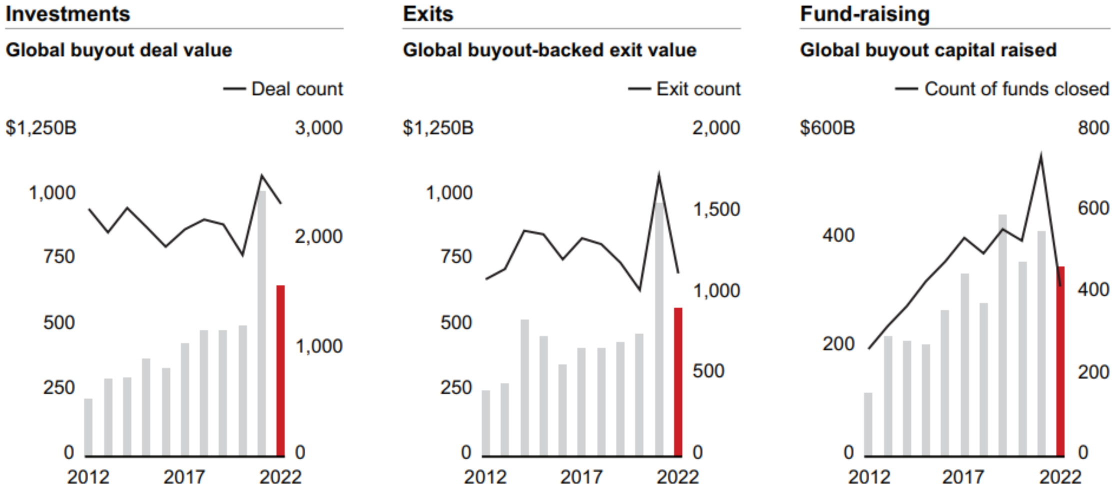
2. Literature Review

This section provides an overview of prior literature and the current regulatory environment of the PE industry, including theories related to Impact investing.

2.1. The Private Equity Model

Cendrowski (2012) defines Private Equity as medium- or long-term investments in companies not publicly traded on an exchange. Broadly, the PE industry is segmented into three categories: Venture Capital, Growth, and Buyout. VC firms invest in immature or emerging companies and typically do not obtain majority control. Growth firms invest in fast-growing companies at a later stage compared to VC, and Buyout firms generally acquire majority control of mature companies. PE firms are organised as partnerships or limited liability companies (Kaplan et al., 2009). The two most important stakeholders are the GPs and LPs. GPs manage the funds and their investments, whilst LPs commit the capital. LPs include institutional investors, such as corporate and public pension funds, endowments, insurance companies, and high-net-worth individuals. For sourcing and managing portfolio companies, GPs are compensated in two main ways: I) they earn an annual management fee, and II) profits are returned in a waterfall scheme, where GPs earn a share of profits referred to as carried interest. Usually, carried interest equals 20 percent of profits over a specific hurdle rate. The hurdle rate is frequently eight percent (Kaplan et al., 2009). A decade ago, the holding period averaged ten years (ibid.), but has now decreased to six years (Joenväärä et al., 2022). As seen in Figure 1, the Buyout market reached new highs in 2021, setting new records in deal value and the number of exits whilst still raising large pools of new capital from LPs. Moreover, the global PE dry powder, i.e., cash committed by LPs but not called by GPs, reached USD 1.2 trillion at the end of 2021 (Preqin, 2023). The large amount of unspent capital pressures PE firms to continue to source and underwrite transactions. Despite a decline in 2022, deal activity is expected to accelerate in the next couple of years. As of 2022, total AUM is estimated to USD 4.9 trillion, up from USD 4.2 trillion in 2021. The total AUM is projected to exceed USD 7.6 trillion by 2027 (Preqin, 2023). Roughly 10,000 PE firms worldwide oversee 20 million employees at 40,000 portfolio companies (Eccles et al., 2022).

Figure 1 – Overview of the Global Buyout Market, 2012-2022



Source: Bain & Company Global Private Equity Report 2023

2.1.1. Value Creation in Private Equity

PE firms aim to increase shareholder value and generate financial returns through active ownership and operational initiatives. Post-acquisition, these incentives can be categorised into three broad themes: I) Financial, II) Governance, and III) Operational engineering (Kaplan et al., 2009).

Financial Engineering

Financial engineering involves the design, development, and implementation of innovative financial instruments and processes (Finnerty, 1988). The term "Innovative" is used to describe non-trivial solutions to complex problems. In the context of PE, financial engineering refers to optimising the capital structure of the portfolio companies and consequently minimising the after-tax cost of capital (Berg et al., 2005). In practice, PE firms use leverage to optimise the capital structure when acquiring a company, known as leverage buyouts ("LBOs"). According to the trade-off theory, PE firms should choose a capital structure where the tax advantages of debt exactly offset bankruptcy costs (Myers, 2001).

Governance Engineering

Moreover, Jensen (1989) argues that leverage is essential to the PE governance model. Debt acts as a discipline mechanism for the investor, forcing the portfolio company to deal with issues sooner with less cash on hand. Furthermore, governance engineering refers to PE firms' active ownership, steering of the ownership agenda, and implementation of incentive structures. As evidence for active ownership, Kaplan et al. (2009) highlight that the board of directors ("BoD") of PE-owned companies meet more frequently compared to public peers. Concentrated ownership allows PE firms to construct incentive structures to align management with the ownership agenda. By issuing new equity tranches and option programs, these incentive programs are more sensitive to firm value than the PE firm's future payout (Kaplan et al., 2009).

Operational Engineering

Operational engineering refers to PE firms leveraging their internal expertise to increase efficiency and accelerate growth. Firms acquire internal expertise through selective hiring processes (Acharya et al., 2013). The expertise is further strengthened through extensive networks of industry advisors supporting on transactions. External advisors, including management consultants, investment bankers, and legal counsels, are used in the due diligence process and the strategic planning post-acquisition (ibid.). Throughout the holding period, operational engineering includes but is not limited to reducing costs, productivity enhancements, strategic repositioning, M&A sourcing, buy-and-build strategies, and the professionalisation of management (Døskeland and Strömberg, 2022).

2.1.2. Agency Conflicts in Private Equity

According to Clark and Morrell (2010), agency conflicts and asymmetric information characterise the PE industry. Agency relationships occur when one or more principals engage an agent to perform a service. In the PE model, agency relationships exist between portfolio companies' management and GPs, and between GPs and LPs. Through concentrated and active ownership, PE firms successfully manage to align the interests of management with those of the fund (Philippou, 2020). The carried interest model aligns financial interests between GPs and LPs and mitigates agency conflicts. However, Philippou (2020) argues that the lack of financial downside for the GP hinders the mitigating effects of the PE model.

GPs have an information advantage over LPs since they depend on performance reports provided by the GPs. While mutual funds investing in the public markets must make net asset values ("NAV") available daily, PE funds must not. Instead, the reporting frequency is agreed upon between the GP and LP and regulated in the Limited Partnership Agreement ("LPA"). LPs are entitled to an annual performance report, but GPs usually report quarterly. Even though reporting aims to minimise asymmetric information, an additional problem arises as the investments are private. LPs are ultimately dependent on measurements of fund performance which are subject to PE fund managers' discretion. Johan and Minije (2020) find that higher reporting frequency is associated with lower information asymmetry in performance reports. They argue that the LP should enforce more stringent governance by demanding higher frequency reporting in LPAs.

2.2. Sustainability in Practice

This section provides an overview of sustainability efforts through the lens of regulators, companies, and investors.

2.2.1. Sustainability in a Regulatory Context

Several different frameworks exists for companies to use when reporting their sustainability efforts and agendas (O'Dwyer and Unerman, 2020). The lack of standardisation and difficulty in comparing firms' sustainability reporting result from the co-existence of these various frameworks (Diaz-Sarachaga, 2021). Against this background, the EU Commission developed the EU Taxonomy. The Taxonomy is a green classification system intending to create a common language around green activity. Green, or environmentally sustainable activities, align with the EU's sustainability agenda and the SDGs developed by the United Nations. The Taxonomy aims to provide all actors in the financial markets with appropriate definitions for green or environmentally sustainable activities. The common language aims to reduce greenwashing and increase the security for investors to shift investments to sustainable projects and firms (EU, 2020). Through the lens of a single company, there are multiple ways to act in accordance with the Taxonomy and to measure environmental impact. The classification acts as a threshold for green activities or companies. It does not facilitate the measuring of a project's or firm's impact on social or environmental factors above the pre-determined threshold.

The SFDR is an EU regulation developed to standardise and increase transparency in financial products' environmental, social, and governance disclosures. Under the SFDR, all financial market participants and advisers are required to disclose how they integrate sustainability risks into their investment decision process and the impact of their investments on sustainability factors. The SFDR came into force on March 10th, 2021. All PE fund managers and funds raised or marketed in the EU after the SFDR came into force, regardless of size and investment strategy, need to comply with the SFDR. The SFDR requires all fund managers to classify their funds according to the level of sustainability integration. There are three main classifications: I) Article 6 funds need to disclose how sustainability is integrated into their investment decisions, II) Article 8 funds promote environmental and social characteristics but do not have sustainable investment as their primary objective, and III) Article 9 funds have sustainable investment as their primary objective (Morningstar, 2021).

2.2.2. Sustainability in a Business Context

An increasing number of firms have integrated sustainability or environmental issues into their core business strategy (Eccles et al., 2014). The additional objective of considering sustainability factors whilst generating financial returns goes against the findings of Jensen (2001), who argues that managers cannot cater towards multiple stakeholders through multiple objectives. As it is impossible to maximise in more than one dimension simultaneously, the managers are expected to make a reasonable effort to balance the different objectives, rendering them without a single objective. The views of Jensen (2001) are in line with Friedman (1970), who argues that the only social responsibility of a company is to maximise profits. His shareholder-oriented view is based on the reasoning that each shareholder can do good with the proceeds they receive. If a company produces negative externalities, the shareholders could use the proceeds to mitigate their effects. Friedman's (1970) views indicate there might not be a role for Impact investors or companies in the financial markets.

The views of who management is accountable to is an ongoing debate that commonly features the value maximisation versus the stakeholder theory perspective. An advocate for the stakeholder theory are Freeman et al. (2010), who argue that by meeting the needs of all stakeholders, management creates direct shareholder value. Viviani and Maurel’s (2019) findings advocate for the stakeholder theory as they argue that the dual nature of Impact companies can lead to innovative and entrepreneurial approaches that create additional value. Firms simultaneously aiming to generate positive, measurable social and environmental impact alongside a financial return could be defined as multidimensional enterprises (Viviani and Maurel, 2019). These enterprises have double, sometimes triple, purposes and are distinguished from purely social or profit-oriented businesses (Barman, 2015). Moreover, studies have shown that improving their environmental and social performance will increase a company’s financial performance over time (Margolis et al., 2009).

2.2.3. Sustainability in an Investor Context

Grim and Berkowitz (2020) classify sustainability-aligned investment strategies into three sub-categories: I) Socially Responsible Investing (“SRI”), II) ESG investing, and III) Impact investing. Renneboog et al. (2011) describe SRI as applying a set of investment screens to select or exclude assets based on ecological, social, corporate governance, or ethical criteria. Hence, SRI is based on negative screening (Palandjian et al., 2010). Leins (2020) describes ESG investing as an investment strategy considering ESG issues when valuing company stocks. ESG investing has transformed responsible investing from a normative attempt to increase an investment’s morality into a speculative practice of valuation (ibid.).

GIIN defines Impact investing as investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return (GIIN, 2023). Barber et al. (2021) highlight intentionality’s importance in Impact investing. An Impact investor must exhibit an intention to generate both positive social or environmental returns and positive financial returns. Greenwashing investments, which are branding for an appearance of Impact intentionality (Starks et al., 2017) and purely for-profit investments in sectors that associate with positive externalities, do not meet the intentionality criteria. Intentionality and measurability differentiate Impact investing from other forms of sustainable investment strategies. Moreover, according to Höchstädter and Scheck (2014) a difference between Impact investing and SRI is the nature and size of the investments. SRI is typically associated with investments in public assets, while Impact investing is generally direct investments using private capital (ibid.). Most Impact investors prefer to invest in growth- and venture-stage businesses. Investments in mature, publicly-traded companies are rare (Saltuk et al., 2013).

2.3. Impact Investing

Building on the classification of value creation strategies in Private Equity made by Kaplan et al. (2009), Indahl and Jacobsen (2019) argue that there have been three distinct periods in the history of Private Equity. During these periods, different value creation strategies have been popular. The 1980s was a period of financial engineering, and the 1990s was a period of increased focus on governance and operational levers. The early 2000s saw a period of M&A-driven growth. However, PE has recently moved beyond its traditional Wall Street niche, creating value by sharpening the focus and oversight of carve-outs from conglomerates or poorly managed private companies (Eccles et al., 2022). Indahl and Jacobsen (2019) describe this movement as "Private Equity 4.0", referring to a growing number of firms adding to their existing value creation levers by focusing more on ESG factors.

2.3.1. Integrating Impact into the Private Equity Model

The relationship between the GP and the portfolio company allows for an efficient steering of sustainability efforts, providing an opportunity to generate Impact. Deal teams help portfolio companies to identify relevant issues and provide solutions. Indahl and Jacobsen (2019) argue that PE firms who successfully incorporate ESG risks and opportunities into their investment and value creation strategies improve their financial returns while reducing risk exposure.

In contrast to traditional views on value creation in PE (Kaplan et al., 2009), Viviani and Maurel (2019) find that Impact investing value creation solely arises from the intrinsic effects of the portfolio company. Hence, indicating that the PE firm's internal expertise plays a minor role in value creation. However, the multiplicity of goals can generate specific and additional costs, inadequate governance structures, inefficient decisions, and ineffective incitation systems, leading the multidimensional company to destroy value (Viviani and Maurel, 2019). These findings suggest that the dual nature of Impact investing might be value destroying and not in line with the PE model. The multidimensional nature of Impact companies could create a mission drift towards the financial or the non-financial aspect of the company.

2.3.2. Historical Performance of Impact Strategies

Studies find contrasting results in terms of the performance of Impact strategies. Barber et al. (2021) find that Impact funds underperform traditional VC funds by 4.7 percentage points ex-post. Further, investors accept a 2.5 to 3.7 percentage points lower internal rate of return ("IRR") for Impact funds compared to traditional funds (ibid.). On the contrary, Cole et al. (2020) find that large Impact investors' long-run returns outperformed the market by 15 percent between the 1960s and 2000s. Jeffers et al. (2022) find that impact strategies have a lower market risk than VC and PE funds due to Impact strategies being less cyclical. The risk-adjusted performance of Impact strategies matches the ones of traditional funds and VC, although the absolute performance is lower. The Impact strategies have a different risk profile and factors compared to benchmarked funds and publicly-traded equivalents (ibid.).

2.3.3. Measuring Impact

Despite the possible misalignment between ESG-aligned business plans and maximising financial returns, more LPs and GPs seek ways to implement meaningful Impact investing strategies. However, there is a lack of objective and quantitative measures of Impact. Viviani and Maurel (2019) argue that the difficulties met when measuring and quantifying Impact constitutes one of the main obstacles for Impact companies to raise capital. There is a lack of clear criteria for judging the Impact threshold the investment needs to pass. Standardised metrics, benchmarks, and ratings to measure Impact are continuously developed, but appraisals are typically subjective (Höchstädter and Scheck, 2014). The Greenhouse Gas Protocol developed an accounting protocol on how to measure a company's greenhouse gas ("GHG") emissions through the concept of three scopes.[1]

[1] The Greenhouse Gas Protocol is a widely-used set of standards and guidelines for calculating and reporting greenhouse gas emissions.

Scope 1 refers to the direct GHG emissions from sources owned or controlled by the company. Scope 2 refers to the GHG emissions from the production of the electricity used by the company. Scope 3 refers to all other indirect GHG emissions (Greenhouse Gas Protocol, 2023). In extension, Mission Innovation developed the Avoided Emissions Framework (“AEF”), which identifies companies that contribute to reduced GHG emissions.[2] The framework quantifies positive climate impact by measuring the GHG emissions of a product or company compared to the market benchmark, thus calculating the avoided emissions of using the said product over the market option (Mission Innovation, 2023).

Mulgan (2010) argues that there exists obstacles when measuring social value, as it must be assumed to be subjective, malleable, and variable. Nevertheless, Mulgan (2010) does not account for environmental impact, which should be quantifiable. One of the main challenges when measuring Impact is to ensure comparability between activities or entities (Kroeger and Weber, 2014). Theoretically, one way to quantify Impact is through cost-benefit analysis, converting potential Impact into a single metric. However, while this offers a coherent approach, it is time-consuming and in practice requires many simplifying assumptions (ibid.).

2.3.4. Measurement Gap in Impact Investing

GPs and LPs currently encounter an Impact measurement gap. In traditional PE, investments are made with specific underwriting criteria which must be fulfilled. These are centred around return targets measured by IRR and Money on Invested Capital (“MOIC”), usually 25 percent and three times, respectively. Today, data and disclosure on ESG and Impact metrics are less transparent and standardised in private than in public markets, which has recently resulted in allegations of greenwashing (Klasa, 2022). When asking 103 LPs, 70 percent of respondents have ESG in their investment policies. Of those, 85 percent have a specific ESG policy related to PE allocations. Further, 93 percent stated they would decline an investment if it posed an ESG concern. Yet, fewer than 25 percent of GPs report on scope 1 or 2 emissions and 35 percent provide a full-scope report on all principal ESG indicators (Bain & Company, 2022).

[2] Mission Innovation is a global initiative aimed at accelerating clean energy innovation through increased public and private investment.

3. Methodology

This section describes the research design and methodology, and the methods used for collecting data, followed by a discussion regarding the quality of the research, the reliability and validity of the data sources and methodology.

3.1. Research Design and Methodology

This thesis discusses the differences between Impact investing and conventional PE investments, and how Impact can be measured and quantified. Impact investing is an emerging field, resulting in ambiguity regarding what is classified as Impact or not. By nature as an emerging field, there is a lack of consensus regarding how investors can measure, quantify, and report on Impact. New methods are continuously developed, adapted, and interpreted in different ways, increasing the complexity of answering the research questions of this thesis. Further, PE actors tend not to act according to generally accepted academic frameworks or theories.

> "Ah yes, the Modigliani-Miller theorem. I learned about that in business school. We don't think that way at our [PE] firm. Our philosophy is to lever our deals as much as we can, to give the highest returns to our limited partners." (Axelson et al., 2009)

Against this background, the research methodology is qualitative, and we use a case study to gain insight into Impact investing within the world of PE. Using a case study, this thesis aims to focus on a holistic and real-world perspective on the phenomenon of Impact investing (Yin, 2014). The study covers the Nordic Impact PE market, the development of Verdane's Impact methodology, and Verdane's acquisition of Cleanwatts.

3.2. Data Collection

The main data source of this thesis is interviews, alongside investment research produced by firms in the sample. Some interviews are conducted to research how practitioners in PE measure and quantify Impact of their investments. LPs and advisors are interviewed to provide the case study with multiple perspectives for a comprehensive picture of the phenomenon. Verdane employees and other stakeholders are interviewed to gain insight into the Cleanwatts transaction and the Impact due diligence conducted. An overview of the interviewees can be found in Appendix 9.1. The interviews were held using an exploratory semi-structured approach, meaning headline questions were shared with the interviewee prior to the interview and follow-up questions were asked at the time of the interview (Thomas, 2016). All interviewees received the headline question at least one day before the interview. From February 16th to March 27th, 2023, interviews were conducted in various formats, including both face-to-face and virtual meetings via Zoom and Microsoft Teams. The interviews were 30 to 60 minutes and were recorded, allowing for correct citations. Data was collected from public sources and through correspondence with PE fund managers to get an overview of the Nordic Impact PE market.

There are limitations to the data collection. First, all potential interviewees did not participate in an interview. Having more GPs interviewed could allow for a wider generalisation of the findings. Second, interviewees could not always share everything, which is not uncommon given the nature of PE. Lastly, there is a lack of publicly available data in the specific Impact and general PE segments.

3.3. Research Quality

To assess the research quality is important to consider the research validity, reliability, and ethics.

3.3.1. Validity

According to Yin (2014), generalising case studies' findings is difficult as they are samples in a dataset. However, it allows empirical light to be shed on current theoretical concepts or principles. Yin (2014) proposes three tests to ensure the case study has high levels of validity. The first test relates to construct validity, which identifies the correct measures for the studied concept. Multiple methods for data collection are used alongside interviews, including both public and non-public data to ensure high construct validity. The second test covers internal validity. Internal validity refers to how a study's design, methods, and procedures accurately measure the research question being investigated. High internal validity is achieved through triangulation, with multiple interviewees and data sources to study the Nordic Impact PE market. External validity refers to the extent to which the findings of a study can be generalised to other settings, populations, or contexts. As a qualitative study, no statistically significant results can be derived from a sample for statistical generalisation. An analytic generalisation is achieved by asking "How" questions, increasing the case study's external validity (Yin, 2014). Further, Yin (2014) suggests that case study research aims not necessarily to produce generalisable findings but to provide in-depth insights into a particular phenomenon or context that can inform further research. Moreover, external validity is increased by using thick descriptions. A thick description involves providing a detailed and contextualised account of the case that enhances external validity by providing readers with a rich understanding of the case and its context, which can aid in generalising the findings to other contexts (Geertz, 1973).

3.3.2. Reliability

Case studies can be prone to reliability issues due to the potential for researcher bias, the subjective interpretation of data, and the use of multiple sources of evidence. Yin (2014) recommends combining different data sources and data collection methods to increase the reliability of findings. The data for the case study is gathered from multiple interviewees and multiple data sources. Saunders et al. (2012) raise reliability issues regarding whether the case study is produced in a repeatable way with similar results. All interviews were recorded to reduce the risk of subjectivity and increase reliability.

3.3.3. Ethics

Saunders et al. (2012) define ethics in research design as the set of moral principles and values that guide researchers in conducting their research honestly, fairly, and responsibly. All interviewees were informed about the thesis' purpose before the interview was held. Since part of the interviews were conducted in Swedish, interviewees have approved and confirmed translations before being used as quotes in the thesis. Interviewees all had the option to remain anonymous, which was respected when they preferred.

4. Impact Investing in a Private Equity Context

This section presents results from company materials, interviews, correspondence, and discussions with various stakeholders in the Nordic PE industry.

4.1. Overview of the Nordic Impact Private Equity Market

Table 1 provides an overview of the Nordic Impact PE market as of April 2023. Article 9 classifications, given the lack of a market gold standard, are used as a proxy for Impact funds. Out of 210 active Buyout and Growth funds in the Nordics, the sample was narrowed down to the 34 funds closed after the SFDR came into force in March 2021. Out of the 34 funds, 20 specify the SFDR Article classification of their fund.

Table 1a – Number of Nordic PE Funds by SFDR Article Classification

SFDR Article	Number of funds	Percentage
Article 6	4	20%
Article 8	9	45%
Article 9	7	35%
Total	**20**	**100%**

Source: Preqin, 2023

Further, we collected the AUM of all the funds. We present SFDR Article classification and AUM for 10 funds that specify both figures.

Table 1b – Total AUM by SFDR Article Classification

SFDR Article	Number of funds	AUM (USDm)
Article 6	3	1,591
Article 8	5	2,228
Article 9	2	2,916

Source: Preqin, 2023

The number of green funds, Article 8 and 9, dominate the sample. In terms of AUM, Article 9 funds are the largest. However, due to the limited size of the sample, outliers such as Summa Equity III, with an AUM of over USD 2,600 million, significantly affect the results. The sample excludes large funds currently in fundraising, such as EQT X, which would affect the results in terms of AUM per Article classification.

4.2. GP perspective

To better understand how GPs define Impact and how they quantify it, company documents were analysed interviews were performed. Table 2 presents an overview of the fund managers in the sample, and a more detailed version can be found in Appendix 9.2. Table 3 presents the interviewees.

Table 2 – Overview of Fund Managers in the Sample

Fund manager	Alder	Trill Impact	FSN Capital	Summa Equity	Verdane
Type	Buyout	Buyout	Buyout	Growth / Buyout	Growth / Buyout
Year founded	2008	2019	1999	2016	2003
Founder(s)	Dag Broman Henrik Flyger Jonas Frick Thomas Nilsson Carl Hall	Jan Ståhlberg	Frode Strand-Nielsen	Reynir Indahl	Bjarne Lie
# of Investment Professionals	15	25	37	37	65
# of active Growth / Buyout funds	2	1	3	3	6
Total AUM, EURm	230	1,200	4,000	3,500	3,600

Source: Company websites, 2023

Table 3 – Interviewees

Interviewee	Firm	Title
Bjarne Lie	Verdane	Co-founder & Managing Partner
Erik Osmundsen	Verdane	Partner
Frida Einarson	Verdane	Head of Investor Relations & Partner
Axel Elmqvist	Verdane	Sustainability Lead
Eva Normell	Alder	Sustainability Manager
Pia Irell	Trill Impact	Impact Partner
Anonymous	FSN	Investment Associate
Jeremy Smith	Rede Partners	Head of Impact

4.2.1. Defining Impact

Alder

Alder defines Impact as positively affecting the environment based on activities aligned with the Taxonomy. As the definition of Impact suggests, Alder invests in companies with a climate-positive focus. They view social aspects of Impact or sustainability as enabling factors to deliver environmental impact.

> "Environmental aspects are core in our Impact definition, and we view the S [social] aspect of Impact more as enablers to achieve [Impact] and work with climate related issues. You need a sound social environment to attract and engage employees and good governance to manage the right things, but we focus on the E [environmental] in ESG." (Eva Normell, Sustainability Manager, Alder)

In the sourcing stage, Alder searches for companies with an innovative twist in their work to handle environmental questions, which enables them to deliver a positive impact. Companies are classified as Impact and pass the initial Impact assessment if Taxonomy-aligned activities generate a reasonably large percentage of revenues and there is a potential to scale these revenues significantly.

> "We monitor several themes proactively to identify the most promising companies for our portfolio. The team follows these themes closely to identify interesting trends and opportunities within them. Assessments are then based on where we see positive environmental impact. We look for companies with an innovative twist in their solutions." (Eva Normell, Sustainability Manager, Alder)

Trill Impact

Trill Impact uses the 17 SDGs as guidance when defining and assessing Impact. Since Trill Impact primarily operates in the Nordics and Germany, many SDGs addressing basic humanitarian needs are already met. The most relevant topic in these markets is environmental, specifically the use of renewable energy, energy efficiency or energy-smart buildings. Against this background, most companies in the Nordics and Germany operating in this space classify as Impact. Social impact is harder to define and varies on a case-by-case basis based on the subgoals in the SDGs. A company's products or services must positively impact the environment, society, or people in the market in which it operates. Further, a market gap or a need must exist that is not currently satisfied, and the Impact must be measurable and intentional. If the products or services of a company exist to deliver a positive impact, Trill Impact considers the intentionality aspect fulfilled. The positive impact can be environmental or social. For example, a company that offers cheap medical assistance in Sweden is not classified as Impact since high-quality healthcare is generally free for all. The same company in another country with a less sophisticated healthcare or welfare system could be labelled as an Impact firm. ESG factors such as gender diversity in executive management, scope 1 and 2 emissions, and bribery prevention are analysed. The ESG analysis or factors are not included in the Impact assessment but exist to identify responsible operations and act as hygiene factors.

> "In our Buyout fund, we [Trill Impact] define Impact based on the company's offerings – products and services. It must generate a positive impact for society, the environment, or the people, in the market which the company operates" (Pia Irell, Impact Partner, Trill Impact)

FSN Capital

FSN Capital defines Impact as companies with a positive Net Impact on the environment or a social aspect. The company's efforts must connect to at least one of the 17 SDGs. The company can further be identified as Impact if the potential future Impact is deemed large. A company currently not profitable but with technology, intellectual property, product, or service can therefore be classified as Impact even though the effect on the environment or a social aspect might be limited per the investment date. Due to the potential for large Impact in the future, FSN Capital considers higher risk investments in the Impact space compared to traditional PE investments.

Summa Equity

Summa Equity invests across three thematic areas: I) Resource Efficiency, II) Changing Demographics and III) Technology Enabled Transformation. Each thematic area represents a set of social and environmental challenges and a theory of change. Investments should align with the challenges for the relevant thematic area. Summa Equity links Impact to the 17 SDGs and alignment to the Taxonomy when relevant. Businesses should help solve specific environmental or social challenges to be deemed impactful. Summa Equity expects that at least 66 percent of revenues are Impact-aligned.

Verdane

Verdane's definition of Impact includes environmental, social, and governance aspects. Similar to the other firms, they connect Impact to the 17 SGDs. Verdane's mandate stipulates that they should focus on investments in Europe, which affects their Impact definition similar to Trill Impact. Companies that solve a specific social issue might not be viewed as impactful if they operate in Europe compared to other geographies. The company must showcase that its business operations will impact a large pool of people. For a deeper understanding of Verdane's Impact definition, see Section 5.

Key findings

- Impact definitions are in line with major frameworks such as the GIIN.
- GPs use SDGs to categorise Impact.
- Impact encompasses both environmental and social aspects. Environmental impact is overrepresented as it is easier to define and measure.
- Geographic focus affects what Impact is and companies need to impact large pools of the population.

4.2.2. Measuring Impact

Alder

The result of the Impact assessment showcases which SDGs are satisfied and which economic activities of the target company are Taxonomy-aligned. Alder measures Impact primarily by qualitative measures, but also includes quantitative measures such as the share of revenues originating from Taxonomy-aligned activities. Impact generated from social or governance aspects is not measured or tracked to a large extent. The qualitative result reduces the possibility of comparing different investments. The deal sourcing further includes ESG due diligence, primarily focusing on risk connected to ESG factors. Alder introduces quantitative measures which proxy for Impact after the transaction and include the percentage of revenues and research and development (R&D) sourced from taxonomy-aligned activities, GHG emissions, waste management, and water usage.

Trill Impact

Trill Impact uses the Impact Management Project's ("IMP") framework as the foundation for their Impact assessment.

Figure 2 – Impact Management Project's Framework

EFFECT		SIZE	LIKELIHOOD	
What	Who	How much	Contribution	Risks
• What outcome (+/-) is the business contributing to related to the SDGs? • How important is it to the stakeholders experiencing the outcome?	• Who experiences the impact? • How underserved is the targeted people / environment?	• How many stakeholders experienced the outcome, what degree of change do they experience and how long do they experience the outcome?	• What is the company's contribution to what would likely happen anyway? • What strategies will Trill Impact use to contribute?	• What are the risks that the company and Trill Impact will face related to impact? • What is the risk that impact does not occur as expected?

Source: Impact Review 2021, Trill Impact

The official framework is strictly qualitative. Trill Impact has built upon the framework's foundation and added a rating component, assigning a score of 1-100 for each category. The average score from all categories results in an overall Impact score. There is no limit for the lowest score to be classified as Impact, but all companies in Trill Impact's portfolio score above 70. Another dimension is the company's potential to scale its Impact, where high scalability is favoured. The company is rated with an Impact score for their products and services today, called the baseline, and another predictive score for the exit.

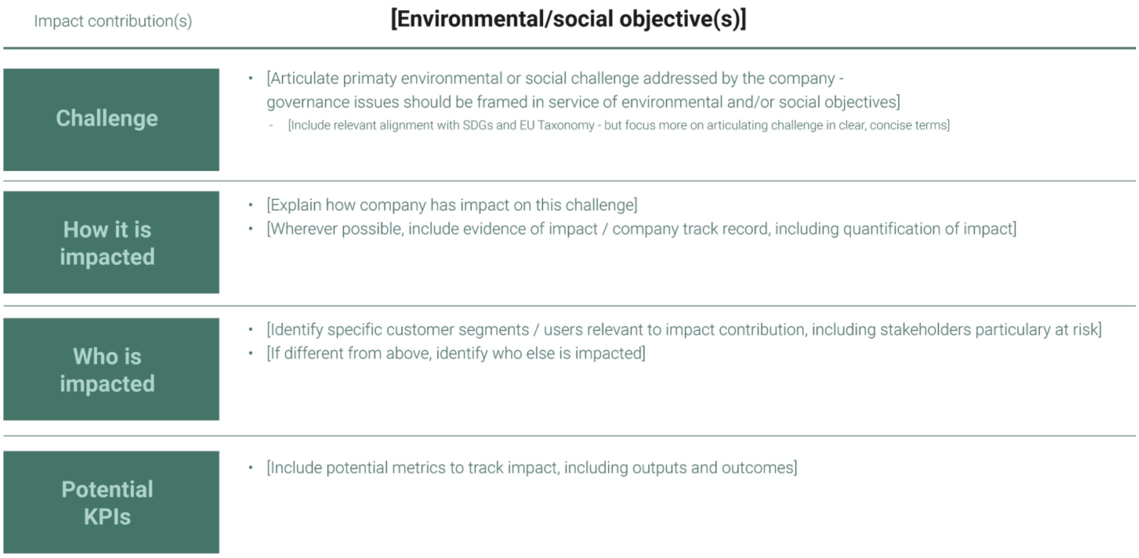
FSN Capital

FSN Capital uses a third-party service to measure Impact. The service provider is The Upright Project ("Upright"). Upright has developed a model and platform for measuring a company's Net Impact. Upright defines a company's Net Impact as the net sum of the costs and benefits that the company create. They divide costs and benefits into four categories: I) Environment, II) Health, III) Society, and IV) Knowledge. The model estimates the Impact of the company based on assumptions of its product and services. The model produces quantitative estimates in 19 subcategories and aggregates the findings to deliver the Net Impact measure. Upright gathers data by scanning available public information and using references in its internal database (Upright Project, 2021). Due to the lack of disclosure requirements for businesses, Upright's estimates are only as accurate as the information that is publicly accessible. FSN Capital does not have a lower threshold for an Upright Net Impact score for classifying a company as Impact. A loose benchmark is a Net Impact score of at least zero percent. However, as the score is estimated based on the company's current products and services, a lower Net Impact can be acceptable if the potential Impact is large and scalable.

Summa Equity

Summa Equity aims to assess a company's Impact throughout the entire investment process. In the initial Impact screening Summa Equity articulates how an investment seeks to achieve Impact.

Figure 3 – Summa Equity's Impact Framework



Source: Summa's approach to Impact investing, Summa Equity, 2023

Following the initial Impact screening, Summa Equity performs an Impact due diligence against three pillars: I) Impact Fundamentals, II) Impact Contribution, and III) Ability to Execute (See Appendix 9.3). The first pillar connects to the SFDR requirements and ESG risk assessment. The second part of the framework assesses the company's current and future Impact contribution. The result is quantitative and, in the case of a climate-friendly solution, based on avoided emissions. Finally, Summa Equity analyses the company's ability to execute the Impact agenda.

Verdane

Verdane has developed a proprietary Impact Scorecard, which allows them to quantify, measure and compare companies' Impact. The score centres around I) Intentionality, II) Measurability, III) Scalability, and IV) Risk. Verdane has a team of operational experts focusing on quantifying and measuring a company's Impact. During the due diligence phase, the team assesses the target and assigns it a score between zero and 100 in each category. To pass Verdane's Impact Investment Committee ("Impact IC"), the target must score at least 70 on average, with a minimum of 50 in each category. If the target does not meet these criteria, Verdane does not invest, no matter how attractive the return profile is. With the Impact score, Verdane aims to identify the companies with the highest Impact and return profile. For a deeper understanding of Verdane's Impact score, see Section 5.

Key findings

- GPs use an Impact methodology to identify the Impact of an investment. Impact assessments can be both qualitative and quantitative.
- Impact frameworks or scores are used to steer investment decisions.

4.3. LP Perspective on Impact Investing

To better understand how LPs define and allocate capital to Impact GPs, we conduct interviews with AP6, Mercer, Julius Baer, and Rede Partners. Table 4 presents an overview of the interviewed firms. Table 5 presents the interviewees.

Table 4 - Overview of Interviewed Firms

Firm	About
AP6	AP6 is a Swedish LP that manages a portfolio of investments in unlisted companies across various sectors, including healthcare, technology, and consumer goods. With a long-term investment horizon, AP6 seeks to add value to its portfolio companies by providing strategic guidance and support.
Mercer	Mercer is a global firm that offers a range of services to institutional investors, including LPs. Its PE practice provides advisory services on fund selection, due diligence, and portfolio management.
Julius Baer	Julius Baer is a Swiss private bank that offers a range of wealth management services, including PE investments. Julius Baer's global network of Investment Professionals provides extensive expertise and insight into PE markets.
Rede Partners	Rede Partners is a UK-based placement agent and advisor that specialises in PE fundraising. They provide fundraising solutions to fund managers, including advice on fund structuring, marketing, and investor relations.

Source: Company websites, 2023

Table 5 - Interviewees

Interviewee	Firm	Title
Anna Follér	AP6	Head of Sustainability
Ania Manczyk	Mercer	Private Equity Specialist
Maddalena Orlandini	Julius Baer	Deputy Head Private Markets & Impact Funds Specialist
Jeremy Smith	Rede Partners	Head of Impact

4.3.1. Definition of Impact

AP6 lean on the existing frameworks in their definition of Impact. Reference frameworks include the GIIN, IMP, and the Operational Principles of Impact Management developed by the International Finance Corporation. Further, Impact connects to the products and services of the business. AP6 view ESG as the sustainability of the firms' operations and their direct effect on their environment, such as emissions from their offices or company cars, and their governance structure. Mercer defines Impact according to the major frameworks, meaning the investment should have an environmental or social impact in addition to its financial returns. Julius Baer defines Impact as additionality.

> Does the capital I am investing deliver more Impact than if I did not invest? (Maddalena Orlandini, Deputy Head Private Markets & Impact Funds Specialist, Julius Baer)

Private markets have an inherent advantage against public markets when it comes to additionality. Buying a small fraction of a company on the stock market has a low effect on the company, meaning additionality is low. A Buyout firm has the potential to transform and pivot the business to more sustainable practices and deliver real Impact.

Key findings

- LPs define Impact in accordance with dominant frameworks.
- Private markets are important when it comes to driving Impact.

4.3.2. Capital Allocation & Financial Returns

AP6 has an integrated sustainability strategy across all asset classes in their portfolio and does not distinguish between Impact and traditional investments in their capital allocation decisions. There are thresholds regarding ESG factors that all GPs must meet, and excess Impact does not necessarily increase the chances of acquiring capital from AP6. Therefore, the holistic investment strategy recognises Impact without using a separate Impact capital allocation. AP6 also recognises a funds SFDR Article classification but does not consider it when allocating capital. They have a cautious approach to SFDR classifications and take measures to ensure a fund meets all the criteria for their claimed SFDR classification. Investing in funds later accused of greenwashing is a considerable brand risk for AP6. They prefer fund managers to be prudent when classifying their funds. Evaluating the Impact PE market, AP6 have identified various ways GPs measure, perform and report on Impact. Without a standardised approach to Impact, AP6 finds it challenging to compare Impact funds, especially as different GPs specialise in different Impact aspects such as environmental or social. In their portfolio, AP6 is noticing more companies that could be classified as Impact than before, even though the funds currently are not proclaimed Impact investors. An explanation is that the fund manager or the company lacks the resources to report on Impact.

Mercer separates Impact from other PE investments and has an earmarked amount of capital deployed within the Impact sphere. In addition to their Impact investments, they have separate Impact mandates from part of their client base. The Impact mandates differ depending on the client and are closely related to the heritage of the family office or pension fund. For example, a family office with a legacy in pharmaceuticals is usually particularly interested in investing in healthcare. According to Mercer, a European fund manager would struggle to raise capital without a strong ESG focus. Over the last five years, there has been extensive ESG development and a shift towards Impact. Mercer sees a trend of an increasing amount of fund managers who automatically believe they have an Impact by having a robust ESG agenda. It could be a risk of increasing greenwashing as fund managers stretch the reported or assumed Impact of a company to justify investments.

> "You need to be comfortable with uncertainty if you are going to invest in Impact." (Ania Manczyk, Private Equity Specialist, Mercer)

As the ESG and Impact trends are long-term and make sense from a business perspective, GPs want to capitalise on consumer demand. To make the business sustainable in the long run, GPs realise they need to invest in the Impact space. LPs also realise this fact and are pushing GPs to focus more on sustainable businesses. Most LPs, including Mercer, do not want to sacrifice financial returns to achieve Impact, and the few that do are generally quasi-philanthropic foundations. As Impact is in line with many long-term trends, one should not need to sacrifice returns.

Julius Baer dedicates a subset of their capital to Impact. Nevertheless, they refrain from using the term Impact as certain clients still view Impact investments as concessionary capital in terms of returns. Julius Baer has the same return requirements on Impact investments as traditional investments. However, they believe there is an added risk with Impact as the investment universe is smaller than mainstream PE. In addition, Impact firms and funds tend not to have an extensive track record. This risk aspect will be mitigated in the near future as more Impact fund track records take form.

Key findings

- LPs have the same financial return requirements on Impact funds as traditional PE funds.
- The Impact investment universe is smaller than the one in traditional PE, inherently increasing the risk of its investments.

4.3.3. Capital Allocation & Impact Methodology

Jeremy Smith, Head of Impact at Rede Partners, classifies LPs into three categories: I) LPs allocating to sustainability and Impact from their generalist bucket, II) LPs having Separate Management Accounts ("SMA"), treating the capital as a separate fund, and III) dedicated Impact fund-in-funds.

> "Dedicated Impact fund-in-funds and LPs with SMAs are more focused on GPs methodology. The one on the far end [Generalists] might or might not care about the methodology. It might be enough for them that they get exposure to the megatrend. […] There's starting to emerge a trend where LPs seem to be OK as long as it is [SFDR] Article 9." (Jeremy Smith, Head of Impact, Rede Partners)

It is not a hard science, the Impact space. For example, the Impact assessments need subjective assumptions, meaning the assessment often cannot be replicated. Many GPs have good intentions and definitions of Impact, but do not have any experience. As a result, the Impact investments decisions are based on the strategy of the GP and their level of commitment to Impact as a firm. Assessing the culture of the GP is also subjective. Mercer identifies the number of Impact investments the GPs have made historically and the team they have built to increase the objectivity of their assessment.

> "If you know the GP from their main flagship fund, you can make that decision in a better way. If it's somebody you know is incredibly aggressive and where the work culture on a day-to-day basis is dreadful, then it's quite hard to buy into the fact that their Impact fund is a real genuine commitment." (Ania Manczyk, Private Equity Specialist, Mercer)

Mercer does not recognise an Impact score or Impact framework as the main driver when assessing the quality of an Impact fund. Mercer expects all Impact funds to do an Impact assessment and believe the SFDR will be the main driver to standardise this. Today, many GPs use the impact assessment as a tick-in-the-box exercise. According to Jeremy Smith, the Impact methodology removes subjectivity from the system by conveying intentionality. The Impact methodology therefore allows GPs to articulate the fund's strategy.

> "Regardless of the framework their using, you need to have that trust relationship with them. They need to evidence that their behaviour is genuine and in accordance with their commitments and frameworks, and not just delivering the report at the end of the year." (Ania Manczyk, Private Equity Specialist, Mercer)

> "Nobody likes everybody. Some people think TPG Rise and what they do with the Impact Money Multiple is the gold standard, some people think it's a black box which allows you to do anything you want." (Jeremy Smith, Head of Impact, Rede Partners)

Quantifying Impact is conceptually the best way to benchmark GPs. Nonetheless, we are not there today, according to Maddalena Orlandini, Deputy Head Private Markets & Impact Funds Specialist at Julius Baer. Environmental KPIs such as GHG emissions and energy efficiency are easier to design and measure than social KPIs. Still, there is no standardised way to measure these, which lowers comparability. Another aspect is resources, as the most impactful firms and funds can be small in scale and not have the capacity to measure or report on Impact. Against this background, the reported Impact of funds or companies is difficult to use as a basis for an investment decision. Instead, one must focus on the nature of the investment and understand the intentionality of the Impact investor. Adding additionality into the mix, one can get a better understanding of who can deliver real Impact.

> "Over time simpler standardised thresholds are an absolute stone-cold must have." (Jeremy Smith, Head of Impact, Rede Partners)

Key findings

- The role of the Impact GP is to give LPs access to the sustainability megatrend.
- LPs seek track record, trust, and authenticity. In lack of track record, the role of the Impact framework is to increase the perceived authenticity and intentionality.

5. Case – Verdane's Investment in Cleanwatts

This section provides an overview of Verdane, its background, investment strategy, sustainability agenda and development of its Impact methodology. This section further includes an outline of Verdane's investment in Cleanwatts to shed empirical light on how Verdane uses its Impact methodology in practice.

5.1. Introduction to Verdane

The history of Verdane dates to 2003, when Bjarne Lie led a spin-out from Four Seasons Venture. Four Seasons Venture was founded in Oslo and raised three funds between 1986 and 2000, pursuing early-stage direct investments in the Information and Communications Technology ("ICT") sector. Bjarne joined Four Seasons Venture's Oslo office in 2001 from PaperX, a VC-backed B2B marketplace of which he was co-founder and COO.[3] Prior, he was a Consultant at McKinsey & Company in London and a Research Associate at the European University Institute in Florence. After two years at Four Seasons Venture, he recognised the need to scale and shift the firm's focus towards mature growth assets. Together with Thomas Falck, they acquired a portfolio of 96 Growth companies from the Norwegian government. A new fund was raised to finance the acquisition, and as a result, Verdane was founded.

> "If we should operate in Norway, I realised that we should invest in the Energy sector […]. The Norwegian government tried to sell a portfolio of companies, like Industrifonden in Sweden. The portfolio consisted of Growth companies in the Tech and Energy sector. We therefore spun out and raised a fund to acquire the portfolio." (Bjarne Lie, Co-founder & Managing Partner, Verdane)

Since its inception, Verdane has made over 140 investments across ten funds and several co-investment vehicles. Verdane aims to be the preferred growth partner for technology-enabled and sustainable businesses. They perceive themselves as structural growth chasers and deploy behind three global megatrends: I) Digital Consumer, II) Software Everywhere and III) Sustainable Society. The Digital Consumer trend is powered by offline-to-online migration and interfaces becoming increasingly complementary. Verdane focuses on digital services, e-commerce, marketplaces, and sustainable

[3] The company was backed by APAX Partners and Insight Partners.

consumption companies in this segment. Examples of portfolio companies within this vertical include EasyPark, Instabee, and Mathem. The second trend is Software Everywhere, referring to software becoming a more integrated part of everyday life and normal business operations. In this vertical, Verdane invests in B2B software companies. Portfolio companies include HornetSecurity and Voyado. Lastly, Verdane invests in Tech-Enabled Sustainability to create a sustainable global society. In this segment, current holdings include Momox, Nornorm, and EVA Global.

> "We often talk about different stages of Verdane. Verdane 1.0 [Phase one] was up until the global financial crisis. Young, ambitions and aggressive. We took some Venture and Bioscience risk, and thought things were structural that in fact were cyclical. However, we did a lot of good Growth investments. Phase two between 2009-2011 was about reconciliation, who are we really, what works and what doesn't? Clarity increased during Verdane 3.0 [Phase three] and now we have Verdane 4.0 [Phase four] from around 2017-2018 with Elevate [Verdane in-house operations team]." (Bjarne Lie, Co-founder & Managing Partner, Verdane)

By investing behind these megatrends Verdane avoids investing in cyclical sectors that will experience periods of stagnated growth. Identifying structural growth and being able to separate it from cyclical growth is one of the key factors for Verdane, as it can be the difference between a great investment and a catastrophic one.

> "Because I have a background as a historian, I have always been fascinated by longer global trends." (Bjarne Lie, Co-founder & Managing Partner, Verdane)

> "The simple thesis that always have been fundamental for Verdane is that if you have a sector that in the future will take up larger part of GDP than today, it is probably an interesting sector for finding Growth companies." (Bjarne Lie, Co-founder & Managing Partner, Verdane)

By staying true to their underwriting philosophy, Verdane can showcase a strong track record. The track record was recently validated in the 2022 HEC Paris-DowJones Performance ranking. The ranking is closely monitored by LPs as it showcases which firms generated the best performance for their investors. Verdane is the highest-ranking European mid-market GP.[4]

[4] 13th globally. The sample includes funds which raised between one to three USD billion between 2009-2018.

5.1.1. Investment Process

Verdane has EUR four billion in committed capital and underwrites equity tickets between EUR six to 150 million, depending on the fund. As of 2022, Verdane currently invests from three funds: I) Capital X, II) Ebba II, and III) Idun I ("Idun"). The funds invest in the same geographies and companies in one of the three global megatrends mentioned above. The Verdane Capital funds engage in portfolio acquisitions and mid-sized transactions, and the Edda funds solely focus on larger direct investments.

> "Verdane has three products but only one strategy." (Frida Einarson, Head of Investor Relations & Partner, Verdane)

5.1.2. Value Creation

Verdane increases company value through active ownership. Investment Professionals ("IPs") work closely with portfolio companies and have good visibility into the business operations through board seats. Verdane has established an in-house team of operational experts called Verdane Elevate that supports portfolio companies. With the increasing depth and breadth of its coverage, Elevate offers deal teams unique access to industry and analytical expertise throughout the underwriting process. They engage with the companies as early as in the due diligence phase. Furthermore, using Elevate the IPs contribute to building structural capital, benchmarks and knowledge sharing at Verdane generating long-term sustainable moats. Post-acquisition, the Elevate team performs targeted efforts to support the companies with specific operational issues such as go-to-market strategies, financing considerations, and sustainability.

5.2. Verdane as an Impact Investor

After the divestment of their last fossil fuel investment in 2015, Verdane invests only in businesses which will contribute to, and at a minimum not be negatively impacted by, a world economy moving towards a sustainable future. Internally, Verdane refers to this as the 2040 Test. Once Verdane has invested, they strive to sell a more sustainable business than the one they acquired. To date, Verdane has made 38 sustainable investments and implemented sustainability targets in all companies across the portfolio. The sustainability agenda became increasingly apparent in 2021 as they closed Europe's largest Impact Growth fund, Idun, at its hard cap of EUR 300 million. Several underlying factors led to the launch of this product. Verdane realised an increasing number of companies were founded with a higher purpose, either social or environmental. Moreover, LPs had a large appetite and demand to invest in Impact funds. The team performed a study which confirmed that launching an Impact fund was feasible.

Idun is smaller than Verdane's other funds and underwrites EUR six to 15 million equity checks. Verdane believes sustainability is a source of competitive advantage and wants to deploy as much capital behind it as possible. However, due to the limited investment universe, a smaller platform extension is preferable to shift the focus of other funds. Further, the size of the flagship funds does not allow for equity investments of around EUR 10 million, as the funds would become too fragmented. According to Jeremy Smith, Head of Impact at Rede Partners, launching a smaller Impact platform extension is a favourable strategy. Several larger fund managers have gone this route as it allows the firms to showcase returns and commitment to Impact before raising larger funds.

The Idun fund is classified as Article 9 under SFDR, meaning its core objective is to promote a sustainable agenda. There are several different requirements for funds that promote a sustainable investment objective. These requirements include good governance and assessing the fund portfolio against the "do no significant harm" principle specified in the Taxonomy. However, Verdane aims to surpass the minimum requirements of the SFDR Article 9 classification. Verdane's other funds classify as Article 8, so-called light green funds.

> "Idun, and potential new funds are so called EU Article 9 funds. They are regulated by the EU, and you have to comply with certain thresholds and standards to ensure that you are indeed impactful. The things we do with Idun are way beyond that because we want to push the envelope" (Erik Osmundsen, Partner, Verdane)

With Idun, Verdane demonstrates its commitment to drive positive impact through investments in companies whose Impact scales with growth. To this day, Idun has made six investments across Europe, including EVA Global, Nornorm and Cleanwatts. These companies are active in different sectors, but all have Impact at their core. Bjarne Lie argues that sustainable growth will be a structural growth opportunity, a theme which permeates every sector of the economy. Verdane is convinced Impact investments will generate at least market rate returns. Furthermore, in 2022 Verdane became the first PE firm globally to commit to neutralising all their future residual emissions with engineered permanent carbon removals, further demonstrating their commitment to sustainability.

> "Today more than ever, there is a growing pool of opportunities to combine technology and sustainability. We believe that investors like Verdane can take a leading role by supporting founders and management teams who can truly integrate sustainability into their business models and create value through Impact." (Bjarne Lie, Co-founder & Managing Partner, Verdane)

> "You see in research from Professor George Serafeim at Harvard and others, that there is a good basis for saying that Impact investing makes sense. We all want to be on the right side of history and it's good for the heart, but it also makes sense because it is good for the bottom line and good for business." (Erik Osmundsen, Partner, Verdane)

Backtracking Verdane's historical investments, it becomes apparent the investments that today would qualify as Impact have returned better than other investment. Thus, validating it is possible to combine financial returns and Impact. Being able to present this long-run track record to LPs was a key selling point and success factor when pitching and raising Idun.

> "When you go back and look at investments that Verdane has done you see that our general track record is stellar. It's really good, right? I mean both in terms of money multiples and IRR. The investments we have done, that today would qualify high on our Impact measure are just extraordinary. It's even higher." (Erik Osmundsen, Partner, Verdane)

> "These investments [Impact investments] had on average realised returns around five times (5x). It showed that it is possible to generate good returns and contribute to something positive. The track record allowed us to get investments from LPs that looked for trustworthy Impact GPs with solid track records." (Frida Einarson, Head of Investor Relations & Partner, Verdane)

5.2.1. Verdane's Impact Methodology

Verdane has specific underwriting criteria that must be fulfilled. These centre around financial return targets measured by IRR and MOIC, which are easily quantified and comparable across investments. However, measuring Impact requires multiple subjective assumptions regarding the scale and nature of the Impact. As Verdane strives to be as data-driven as possible, they faced a problem launching Idun. To solve this issue, Verdane spent a considerable effort with the Bridgespan Group, a spin-out from Bain & Company, to clarify their Impact investment methodology. Previously, Bridgespan Group had assisted in developing TPG Rise's Impact Multiple Framework, a framework many consider market-leading. By integrating an Impact methodology across the entire investment process, Verdane aims to identify companies creating genuine Impact.

> "Impact investing is still in the era where anything goes. Anyone could just claim to be impactful. It's hard to separate people who try to greenwash from people who are truly impactful. This is going to change in the years to come because all the LPs are going to demand it, all the banks are going to demand it because they will now obviously be faced with the EU Taxonomy, and society as a whole will demand it. What we can do as investors is just to try to stay ahead of that curve and try to influence Impact measurability to the best of our ability." (Erik Osmundsen, Partner, Verdane)

Verdane's Impact investment approach has five steps: I) Screening, II) Due Diligence, III) Investment Decision, IV) Active Ownership, and V) Reporting. The process is similar to the traditional PE investment process, with the addition of identifying Impact. Screening and Due Diligence are based on an Impact Scorecard (described in Section 5.2.2). Two separate ICs take the investment decision. The first focuses on the commercial and financial aspects of the target, and the second solely focuses on Impact. As of 2023, the Impact IC consists of Verdane's Managing Partner, Bjarne Lie, and the two Idun Partners, Erik Osmundsen and Christian Jebsen. Splitting the Investment Decision across two different decision-making bodies enables Verdane to be objective in terms of the Impact assessment. If Verdane operated a joint IC that discussed commercial, financial, and Impact aspects of investments, it could affect the discussions.

> "We really wanted it to be an independent separate discussion that is not sort of influenced by how well you like the case financially or not." (Erik Osmundsen, Partner, Verdane)

Active Ownership refers to setting an Impact value creation plan post-acquisition and working closely with management to follow up on the sustainability agenda. Impact-specific KPIs strengthen the alignment with the strategy. Verdane does not view KPIs as "tick-the-box" exercises. According to Verdane, a narrow focus on a few key areas is preferable over a broad sustainability policy when striving to drive Impact.

> "It's better that we all do more of what we are really good at. We need to differentiate and leave the check-the-boxes approach where you have 40 things that are impactful and we try to cross the boxes[…] The sum of everyone trying to go for the 40 is less than the sum of each of us doing one to three things really well" (Erik Osmundsen, Partner, Verdane)

5.2.2. Verdane's Impact Scorecard

When Idun was raised, several methods were used to measure and quantify Impact, one being the Impact Management Project framework. The score is based on five dimensions, but all were not relevant to Verdane as Impact varies across geographies. Verdane decided that no Impact score or measurement met the standards they wanted to achieve with Idun. Verdane ultimately settled on developing their own Impact Scorecard together with the Bridgespan Group.

> "We have decided to create our own measurement. There was a debate internally about if we are only creating the 20th method to measuring this stuff. In some ways yes, but there is no market standard today. If we are not able to identify the right [Impact framework] to unite on and we think we have a way to do it that is intellectually rigorous and in line with how we think about it when evaluating investments, then I think it is the right way to go rather than just go along with what somebody else came up with." (Reed Snyder, Principal, Verdane)

The proprietary Impact Scorecard underpins every deal in Idun. The scorecard is based on four main categories and six to nine sub-categories depending on if the company engages in social or environmental impact. The main categories include I) Intentionality, II) Measurability, III) Scalability, and IV) Risk (See Appendix 9.4). During the due diligence phase, the Elevate team performs a target assessment and scores the target between 0 and 100 in each category. To pass Verdane's Impact IC, the target must score at least 70 on average, with a minimum of 50 per category. Verdane aim to answer the following questions:

1) What is the Impact objective of this investment?
2) What is the status quo the company is displacing?

Intentionality refers to management's alignment with prioritising and growing the social or environmental impact of the business. Since Verdane's investment mandate allows them to do minority deals, it is important management aligns with the Impact agenda. The intentionality aspect is measured through in-depth interviews with management and assessed by Elevate's sustainability team.

> "Intentionality is important because a company may face different trade-offs and when the going gets tough there may exist an easy way out that is less impactful. If Impact isn't central, there might be a risk that they [management] will focus less on it over time, sort of an Impact drift. This is what we want to be insured against." (Axel Elmqvist, Sustainability Lead, Verdane)

The second and third aspects of the Scorecard are Measurability and Scalability, which are quantifiable in absolute figures. Elevate quantify the Impact in terms of carbon emissions avoided per year or social Impact over the holding period. This is calculated on an investment intensity basis, meaning they account for investment size and ownership stake. The results showcase how much Impact the investment is estimated to generate per invested dollar. Elevate also assess how Verdane as a firm can help scale the company's Impact. This accounts for a status quo scenario whilst trying to understand Verdane's additionality.

> "Measurability and Scalability are the dimensions we quantify to see how much avoided emissions or socioeconomic cost savings the company achieves over our holding period." (Axel Elmqvist, Sustainability Lead, Verdane)

For Verdane, it is essential to prove that an investment generates genuine Impact, which is only possible when it is measurable. Every year they defend their decisions to Adcom, a governance body including the largest LPs in Idun, and present how the companies perform on their Impact KPIs, which are chosen based on the Impact assessment results.

> "Every year we have to defend the Impact to our Adcom. Normally they would come in and look at the financial sides of an investment. But we on the Idun team, have to go through case by caser and prove why they are indeed impactful. How we can prove it, what is there Impact budget and how did we perform against it?" (Erik Osmundsen, Partner, Verdane)

Finally, the fourth parameter Risk refers to the likelihood of the company not achieving the calculated future impact or if there are any negative externalities associated with the investment. Verdane analyses the size of the risks and if they can help mitigate them.

5.2.3. Verdane's Impact Investing Strategy Going Forward

To compete in the Impact investing space, one must continuously develop to not fall behind one's peers. In the case of Verdane, they look to develop their Impact methodology further. Like discounting cash flows ("DCF") in company valuation, they are currently assessing ways to incorporate similar thinking into Impact measurement. The fund's investment in a company may enable positive Impact beyond Verdane's holding period. Even though society needs to reduce dependency on fossil fuels today, future reductions also generate positive externalities. Therefore, Verdane is trying to incorporate a discount factor for future Impact, like the methodology used in the DCF model.

5.3. Finding Cleanwatts

In Q4 of 2021, Verdane's Idun team aimed to identify attractive market segments through thematic sourcing and received inbounds from all major residential rooftop solar players in Europe raising growth rounds. Given solar energy's importance in the shift from fossil fuels, a team led by Reed Snyder, Principal at Verdane, started assessing these opportunities. Reed joined Verdane in August 2019, with previous experience from Goldman Sachs and Activant Capital Group. Given his background in the energy sector, he was best suited to lead the team. After due diligence, the team realised no company provided the possibility of building long-term recurring sticky customer relationships. Valuing the importance of customer love, Verdane decided to pull out of the deals. Reed's team identified the value play in the solar installer business as optimising the blue-collar workforce, leading the team to revisit the thematic sourcing template to identify other attractive parts of the value chain.

Following the market segmentation, Verdane focused on software-oriented companies instead of installation operators. Having proven a good track record investing in software companies, Verdane thought this would suit them best. Following this exercise, the team produced a longlist of potential targets and ranked the companies based on various parameters. From a structural growth standpoint, companies operating and building Renewable Energy Communities ("RECs") were deemed the most interesting.

5.3.1. Overview of the Renewable Energy Communities Market

An REC is a collective of prosumers with large solar arrays, and consumers. They produce and consume local renewable energy through peer-to-peer transactions using the existing infrastructure. RECs are vital to ensure stable energy grids and are a core part of the EU Renewable Energy Directive II ("RED II") (EU Commission, 2023). Overall, RED II is a comprehensive framework designed to promote the use of renewable energy in the EU and to help its member states meet the climate and energy targets for 2030. The directive facilitates the transition to a low-carbon economy by encouraging the production and consumption of renewable energy across the EU. Driven by the EU's net zero agenda, electricity demand is estimated to double by 2050, forcing production to increase by 150 percent. Given the current strain on capacity, this will require significant infrastructure investments, such as expanding the energy grid. Increased reliance on weather-dependent renewable energy sources, wind and solar, will further lead to increased unpredictability in the energy supply. Ensuring a stable supply of energy requires greater market flexibility. RECs address this issue by creating incentives to produce and consume local renewable energy. According to the RED II, RECs should have access to the general infrastructure and energy grid. As the energy is produced and consumed locally, less strain is put current grid, decreasing the need for infrastructure upgrades. Further, the directive eliminates the need for local grids, which is a favourable aspect from a Capex perspective. Since the directive spans all EU member states, companies operating RECs benefit from regulatory tailwinds.

> "Renewable Energy Communities [RECs] are in essence the capability to generate electricity locally and share the surplus locally to the community." (Luisa Matos, Co-founder & Chief Innovation and Product Officer, Cleanwatts)

5.3.2. Introduction to Cleanwatts

Verdane narrowed down the longlist of REC managers to four potential investments. One of the companies was Cleanwatts, a Portuguese company founded in 2018 following a carve-out from a large software-technology company. In 2022 they employed 60 people and, apart from Portugal, had limited operations in nine countries worldwide. With a legacy of developing software platforms for energy management, both for commercial and residential buildings, they developed a software solution for RECs. However, the market was not mature enough for a viable business case. Therefore, Cleanwatts decided to expand the business and develop RECs independently.

> "If we were just selling our technology and software, we wouldn't have a market because there weren't enough clients, and the market was still developing. We thought OK, let's start build the market and take care of everything from developing to managing communities [RECs]." (Luisa Matos, Co-founder & Chief Innovation and Product Officer, Cleanwatts)

Cleanwatts provides renewable energy solutions, such as solar panel installation, battery storage, and energy efficiency software, to residential and commercial clients who aim to reduce their reliance on fossil fuels. Their solutions help communities reduce their carbon footprint and save money on energy bills. The energy produced is cheaper than commercially available energy, as consumers purchase at the prevalent spot price. Hence, the transaction bypassed current actors in the market. Cleanwatts also provide ongoing maintenance and support to ensure their clients' systems continue to operate efficiently over time. Thus, their product offering is twofold, combing software with service.

> "What the software solution does is fundamentally managing the flow of electrons from producers to the consumer." (Emilio Costa, Senior Investment Associate, Verdane)

The establishment of RECs begins with solar panel installations for large property owners and industrial companies. Cleanwatts invests the Capex and owns the solar panels. In standard rooftop solar panel installations, the area covered is relatively low and the installed panels' output corresponds to the peak demand from the client. Cleanwatts cover the roofs with excess panels to generate an additional electricity surplus, which the consumers in the RECs buy. Apart from a one-time fee from actors in the REC at the start of construction, Cleanwatts receives recurring revenue from members and energy sales revenue. The regulatory tailwinds facilitate further growth opportunities for Cleanwatts. Moreover, the company holds a strong market position as an early mover in the emerging markets of RECs, facing limited direct competition.

> "If we end up with a renewable energy production system that is entirely concentrated in big wind park developments or massive solar farms in fields, governments would have to spend billions and billions of Capex to increase the transmission and storage capacity in order to get the energy to businesses and consumers." (Reed Snyder, Principal, Verdane)

5.4. The Investment Decision

After the due diligence process, the team reached out to Cleanwatts. Having connected with the CEO, the team discovered a potential strategic investor interested in acquiring Cleanwatts. Verdane realised they had to move swiftly to compete with the other party.

5.4.1. Commercial Considerations

First, they needed to investigate whether Cleanwatts was a good investment aligned with the firm's underwriting philosophy. After assessing the market before reaching out, the team concluded that the market was structurally growing. Through solid market and business knowledge, the team was able to impress Cleanwatts' management team through their decisive and swift approach.

> "They [Verdane] were super-fast to understand the business model and immediately noted that they were seeing what we were seeing for the future and our growth. This was really rare. Before we connected with Verdane we had plenty of meetings with investors focusing on the energy sector, but it was really hard to make them understand the value we were seeing." (Luisa Matos, Co-founder & Chief Innovation and Product Officer, Cleanwatts)

Whilst the Portuguese total addressable market ("TAM") in terms of digital annual recurring revenue ("ARR") was only around EUR 100 million, the European and US market together resulted in a TAM of over EUR 3,000 million. Despite favourable market conditions, historical revenue growth was flat, and EBITDA fluctuated. These financials were not characteristic of a Verdane investment. Nevertheless, at the time of due diligence, revenue growth was 65 percent, and the budget for 2022 indicated a potential yearly growth of 248 percent. Together with the expansion opportunities and a great management team, the growth was sufficient to meet the fund's criteria. The only outstanding item was to assess Cleanwatts' Impact.

5.4.2. Measuring and Quantifying Cleanwatts Impact

The Elevate team performed the Impact assessment alongside the commercial, financial, and legal due diligence streams. Given the business model, they quickly categorised Cleanwatts' Impact as environmental. The intentionality aspect was of extra importance because it was a minority investment. Verdane could risk investing in a company that could potentially pivot its business model if management did not align with the Impact agenda. After interviews with management, Verdane identified Impact as one of the organisation's core values. The business centred around three overarching purposes: I) accelerating the deployment of renewable energy, II) helping to mitigate energy poverty, and III) contributing to cheaper, more resilient grid infrastructure. Cleanwatts received the highest score on the intentionality criteria.

The next step in the analysis was assessing the current and potential Impact going forward. The Impact was assumed to scale linearly with company growth as production and consumption of renewable energy generated the revenues. The team calculated the avoided GHG emissions as part of the Impact assessment. By assuming the avoided GHG emissions per REC using their software solution, Verdane calculated Cleanwatts would help avoid 4.8 kilotons of GHG emissions in 2022, the equivalent of driving a car 1,000 laps around the Earth. Cleanwatts annual GHG avoidance was assumed to increase significantly during the holding period, driven by an expansion of RECs. Verdane had limited opportunities to significantly increase the depth of the Impact, given that it was already high. Verdane's ability to contribute mainly lies in identifying and recommending deployment in regions with relatively worse grid electricity mixes. Nevertheless, the status quo, e.g., without Verdane funding, would still generate substantial avoided GHG emissions. Lastly, the risk of the positive Impact not being achieved was analysed and the only potential risk was solar panel supply chain issues. Negative aspects of this value chain include intensive mining processes required to source the raw materials to produce panels and track records of exploitative labour conditions at suppliers. In conclusion, Cleanwatts passed the Impact assessment scoring 89 out of 100, sufficiently above the threshold of 70. Table 6 provides an overview of Cleanwatts' Impact score, and a detailed version of the review can be found in Appendix 9.5.

Table 6 – Cleanwatts' Impact Score

Category	**Score**
Impact intentionality	100
Measurability (Current Impact)	83
Scalability (Impact potential)	89
Impact risk	88
Total Impact Score	**89**

5.4.3. Investment Committee Decision

Following the granular analysis of the company and quantification of Cleanwatts' Impact, the deal team presented the investment to the two ICs. On the one hand, the Impact IC was relatively straightforward as all IC members agreed that the investment qualified for the Idun fund. On the other hand, concerns were raised around potential ESG risk due to the dependency on solar panels produced in China. The problem is industry-wide, as most current solar panels are produced in China and require rare earth materials. However, Verdane believed they could actively mitigate this risk by sourcing part of their panels from Europe and moving away from this dependency.

The commercial IC raised concerns about the Capex-heavy business model. Verdane typically invests in asset-light businesses, which are more scalable and less reliant on financing. Furthermore, the regulatory risk with potential delays in implementing REC-enabling regulations across the EU was considered a potential concern. Nevertheless, the market fundamentals, recent solid performance, and competitive position resulted in Verdane investing EUR 26 million at an undisclosed pre-money valuation in Cleanwatts.

5.4.4. Value Creation Post-transaction

Post-IC, the deal team created a 100-day plan to assist management in implementing strategically important initiatives to increase shareholder value. The first initiative was streamlining Cleanwatts' commercial approach to improve the customer acquisition process. The second initiative was to expand the company's operations to other countries. A key hypothesis in underwriting was that the company could grow organically internationally and tap into a larger market. The third initiative was refining the current financing structure for solar panel assets, including potential balance sheet financing and securitisation. Furthermore, they implemented better tracking through commercial and Impact related KPIs to help guide decision-making going forward.

> "The cherry on top was that they [Verdane] were not just providing the money, but also had a will and capacity to help us grow. They have this program [Elevate] where they can help us in particular areas of our operations like go-to-market, commercial, HR or product development." (Luisa Matos, Co-founder & Chief Innovation and Product Officer, Cleanwatts)

6. Discussion

The following section contains a discussion related to the research questions in Section 1. The questions are discussed based on reviewed materials, data, and interviews.

6.1. How GPs and LPs Define and Measure Impact

Academic literature regarding Impact investing is currently scarce. Clear market standards regarding Impact definitions, measurements, and assumptions are almost non-existing. Nonetheless, Impact investing is one of the fastest growing segments in the PE market as it taps into the global sustainability megatrend. Compared to traditional PE, the subset of potential investments is much smaller in Impact investing, resulting in less deal flow and smaller tickets. Targets must serve a higher purpose in addition to showing strong fundamentals, such as growth and margins. GPs and LPs definitions of Impact constrain the investable universe. Closest to a common denominator is the GIIN's definition:

> Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return. (GIIN, 2023)

The GIIN definition mentions measurability, which could be both qualitative and quantitative. For increased measurability, quantitative measures are preferable as the results are easy to compare. However, they do require assumptions that are subjective, affecting the result. The ultimate challenge arising from this situation is coordinating how assumptions are made and results are interpreted, like the frameworks for reporting financials, such as US GAAP or IFRS. Environmental impact is considered easier to measure and compare across companies than social impact. Figures such as avoided emissions or kWh saved are inherently quantitative in their nature and easier to associate with cash flows compared to patients reached in developing countries. Against this background, we note that a part of the firms interviewed solely focus on environmental issues. Differences in definition impose limitations to comparing the performance of Impact funds and thus could be an explanation for contradicting findings on Impact funds' performance in previous literature.

Additionality is a key concept in defining Impact amongst the interviewed GPs and LPs. By nature, private markets therefore have the upper hand over public regarding the possibility of driving additional Impact in businesses. Firstly, acquiring a controlling stake allows the investor to push an aggressive sustainability agenda. Secondly, outside the attention of public financial markets, businesses have the possibility to engage in long-term value and Impact creating strategies that, in the short term, might affect the financials negatively.

6.2. The Role of the Impact Framework

6.2.1. Impact Methodology as a Signalling Effect

Our findings highlight the importance of intentionality. As capital is scarce and more managers aim to raise Impact funds, track record and authenticity have become increasingly important for GPs to showcase LPs. Given that Impact investing is a new phenomenon as an outright strategy, track record is difficult to show. Therefore, generalist GPs like Verdane highlight the performance of prior investments that, by today's standards, would be classified as Impact. However, this is not possible for managers raising their first funds, like Summa Equity and Trill Impact. Instead, these GPs rely on the founding partners' and the team's track record and past experiences. For instance, Jan Ståhlberg, the founding partner of Trill Impact, was previously a founding partner of EQT. To prove their authenticity, the interviewed GPs have developed Impact methodologies and Scorecards, which they use to screen and evaluate potential investments. These scorecards vary widely between GPs, from qualitative to data-driven and quantitative. The jury is still out on which methods prove most successful, but all have the dual purpose of assessing potential Impact and convincing LPs of the GPs' authenticity. Pure Impact GPs show authenticity through Impact being their main operation. Generalist GPs moving into the Impact sector need to provide evidence to LPs that they are authentic and do not only use the Impact fund as a marketing tool. As a result of this, generalist GPs tend to develop proprietary Impact Scorecards. LPs prioritise authenticity, as being associated with GPs accused of greenwashing damages their reputation. The findings are based on GPs raising their first Impact fund. The findings might be different in the future as GPs and LPs will have built relationships, and track records are starting to emerge. As a result, the framework's role might shift to being less about showing authenticity and more of a tool used to comply with the SFDR.

6.2.2. Impact Methodology as an Investment Screening Tool

Besides highlighting managers' commitment to identifying genuine Impact, Impact methodologies help them invest in companies that will benefit the most from the global sustainability megatrend. In theory, Impact investing should generate at least the same returns as traditional PE investments, which all GPs and LPs interviewed alluded to. Investing behind megatrends reduces the cyclicality and the structural risk of the investment. Jeffers et al. (2022) confirm that Impact strategies have a lower market risk compared to traditional investments. However, the investments are associated with additional risk, given the smaller size of the investable universe and tickets. The trade-off lies in accessing the sustainable megatrend whilst being exposed to increased product risk. When the first Impact funds are fully divested, one can compare not only their financial returns but also their Impact. The Impact methodologies' main objective might therefore shift from signalling authenticity and intentionality to a key tool in identifying great business.

6.3. Verdane's Impact Methodology

The case study of Verdane and its investment in Cleanwatts demonstrate how a GP can develop and implement an Impact methodology in screening and underwriting. Verdane believes sustainability is a source of competitive advantage and doubles down on the megatrend, focusing on structural over cyclical growth. By developing a methodology centred around their Impact Scorecard, they set a clear baseline for Impact and showcase a clear commitment towards their LPs. Idun only invests in a company that scores at least 70 out of 100 in the framework. Furthermore, the developed methodology is flexible and can be used to evaluate both environmental and social impact. Verdane can compare portfolio companies' Impact with potential new investments and track how they develop over time as the assessment results in one single Impact score. However, like in traditional PE, there is an inherent agency problem due to asymmetric information in Impact investing. A lack of market standards for measuring Impact could result in GPs greenwashing investments towards their investors. At Verdane, the Elevate team assesses

Impact, not the deal team, which in theory, should minimise agency conflicts. In addition, Verdane is the only interviewed GP with two separate ICs. By separating the due diligence processes and the decision-making units, they stay true to their underwriting philosophy. The sustainability team and Impact IC are solely focused on Impact, and their judgment should not be affected by the return profile of a possible investment. Hence, the only difference between an investment in Idun and their other funds should be the ticket size and a smaller set of potential targets. However, the underlying commercial and financial unit economics should be the same, which is believed to be a source of competitive advantage as it is otherwise easy for the discussion to be influenced by one another.

The case study highlights how the Elevate team were able to measure Cleanwatts' Impact. As mentioned by interviewees at Verdane and other GPs, one advantage of investing in environmental impact is that it is easier to quantify. The nature of Cleanwatts' operations was one of the driving factors behind the company receiving a high Impact score. In essence, as the company grows, the avoided GHG emissions increase, contributing to the transition towards a sustainable future. One could question the need for a framework for these types of investments. Even though companies like Cleanwatts could be classified as Impact straightforward, the interviews highlight the importance of assessing the intrinsic Impact risks linked with an investment. For Cleanwatts, it was mainly linked to supply chain issues and reliance on Chinese production. The framework acts as a guideline for the due diligence process. Essentially, the framework sets a baseline for Verdane and helps them identify positive Impact factors and ways to mitigate negative externalities before the investment.

The immatureness of the sector was one of the main factors for Verdane to develop its own Impact Scorecard to help steer investment decisions. However, since their track record shows they have been able to invest in Impact companies without a scorecard, the question remains whether the Scorecard is needed. Verdane was not founded with an Impact agenda. Therefore, the Scorecard has played a role in showing their LPs their commitment to Impact, which was further highlighted by Verdane's IR team as a contributing factor for the successful fundraise of Idun. The interviewees at Verdane also highlight that a standardised and globally adopted Impact measurement methodology for all GPs would be preferred. However, due to the immaturity of the sector, they decided to drive change and implement their own. As the field is continuously evolving, Impact methodologies and frameworks will continue to develop in the near future.

7. Conclusion

This section concludes the findings and discussions, centred around the research questions below. Limitations and further research are in section 7.2.

1) How do Impact investments differ from traditional Private Equity investments?
2) How do Private Equity market actors define and measure Impact?
3) What is the role of an Impact framework?

7.1. Concluding Remarks

In our thesis, we aim to study the phenomenon of Impact investing in a Private Equity setting. Impact investments are similar to traditional PE regarding financial return requirements, holding period, and legal, commercial and ESG due diligence. The main difference is that Impact investments tap into the sustainability megatrend with either an environmental or social objective. Most GPs and LPs base their definition of Impact on the GIIN’s definition:

> Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return. (GIIN, 2023)

The Impact must therefore be measurable, and the Impact investor must show authenticity, intentionality, and provide additionality. The nature of the Impact differs greatly depending on geography. Impact investments in the Nordics primarily focus on environmental impact, such as energy efficiency and carbon removals. SDGs related to social aspects are largely fulfilled in the Nordics, reducing the additionality of social investments such as education and basic sanitary needs. Impact is measurable through various metrics, ranging from qualitative to quantitative. Quantitative measures like Verdane’s and Trill Impact’s scorecards are preferred as they facilitate comparability across investments and funds. They provide thresholds that act as benchmarks and baselines for future reference. Qualitative measures require less resources and are more time-efficient. However, they are less replicable as both the inputs and the analysis are subjective.

The role of an Impact framework includes signalling intentionality and authenticity to LPs. No traditional LP is willing to sacrifice financial returns for additional Impact. They all require at least market-rate returns. As most Impact funds or investors do not have an Impact track record, GPs use an Impact framework or methodology to attract investors due to the recent emergence of the industry. With a framework, the GPs showcase their commitment to Impact and secure the intentionality requirement in their investments. Furthermore, an Impact methodology can help generalist GPs simulate a synthetic Impact track record by backtracking their past investment through the framework.

7.2. Limitations and Further Research

We acknowledge that there are limitations to our study. Private Equity, as mentioned in the name, is characterised by private information and low transparency. There is a lack of publicly available market data, reducing the reliability of the market overview. Private Equity GPs are not required to publish extensive data about their investments, investment process, or funds. Further, there is a limited amount of Impact GPs in the Nordics. All identified major Impact GPs were contacted, but all could not participate in interviews.

The process of developing and producing our study has shed light on several areas we believe to be of particular interest for further research. Firstly, performing a similar study in other markets. For example, a comparison between the EU and other areas of the world where market participants are not required to comply with the SFDR. We believe the definition of Impact is similar across the globe. However, the nature of the investment should differ depending on the geography. Secondly, as track records start to emerge in the near future, a study investigating the achieved Impact and financial returns depending on the Impact framework or methodology used would be of great interest.

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8.5. Data Providers

Preqin

9. Appendix

9.1. Overview of Interviews

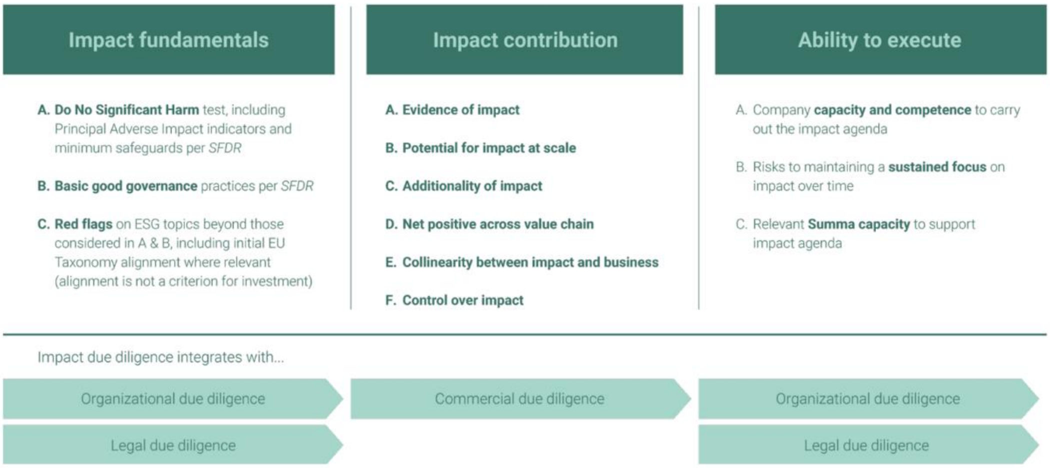
Interviewee	Firm	Title	Main Focus of Inteview	Date
Bjarne Lie	Verdane	Co-founder & Managing Partner	GP perspective	27-03-2023
Erik Osmundsen	Verdane	Partner	GP perspective & Cleanwatts	24-02-2023
Frida Einarson	Verdane	Head of Investor Relations & Partner	GP & LP perspective	09-03-2023
Axel Elmqvist	Verdane	Sustainability Lead	GP perspective	16-03-2023
Reed Snyder	Verdane	Principal	Cleanwatts investment	06-03-2023
Emilio Costa	Verdane	Senior Associate	Cleanwatts investment	06-03-2023
Fredrika Svanholm	Verdane	Senior Associate	Cleanwatts investment	06-03-2023
Luisa Matos	Cleanwatts	Co-founder & Chief Innovation and Product Officer	Cleanwatts	17-03-2023
Eva Normell	Alder	Sustainability Manager	GP perspective	16-02-2023
Pia Irell	Trill Impact	Impact Partner	GP perspective	16-02-2023
Anonymous	FSN	Investment Professional	GP perspective	09-03-2023
Anna Follér	AP6	Head of Sustainability	LP perspective	24-02-2023
Ania Manczyk	Mercer	Private Equity Specialist	LP perspective	09-03-2023
Maddalena Orlandini	Julius Baer	Deputy Head Private Markets & Impact Funds Specialist	LP perspective	20-03-2023
Jeremy Smith	Rede Partners	Head of Impact	GP & LP perspective	09-03-2023

9.2. Overview of Interviewed GPs

Fund Manager	Alder	Trill Impact	FSN Capital	Summa Equity	Verdane
Category	Specialist	Specialist	Generalist	Specialist	Generalist
Type	Buyout	Buyout	Buyout	Growth / Buyout	Growth / Buyout
Year founded	2008	2019	1999	2016	2003
# of investment professionals	15	25	37	37	65
Active Growth & Buyout Funds (post 2010)	Alder Fund I: SEK 1.1b, Article 9	Trill Impact Fund: EUR 0.9b, Article 9	FSN Capital IV: SEK 5.3b, Unclassified	Summa Equity I: SEK 4.7b, unclassified	Verdane Capital VIII: SEK 2.0b, unclassified
(Name, AUM, SFDR classification)	Alder Fund II: SEK 1.5b, Article 9		FSN Capital V: EUR 1.0b, Unclassified	Summa Equity II: SEK 6.7b, unclassified	Verdane Capital IX: SEK 3.1b, unclassified
			FSN Capital VI: EUR 1.8b, Unclassified	Summa Equity III: EUR 2.3, Article 9	Verdane Edda: SEK 3.0b, unclassified
					Verdane Capital X: SEK 6.0b, Article 8
					Verdane Idun Fund I: EUR 0.3b, Article 9
					Verdane Edda II: EUR 0.5b, Article 8

Sources: Preqin, Company websites

9.3. Summa Equity – Impact Due Diligence



Source: Summa's approach to Impact investing, Summa Equity, 2023

9.4. Simplified Version of Verdane's Impact Framework

Category	Screening questions
Context	What is the impact objective of this investment?
	How big is the problem the company addresses today?
	What is the status quo that the company is displacing?
Impact intentionality	Is leadership aligned with prioritizing and growing the social or environmental impact of the business?
Measurable *(Current impact)*	Does the company's impact scale linearly with company growth?
	What is the estimate of the annual impact on the environment at the time of investment?
Scalable *(Impact potential)*	How much is the company's impact likely to scale over time?
	How can Verdane grow the depth of the company's impact over time?
Impact risks	How likely is it that the company's positive impact is not achieved, and is Verdane able to manage the risks?
	Are there any material negative impacts, and if so, how significant are they?

9.5. Cleanwatts' Impact Score

Total impact score: 89%

Total impact	249 ktCO2e avoided	Avoided CO2 intensity	CONFIDENTIAL

Category	Screening questions	Answer	Score
Context	What is the impact objective of this investment?	• Cleanwatts accelerates the adoption of locally sourced clean energy by removing obstacles and friction points that hinder energy transition for local communities through facilitating the installation of new solar PV and behind-the-meter energy efficiency	N/A
	How big is the problem the company addresses today?	• Renewable energy deployment is one of the most important levers to achieve our decarbonization goals, in the gigatonne range	
	What is the status quo that the company is displacing?	• While renewable energy generation and consumption has increased in recent years, petroleum products still represent 35% of final energy consumption, which makes it the most consumed[1]	
Impact intentionality	Is leadership aligned with prioritizing and growing the social or environmental impact of the business?	• The company views impact as one of the business's core values, aligning around a three-pronged purpose of (i) accelerating the deployment of renewable energy (ii) helping to mitigate energy poverty (iii) contributing to a less costly, more resilient grid infrastructure.	100%
Measurable (Current impact)	Does the company's impact scale linearly with company growth?	• All revenue comes from impactful models, either directly establishing and managing RECs, selling software for REC management or energy efficiency software	83%
	What is the estimate of the annual impact on the environment at the time of investment?	• 4,784 tCO2e avoided based on 2022 estimated data	
Scalable (Impact potential)	How much is the company's impact likely to scale over time?	• Annual GHG emissions avoidance is expected to grow during the holding period, driven by the significant expansion of the number of RECs	89%
	How can Verdane grow the depth of the company's impact over time?	• Limited opportunities to significant increase the depth of the impact, but could potentially be done through identifying and deploying in regions with relatively worse grid electricity mixes	
Impact risks	How likely is it that the company's positive impact is not achieved, and is Verdane able to manage the risks?	• The company's core offering (greater deployment renewable energy) is unlikely not to be achieved	88%
	Are there any material negative impacts, and if so, how significant are they?	• Potential negative impacts of the solar panel supply chain, which is currently based mostly in China. Negative aspects of this value chain include intensive mining processes required to source the raw materials to produce panels, and track records of exploitative labor conditions at some suppliers	
		Total impact score	**89%**