

Master's Programme in Industrial Engineering and Management

# The strategic implications of renewable energy growth on real estate services in Finland

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Eeva Jokinen

Master's thesis  
2024

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**Title of thesis** The strategic implications of renewable energy growth on real estate services in Finland

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**Programme** Industrial Engineering and Management

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**Major** Strategy

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**Thesis supervisor** Assistant Professor Kimmo Karhu

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**Date** 26<sup>th</sup> of July 2024    **Number of pages** 78+2    **Language** English

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**Abstract**

Countries and companies are heavily investing in renewable energy to reduce carbon dioxide emissions and limit global warming. These investments materialise as development projects of renewable energy production and storage assets, and transactions taking place between operators developing and owning these assets. This new market shares similarities with the traditional real estate industry, where third-party service providers play a central role. As such, the renewable energy market could provide a new sector for real estate service providers to operate in.

This thesis studies the impact of renewable energy growth on the strategies of real estate services. First, it aims to identify current owners of renewable energy assets, particularly wind power, solar energy and energy storage solutions, examine transaction practices, and understand future development. Second, factors that affect the strategic decision-making of service providers when considering entry to the renewable energy market are identified and elaborated. The research was conducted as a qualitative interview study. The data was gathered from 12 expert interviews and then analysed using the Gioia method.

The findings of this thesis indicate that real estate service providers, particularly transaction advisors, can play a significant role in the renewable energy market if the industry continues to grow and develop, and service providers are able to enhance internal capabilities accordingly. The interviews highlight that the renewable energy transaction market is already active with advisors frequently used, particularly by investors. The future development of transaction volumes depends on the overall share of electricity consumption in Finland and macroeconomic and regulatory trends. Internally, real estate transaction advisors' current capabilities are aligned with the needs of the renewable energy sector. However, to successfully enter this new market, transaction advisors need to enhance their technical knowledge and understanding of renewable energy and expand their network of sector-specific investors.

This thesis assists real estate transaction advisors by providing concrete factors to consider prior to entering the new sector. Furthermore, the identified transaction patterns can assist advisors in identifying possible clients. Finally, this thesis introduces a novel research angle in the intersection of renewable energy, real estate and strategic management literature providing a foundation for future research.

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**Keywords** renewable energy, transaction advisory, professional service firms (PSF), strategic decision-making

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**Tekijä** Eeva Jokinen

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**Työn nimi** Uusiutuvan energian kasvun strategiset vaikutukset kiinteistöalan palveluihin Suomessa

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**Koulutusohjelma** Tuotantotalous

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**Pääaine** Strategia

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**Vastuupettaja/valvoja** Apulaisprofessori Kimmo Karhu

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**Työn ohjaaja** DI Tero Uusitalo

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**Päivämäärä** 26.7.2024    **Sivumäärä** 78+2    **Kieli** englanti

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### Tiivistelmä

Valtiot ja yritykset investoivat voimakkaasti uusiutuvaan energiaan vähentääkseen hiilidioksidipäästöjä ja rajoittaakseen ilmaston lämpenemistä. Investoinnit materialisoituvat uusiutuvan energian tuotanto- ja varastointikiinteistöjen kehityshankkeina sekä kauppoina, jotka tapahtuvat kiinteistöjä kehittävien ja omistavien toimijoiden välillä. Kehittyvä markkina muistuttaa perinteistä kiinteistöalaa, jossa kolmannen osapuolen palveluntarjoajat ovat keskeisiä toimijoita. Näin ollen myös uusiutuvan energian markkina voisi tarjota kiinteistöalan palveluntarjoajille mahdollisen uuden toimintasektorin.

Diplomityö tutkii uusiutuvan energian kasvun vaikutuksia kiinteistöalan palveluntarjoajien strategioihin. Työn tavoitteena on tunnistaa nykyiset uusiutuvan energian kiinteistöjen, erityisesti tuulivoiman, aurinkoenergian ja energian varastointiratkaisujen, omistajat, tarkastella alan transaktiotoimintatapoja ja ymmärtää alan kehitystä. Toisekseen työ tarkastelee tekijöitä, jotka vaikuttavat palveluntarjoajien strategiseen päätöksentekoon uusiutuvan energian markkinoille laajentumista harkittaessa. Tutkimus toteutettiin laadullisena haastattelututkimuksena. Työn aineisto kerättiin 12 asiantuntijahaastattelusta ja kerätty data analysoitiin Gioia-menetelmällä.

Työ osoittaa, että kiinteistöalan palveluntarjoajat, erityisesti transaktioneuvonantajat, voivat olla merkittävässä roolissa uusiutuvan energian markkinoilla, jos ala jatkaa kasvua ja kehitystä ja palveluntarjoajat pystyvät kehittämään markkinan vaatimia sisäisiä kyvykkyyksiään. Haastattelut korostavat, että uusiutuvan energian transaktiomarkkinat ovat jo aktiiviset ja neuvonantajia hyödynnetään usein, erityisesti sijoittajien toimesta. Transaktiomäärien kehitys riippuu Suomen kokonaissähköntarpeesta sekä makrotaloudellisista ja lainsäädäntöön liittyvistä trendeistä. Transaktioneuvonantajien nykyiset valmiudet vastaavat uusiutuvan energian sektorin toimijoiden tarpeita. Menestyäkseen uudella markkinalla transaktioneuvonantajien tulee kuitenkin kehittää teknistä tietämystään ja ymmärrystään uusiutuvasta energiasta sekä laajentaa sektorikohtaista sijoittajaverkostoaan.

Diplomityön löydökset tukevat neuvonantajia tarjoamalla konkreettisia kehitysalueita, jotka tulisi huomioida ennen uudelle sektorille laajentumista. Lisäksi tunnistetut transaktiomarkkinoiden toimintamallit voivat auttaa neuvonantajia mahdollisten asiakkaiden löytämisessä. Työ esittelee uuden tutkimusnäkökulman uusiutuvan energian, kiinteistöjen ja strategisen johtamisen kirjallisuuden risteyskohdassa tarjoten perustan tulevalle tutkimukselle.

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**Avainsanat** uusiutuva energia, transaktioneuvonanto, asiantuntijapalvelut, strateginen päätöstenteko

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## Preface/Alkusanat

Tämä diplomityö päättää kuusi vuotta kestäneet tuotantotalouden opintoni Aalto-yliopistossa, Otaniemessä.

Kiitos työni ohjaajalle, Tero Uusitalolle, mahdollisuudesta tehdä diplomityö innostavasta aiheesta ja muutenkin tärkeistä kokemuksista työelämässä myös ennen tämän työn aloittamista. Samoin kiitos valvojalleni, Kimmo Karhulle, selkeästä ja tehokkaasta diplomityöprosessista. Kiitos myös kaikille haastateltaville ajastanne ja mielenkiintoisista keskusteluista, joita sain kanssanne käydä.

Tämä diplomityö ja opintoni ylipäätään tulivat valmiiksi ystävien ja läheisten tsemppaamana. Kiitos Prodeko, PoRa ja niiden kautta löytyneet tärkeät ystävät hauskoista ja ihanista hetkistä viimeisen kuuden vuoden aikana. Kiitos äiti ja isä tuesta läpi koko 19 vuotta kestäneen koulutaipaleeni. Olen saanut teiltä tukea aina silloin, kun olen sitä tarvinnut ja toisaalta rohkaisua toimia ja tehdä päätöksiä omien arvojeni ja ajatusteni mukaan. Kiitos Ilari kaikesta tuesta niin opintojen ja dippaprosessin aikana kuin erityisesti elämässä ylipäätään.

Otaniemessä, 26.07.2024  
Eeva Jokinen

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## Abbreviations

EIA	Environmental impact assessment
FIT	Feed-in tariff
FWPA	Finnish Wind Power Association
IEA	International Energy Agency
IPP	Independent power producer
KTI	Kiinteistöalouden instituutti, <i>eng. Institute of Real Estate Economics</i>
P2X	Power-to-X
PSF	Professional service firm
REIT	Real estate investment trust

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# 1 Introduction

The following section introduces relevant background and the motivation for the thesis. The objectives, research questions, research approach and scope for the thesis are likewise defined. Finally, an overview of the thesis structure is provided. The goal of this section is to present what is studied in this thesis and why studying it is important.

## 1.1 Background and motivation

*“[The] world added 50% more renewable capacity in 2023 than in 2022 and next 5 years will see fastest growth yet.”*

*“Investors, financiers, and developers need to respond with faster and better funded renewables development. That holds the potential to accelerate renewable growth globally.”*

(IEA, 2024)

The world’s renewable energy capacity is growing at a significant rate and more assets for energy production and storage are expected to be built in the upcoming years as a reaction to global efforts to minimise carbon emissions (IEA, 2024). To meet the growth ambitions, major activity from various market operators, such as developers, investors, and financiers, is required, both globally and in Finland. For example, the currently planned investments in Finnish wind power amount roughly to EUR 200 billion (Confederation of Finnish Industries, 2024). Solar power investments and energy storage and battery technology investments are expected to reach EUR 4 billion and EUR 11 billion respectively (Confederation of Finnish Industries, 2024).

In practice, renewable energy investments will materialise as power plant and energy storage construction projects and transactions taking place during the lifecycle of the constructed power plants. The business based around projects and transactions has similarities with the business that has developed around traditional real estate, such as residential buildings and offices. Consequently, real estate sector operators, such as transaction advisors, have started to evaluate whether the growing new form of real estate, renewable energy power plants and energy storage, could offer a new strategic area in which to operate. In particular, transaction advisors could have a significant role in supporting collaboration between the various market parties and, on their account, support smoother transaction processes during the lifecycle of renewable energy assets, allowing them to contribute to the green transition.

The demand for real estate service providers has been increasing in general within traditional real estate sectors in Finland. This is due to the growth of the commercial real estate market as well as the entry of foreign investors. The share of international investors in the Finnish market has been increasing significantly, from 9.3% to 33.5% between 2013 and 2023 (KTI, 2024). The Finnish Institute of Real Estate Economics KTI (2024) highlights that especially foreign investors demand a high level of professionalism when dealing with investments and, hence, require the use of a third-party service provider. The increasing demand for service providers, combined with a possible new renewable energy sector to expand to, could offer an interesting new opportunity for service providers to grow their business as well as contribute to the development of the market.

While extensive literature on the renewable energy and real estate markets individually exists, the opportunities that lie in the intersection of the two remain relatively unexplored. This thesis aspires to bridge this gap by gathering insights from research of the two mentioned industries and integrating this with strategic management research. By delving into this novel area of research, this thesis seeks not only to explore the untapped potential of synergies between the renewable energy and real estate market but also to evaluate the strategic implications for real estate service providers.

Filling the research gap in the intersection of renewable energy, real estate services and strategic management, enhances understanding related to the evolving renewable energy market and the possibilities it offers to other industries. Expanding the existing understanding of the topic is important as countries and industries are investing significant resources to support the market's development. Additionally, the study provides insights to industry practitioners seeking to capitalise on the emerging market trends. Furthermore, the research supports the significant global efforts to transition towards sustainable energy production forms. Hence, this research is not only timely but also holds relevance in finding new opportunities within sustainable development.

## **1.2 Objectives and research questions**

The goal of this thesis is to study the possibilities the renewable energy market holds for a real estate service provider from a strategic perspective. To do so, the current state and development of the renewable energy market must also be studied from the point of view of ownership and transactions. Once the market's current state and future development is understood, the strategic implications for service providers can be recognised. The research can be split into two research questions.

The first research question focuses on the current state of the renewable energy sector and its development. The renewable energy market is growing due to regulations aiming to replace carbon-based energy forms with more sustainable production. In response, new power plants and assets for both producing and storing energy must be built. For new properties to be developed, owners and investors are needed. This study aims to understand how renewable energy asset ownership and asset transactions are currently organised. Furthermore, this research aims to understand how the identified ownership and transaction patterns will develop in the future. The first research question can be formulated as follows.

*RQ 1. How are the ownership and transactions of renewable energy assets organised today, and what changes are anticipated in the future?*

Once the renewable energy real estate market's expected development direction has been identified through the first research question, the focus of the study shifts to the potential the market holds for service providers. The decision of whether service providers should enter the renewable energy sector is affected by various factors. The second research question aims to study the current state of the factors that affect the decision-making of real estate service providers planning on diversifying their operations to the renewable energy market. The second research question can be formulated as follows.

*RQ 2. What is the current state of factors affecting the strategic decision-making of real estate service providers looking to expand to the renewable energy sector?*

### **1.3 Research approach and scope**

The research is split into two parts: a theoretical part and an empirical part. The theoretical part focuses on gathering relevant background information on the topic of the thesis: the renewable energy market, the real estate market and strategic management literature. The empirical part aims to gather new information from industry practitioners and experts and obtain evidence to answer the research questions. The empirical study is performed as a qualitative interview study and the Gioia method is applied to analyse the interviews and identify relevant findings (Gioia et al., 2013).

The renewable energy-related assets considered in this thesis are limited to wind power and solar energy power plants and energy storage units. These energy-related assets are chosen because they are well-established in the Finnish energy regulation and represent a growing segment in the energy market. Other renewable energy forms, such as hydropower and bioenergy, are excluded because the operators and assets involved differ significantly

from those of energy forms included in the study. Additionally, the study is geographically limited to assets located in Finland. Scoping the work to consider only assets within Finland offers a clear yet sufficiently large set of assets and operators to which the same legislation and regulations apply, thereby allowing drawing conclusions about a specific market.

Of the various types of real estate service providers, this thesis primarily focuses on transaction advisors' point of view. This perspective is chosen because transaction advisors are strongly linked to investments and play an important role in ensuring that investments are performed successfully. However, some of the results of this thesis can be extended to concern other real estate service providers too. The applicability of this study to other service providers will be discussed along with other practical implications and limitations and future studies recommendations in section 5 Discussion.

## **1.4 Thesis structure**

The thesis is structured in six sections. The second section, 2 Background and literature review, provides an overview of relevant theoretical background, including an overview of the Finnish renewable energy market and real estate market practises. It also presents research related to factors affecting strategic decision-making in companies. The third section, 3 Research methodology, details the research methodology utilised in this thesis. The research design and process, including the means of data collection and the tools used for data analysis, are presented. Furthermore, the reliability and validity of the method are evaluated.

The fourth section, 4 Findings, outlines the data structure of the interview results and presents selected quotes from interviewees to further clarify the findings. The results are summarised and theoretical and practical implications as well as limitations and future research directions are presented in the fifth section, 5 Discussion. Finally, the sixth section, 6 Conclusions, summarises the thesis, highlighting once more the motivation behind this thesis and presenting the key findings and implications.

## **2 Background and literature review**

The following section introduces the context of the study and presents the necessary theoretical background for the research. The contents of this section advance from a broader context to a more detailed one, starting with an overlook of the renewable energy market's development and drivers for development, as well as an introduction to the lifecycle of renewable energy assets, and relevant key players and stakeholders. Secondly, an overview of the real estate market as well as real estate services and their typical qualities is provided. Thirdly, an outline of existing literature on strategic decision-making is provided. The goal of this section is to gather background and literature related to the topics of this thesis to provide a sufficient basis for the analysis phase of this thesis.

### **2.1 Renewable energy market**

The renewable energy market in Finland is growing. Along with other renewable energy forms the focus areas of this thesis, i.e., wind power and solar energy production and energy storage capacity, are likewise expected to increase significantly by 2030 (FWPA, 2024b). The experienced and expected growth is due to legislative pressure as well as companies seeing the market as a lucrative business opportunity (Darmani et al., 2014). Historically, the market has been supported by subsidies, such as the feed-in tariff, but now it is transitioning to function in a more market-driven way (Motiva Oy, 2024a). To meet the ambitious growth expectations, new assets need to be built. As energy production and storage assets require several permits and are large in scale, the development process includes several steps and includes various key players and stakeholders.

#### **2.1.1 Renewable energy growth**

The development of the Finnish renewable energy market during the 21<sup>st</sup> century has been influenced by regulation and market-driven demand (Motiva Oy, 2024a). As presented in Figure 1 below, the share of renewable energy in total energy consumption has been consistently growing throughout the 21<sup>st</sup> century while the share of fossil fuels and peat-based energy has been declining (Statistics Finland, 2024).

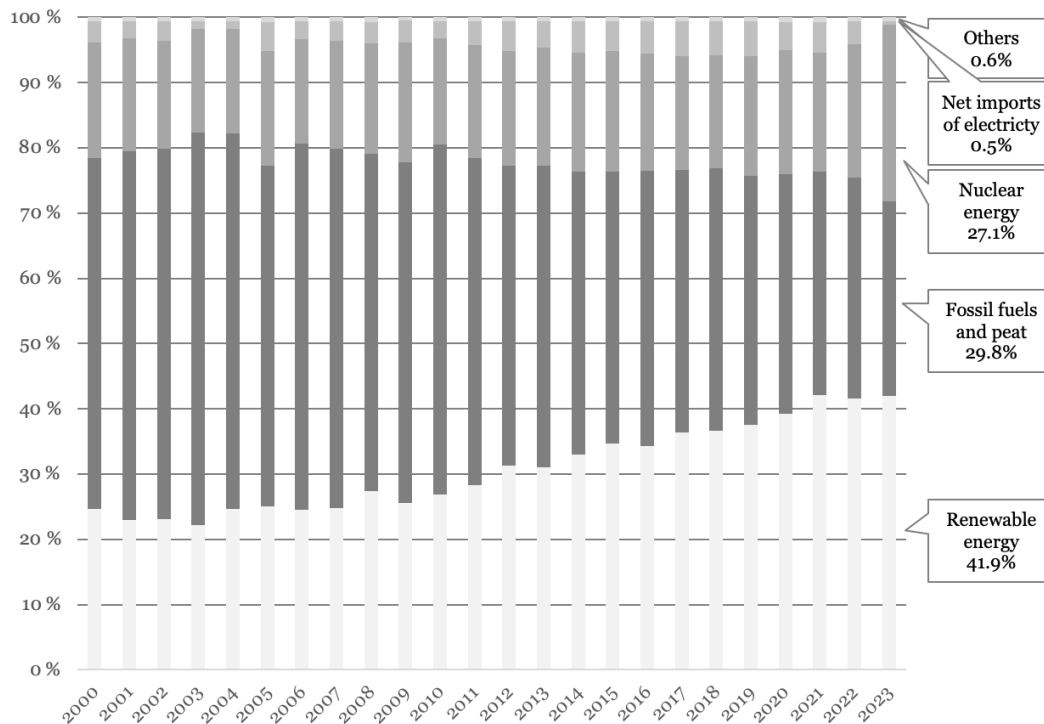


Figure 1: Total energy consumption by energy source in Finland 2000-2023

This thesis focuses on wind power, solar energy and energy storage solutions. Of these energy assets, wind energy is the most significant in size in the Finnish renewable energy market. As presented in Figure 2 below, in 2022, 7.7% of consumed Finnish renewable energy was wind energy based (Statistics Finland, 2024). This equals 3.7% of the total energy consumption. Wind power can furthermore be split into onshore and offshore wind power. Currently, most of Finland's wind power production is based onshore, with only one offshore wind park in Pori. For now, onshore wind power is seen as a more viable option due to technical maturity, but the profitability of offshore wind power is expected to increase (FWPA, 2024b). Compared to onshore wind power, solar energy has a smaller role in the Finnish renewable energy industry, accounting only for a 0.6% share of consumed renewable energy and a 0.1% share of all consumed energy in 2022 Finland.

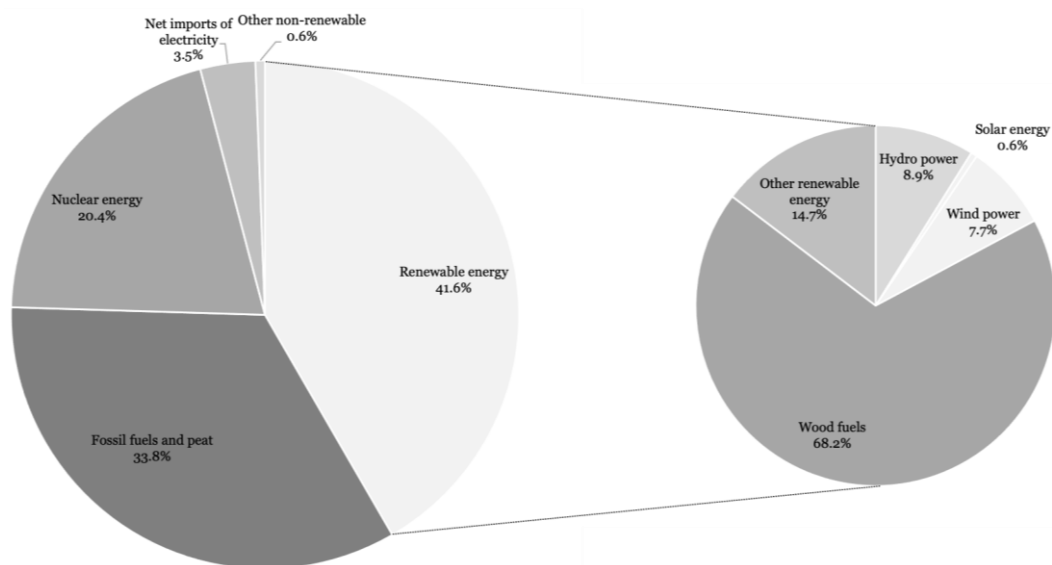


Figure 2: Total energy consumption by energy source in Finland 2022

Both wind power and solar energy have significant growth potential. FWPA (2024b) estimates that the Finnish wind power capacity has the potential to reach 30 TWh by 2030. In 2023, the Finnish wind power capacity was 14.5 TWh, meaning that in the next 6 years, the capacity could potentially double. Likewise, according to Fingrid’s estimates, the Finnish solar power capacity can potentially increase tenfold by 2030 by growing from the current 0.6 GW to 7 GW (Mattila, 2023).

Wind power and solar energy are intermittent sources of energy, meaning that the amount of energy produced is dependent on weather conditions—in other words, the amount of wind and sunshine (Motiva Oy, 2024a). As the significance of intermittent energy sources such as wind and solar power increases, the importance of energy storage systems likewise increases (OX2, 2024). As weather-dependent energy sources can only produce energy when the conditions are suitable for production, the demand of energy users and the supply that is available at that exact moment rarely meet. Hence, ways to balance power are needed. One already existing solution is hydropower, which is currently Finland’s largest balancing power (Pohjolan Voima, 2024). Furthermore, batteries, battery energy storage systems, and other storage technologies, such as district heating tunnels, also promote the operational reliability of the electricity distribution network. Having multiple solutions to store energy, increases the integration within the national energy system by balancing the production and consumption peaks of various energy producers and connecting different energy forms (OX2, 2024). As the renewable energy market grows, likewise storage capacity increases—OX2

(2024) estimates that the global energy storage capacity is to grow 31% annually until 2030.

### **2.1.2 Drivers and challenges in renewable energy growth**

The increase in renewable energy usage is due to legislative pressure as well as companies' internal motivations driven by the business opportunities a new market brings (Darmani et al., 2014). Legislative pressure is often seen as the most fundamental driver for change (Darmani et al., 2014). For example, as an EU member state, Finland is obligated to follow the renewable energy directive also known as RED II (*Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast)*, 2018). RED II (2018) states that the target for renewable energy consumed in the EU overall by 2030 is to be 32%. To reach this target, each member state has been specified country-level targets for the share of energy produced from renewable sources, based on the member state's starting point and general potential for renewable energy production (European Commission, 2024). In its national renewable action plan, Finland states that it aims for the share of renewable energy of all consumed energy to reach 51% by 2030 (Motiva Oy, 2024b). In 2023, the share of renewable energy in all energy consumption in Finland was 41.9%, as visualised in Figure 1 above.

To support the deployment of renewable energy sources, the EU, as well as the Finnish government and municipalities, have put a variety of subsidies and financing solutions in place. A prime example of such a subsidy is the feed-in tariff (FIT), which guarantees a fixed price for the sold energy to the energy producer (Ministry of Economic Affairs and Employment, 2024). The FIT was in use in Finland from 2009 until 2017, during which time, the wind power industry in Finland developed significantly (FWPA, 2024b). Such subsidies are significant for the development of the renewable energy industry, as the industry is highly exposed to the volatility of energy prices, and this volatility increases risk for asset owners and investors (Motiva Oy, 2024a). In addition to subsidies, energy taxation likewise influences the costs and profitability related to energy production and usage, and this guides the operators (Paukku, 2021).

Despite the government-level steering mechanisms, the industry is still very much dependent on individual investors and companies who are willing to take ownership of and invest in renewable energy assets (Motiva Oy, 2024b). However, finding adequate funding is currently a significant challenge with renewable energy projects (Motiva Oy, 2024b). A study by Juszczuk et al. (2022) shows that government support and subsidies have a more significant



effect on large companies. This makes the industry less entrepreneurship-driven than what would be useful for the overall development of the industry.

Even though the barriers of entry to the renewable energy market can be seen as relatively high, Darmani et al. (2014) present that companies entering the renewable energy industry do recognise strong business opportunities in the market which encourages them to enter the market. If companies feel that in addition to the institutional incentives, i.e., the legislative pressure, they have the required network, technological and regional incentives and skills in place, the renewable energy market can be attractive for them. Likewise, companies perceive the renewable energy market as a significant tool in fighting against climate change. This increases companies' motivation in wanting to be a part of the industry from a social perspective (Darmani et al., 2014).

### 2.1.3 Processes and stakeholders

Meeting growth expectations requires active development and construction of new production and storage assets. This is a time-consuming process and can take from two to over ten years depending on the type, size and location of the asset (Ministry of the Environment, 2024a; FWPA, 2024b). Figure 3 below illustrates the steps and stakeholders included in the lifecycle of a renewable energy production asset (Ministry of the Environment, 2024a; FWPA, 2024b).

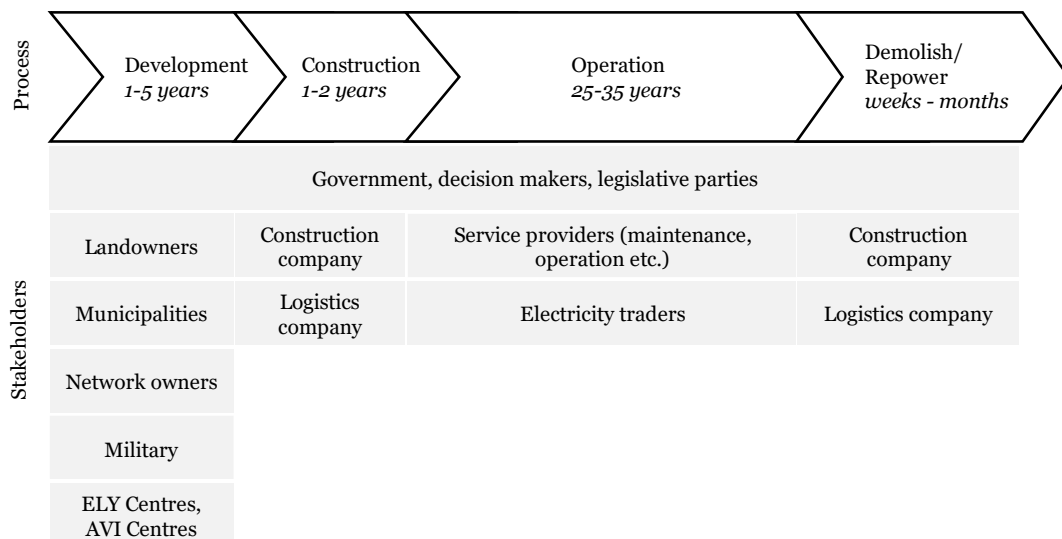


Figure 3: Life cycle and stakeholders of a renewable energy asset

On a broad level, the lifecycle includes the following steps and stakeholders:

- **Development:** A suitable land area is mapped. Discussions with the landowner, municipality, military forces and network owners are had. Environmental impact assessment (EIA) and other possible assessments are made as guided by ELY and AVI centres. The area is zoned for correct use. Technical and financial feasibility assessments are made. Necessary contractors are contacted.
- **Construction:** Setting up necessary roads and cables for construction. Sourcing and transportation of power plant parts with logistics experts. Construction of the power plant with constructors.
- **Operation:** The asset is in operation either producing or storing energy and selling it onwards for clients to use. Necessary maintenance work is done with the help of service providers.
- **Demolish/Repower:** The asset is demolished, and parts are recycled with the help of logistics and construction companies. A new power plant can be built (= repowering) in the place of the old one.

The asset must be managed and owned by someone. According to the Finnish Wind Power Association (FWPA) (2024b), key players in the market include developers and investors. Developers develop the project and seek financing from investors, who become the owners of the assets. In addition, key players in the market include independent power producers (IPPs) who develop renewable energy assets for their own use and sell the produced electricity onwards. Key players can be included in various steps of the asset lifecycle. However, the list of members of the FWPA indicates that there is a variety of operators in the renewable energy market with various roles and motivations (FWPA, 2024a).

## 2.2 Real estate market

The commercial real estate market is an active form of business where real estate moves from one owner to another and from user to user (KTI, 2001). Various players, including developers and different types of investors, take part in the market hoping to create a profit and/or to utilise the space and asset for their internal use (KTI, 2001). In addition to asset owners and users, third-party service providers also take part in the market, providing various services, such as transaction advisory, valuation, strategic consulting and financing services as well as more practical level services, e.g., asset management and development (Gasparoni, 1998). Such services increase professionalism and information flow in the real estate market which in turn makes the market more attractive for international operators (Falkenbach and Toivonen, 2010). As the renewable energy industry grows and the number of

energy-related assets increases, real estate market operators broaden their operations to the industry too.

### **2.2.1 Market description**

KTI (2001) defines the commercial real estate market, also property market, as an arrangement that allows demand and supply to meet with the purpose of a transaction, exchange or renting related to properties, buildings, and apartments. From an individual consumer's point of view, being active in the real estate market typically refers to buying or renting an apartment or a house for personal use. However, behind the individual-level real estate business lies a larger, higher-level market where investors, corporations, developers, real estate investment trusts (REITs), institutional funds and other entities engage in buying, selling, leasing, and managing properties to gain a profit (Gyourko, 2009). Commercial real estate can range from retail spaces to offices, industrial assets, public use spaces, hotels, residential buildings and energy and infrastructure assets (KTI, 2024).

The key reason for a player to take part in the commercial real estate market is financial gain (Gyourko, 2009). The potential financial gain is affected by the overall economic and regulatory environment. Hence, the investors, corporations, developers, REITs, and institutional funds who take part in the market must evaluate the value of a property before making investment decisions. The value of a property is affected by high-level factors such as the overall economic situation of the market, the regulatory environment and the overall demand and supply for such property (Morri and Benedetto, 2019). The real estate market follows the trend set by the overall economic environment: if the economic activity in a certain market is low, the activity in the real estate market will likely stay low. Conversely, during an upswing, the real estate market will typically activate. Likewise, the regulatory environment guides the real estate market and determines, e.g., what sorts of ownership structures and rental practices can take place (KTI, 2024). After the economic and regulatory environment has set the high-level expectations for the property price, supply and demand and property-specific factors such as property type, condition, and location combined with the planned business logic, determine the potential income opportunity in the property (Morri and Benedetto, 2019).

In addition to investors, other players engage in the real estate market too (KTI, 2024). Depending on the needs of the investor and their planned business logic, the property can be utilised in various ways. The investor can use the property for its use, e.g., to produce electricity to sell it further as IPPs do, or as office space as several corporations do, depending on the type of investor (KTI, 2001). The investor can also simply want to own the property and

lease it out for a tenant or several tenants to use (KTI, 2001). For example, the investor could invest in a large office complex, from which it then leases out specific areas for the use of other companies. Some investors purchase properties with the intention to develop or rebuild the property further to increase the value of the property (KTI, 2001). Development can be done either to resell the property directly after the development is finalised, or with the motivation to lease the property out or hold on to the property for the owner's own needs. Finally, to facilitate the market and the varying needs of the different players in the market, professional real estate service providers also play an important part in the market dynamics (KTI, 2001). Service providers and their role in the market are discussed in the following section, 2.2.2 Professional real estate services.

As new sectors such as the renewable energy industry emerge, the commercial real estate market follows. Though energy production assets are often seen primarily through their energy production functionalities, they are assets in the same sense as an office space or a residential building. As renewable energy usage increases, consequently, new assets are being built and ownership for them is sought out. In the past years, various media outlets have publicised renewable energy transactions taking place around the world as well as in Finland (Castrén & Snellmann, 2024; Reuters, 2024). As a consequence of the increasing presence of renewable energy assets, these assets increasingly are seen as their own real estate sector within the different recognised building types (Statistics Finland, 2018).

### **2.2.2 Professional real estate services**

Professional real estate services have an important role in creating proper information flow in the real estate market (D'Arcy, 2005). D'Arcy argues that having well-functioning professional services in place on the market is critical from a cost and risk perspective. The main role of professional real estate services is to gather, analyse and share relevant information to assist clients in the activity they are interested in. As legislation and market practices vary from country to country, the lack of local professionals assisting in market activities could cause unnecessary costs and risks for investors. Professional services also promote the flow of information, allowing a more open market with less information asymmetries between different parties (D'Arcy, 2005). This makes the market environment more compelling from an investor's point of view too (Falkenbach and Toivonen, 2010).

Due to the internationalisation of the Finnish real estate market and overall improved professionalism during the 21<sup>st</sup> century, the importance of up-to-date analysis and information on the market has amplified. This has caused an increased demand for real estate professional services also in Finland

(KTI, 2024). If previously the real estate market typically involved the asset owners and the assets' users, in an international and more active market environment the role of an intermediary service provider has become fundamental (Falkenbach and Toivonen, 2010). A study by Falkenbach and Toivonen (2010) highlighted that though from a Finnish investor's perspective, the information flow might not have increased due to professional services on the market, the information has nevertheless gained a more formal status, allowing investors from outside Finland to understand the market better. This has created a positive cycle by attracting new investors to Finland and boosting market activity, which consequently brings new investors to the market (Falkenbach and Toivonen, 2010).

Professional real estate services can take part in different stages of the lifecycle of the investment, ownership, use or lease period (KTI, 2001). Different services cater to different parties within the market, and the service provider and client's relationship can last for a varying amount of time ranging from a one-time property valuation to a decades-long property management relationship. Services can be split into six categories: valuation, transaction, development, property management, consulting, and advisory and financing services (Gasperoni, 1998).

- **Valuation services:** Assist in estimating the value of a property for example based on location, condition, comparable sales, and market trends.
- **Transaction services:** Support clients aiming to purchase or sell a property or a property portfolio. Assist in finding suitable properties or clients, as well as in material preparation, due diligence, and negotiations.
- **Development services:** Assist in developing the property, including planning the changes, financing, and construction.
- **Property management services:** Support the client in managing the property, assets, and facilities as needed. This can include assisting in maximising value from the property, supporting day-to-day operations at the asset, e.g., by managing tenant relations and rent collection or maintaining the physical property and its infrastructure.
- **Consulting, and advisory services:** Provide investors, developers, and occupiers with strategic advice and solutions and help them evaluate the feasibility of plans and projects.
- **Financing services:** Arrange financing and debt for acquisitions and development projects.

As real estate service operators, such as investors, expand their interest towards the renewable energy industry, service providers have an incentive to follow. The list of FWPA members shows that several different types of parties take part in the industry (FWPA, 2024a) and especially the development and property management service provider pool is large. Likewise, news releases regarding expired renewable energy transactions indicate that also transaction and financing service providers have taken a role in the market and have been a part of expired transactions. (Castrén & Snellman, 2024; Reuters, 2024).

## **2.3 Factors contributing to strategic decision-making**

Successful companies continuously make decisions on which opportunities to pursue and which to pass (Anthony et al., 2023). As the markets in which companies operate develop, and new markets and industries emerge, companies must reflect on the opportunities the developing market environment could offer to them and their strategy. Eisenhardt (1999) states that a company's ability to make fast and widely supported strategic decisions frequently is essential for an effective strategy, and thus a fundament typical for excellently thriving firms. Though making decisions in a shifting environment has its evident challenges related to uncertainty, these decisive moments also offer opportunities for organisations to overtake and get ahead of competitors (Anthony et al., 2023).

While grasping new opportunities and diversifying the company's offering can be attractive for a company's future success, the possible opportunities must be assessed well beforehand to assure strategic alignment. Literature highlights two key matters in strategic decision-making: assessing the external environment and internal capabilities (Chandler et al., 1994; Lichtenthaler, 2005; Schuh et al., 2013). Chandler et al. (1994) argue that a company's strategy is influenced both by market needs and the employees' capabilities. Schuh et al. (2013) add that a company's ability to pursue an opportunity can be assessed by comparing the market's requirements with the company's competencies. Similarly, Lichtenthaler (2005) suggests that opportunities arise when there is a match between market needs and company capabilities. The following sections present literature on these two common factors contributing to a company's strategic decision-making.

### **2.3.1 External environment**

The external market environment can be assessed by studying market characteristics such as the legislative and regulatory environment. For example, Dhir and Dhir (2015) highlight the importance of regulatory impact in

market evaluation. As shifting regulations can quickly change the way a certain market or industry operates, it is critical to analyse the regulatory environment before engaging in a new market. Though regulation first and foremost creates safety and quality to an industry, it also limits how companies can operate and, for example, creates higher barriers of entry due to increased knowledge or physical asset requirements (Bailey and Thomas, 2017). Typically, the regulatory environment is heavily linked to the role of government, which is also highlighted by Porter (2008). Porter (2008) states that governmental effects are inherently neither a negative nor a positive factor regarding the profitability of a market but encourage companies to reflect the effect of the government and regulatory factors on a market through their effect on market operators. The PESTEL analysis framework gathered collectively by strategic management scholars and practitioners supports the importance of this area further (Issa et al., 2010; Pan et al., 2019).

Secondly, the economic environment has a significant effect on how and where companies can operate (Issa et al., 2010; Pan et al., 2019). For example, interest rates, inflation, unemployment levels and overall economic stability are important factors to evaluate when assessing if a new geographical area or industry is attractive for a company. Additionally, as it is clear that some industries are more dependent on economic conditions, such as real estate or tourism, understanding the economic sensitivity of the potential new industry is significant in terms of potential success (McKinsey & Company, 2023). However, Porter (2008) highlights that economic factors, such as industry growth rate, are rarely suitable as direct measures for market potential. Even if a certain industry is showing growth and the economic environment is stable, this doesn't alone make for a lucrative new industry to pursue.

Furthermore, the PESTEL framework highlights social, technological and environmental aspects as important external factors that should be considered when studying a market (Issa et al., 2010; Pan et al., 2019). The social viewpoint encourages to consider the overall social and cultural climate regarding the planned industry. If, for example, the industry is seen as unethical, this might be reflected in customer behaviour making the industry less attractive. Similarly, the environmental viewpoint is an important perspective to take into account. If the industry is at risk of being heavily affected by sustainability regulation, as is, for example, the fossil fuel industry, the implications of regulation changes should be understood. Furthermore, technological advancements can either strengthen or weaken an industry, for example, by making the production within the industry more efficient or by replacing the need for the industry as a whole. All of these effects should be understood prior to entering a new market.

Besides looking at market characteristics, the external environment can be evaluated by assessing the operators in it. Porter's (1998) five forces framework introduces factors or "forces" that contribute to an industry's attractiveness: 1. Threat of new entrants, 2. The power of suppliers, 3. The power of buyers, 4. Threat of substitutes, and 5. Rivalry among existing competitors. The framework encourages the assessment of the power of different operators that also operate and exist in the market, such as competitors, or ones who are essential for the company in question to be able to operate in the market, such as clients and suppliers. By evaluating the five forces, the competitive environment and, by extension, the underlying profitability of an industry can be understood. This can help a company to evaluate how they should operate to be most successful in an industry.

In addition to evaluating the operator environment around a company in the possible new industry, understanding possible synergies and network effects with the current operations of the company can be useful. In their study, Dhir and Dhir (2015) highlight the importance of network effects as well as the possible complementary nature of the new industry with the company's current industry. If the new industry complements the company's current business, e.g., a customer benefits from two services or products together more than they would benefit from the two individually, the new industry can be attractive to the company. Dhir and Dhir (2015) further assert that simply the possibility of the existing customers moving additionally to the new service or product offers attractive network effects for the company. The importance of complementary products and services is also highlighted by Porter (2008). A complementary service or product can make entering a market either easier or more difficult, thus lowering or raising the barriers of entry as well as affecting the threat of substitutes either positively or negatively.

Lastly, the timing of market entry and prevailing market trends affect how a market is perceived. Dhir and Dhir (2015) present timing of entry as one of the most critical factors influencing the decision of whether to enter a market or not. Whether the timing is suitable for the company or not is consequently dependent on how the company is aiming to compete in the market: are they planning to be an early adopter or is the strategy aiming to utilise learnings from the already existing operators (Wunker, 2012). Though following trends offers ways to recognise potential new industries, Porter (2008) highlights that the trendiness of an industry is not a measure of market attractiveness or profitability. The factors presented in the five forces framework should be still evaluated and the analysis might end up revealing, e.g., an increased level of competition or high power of suppliers, making the industry less attractive.



### **2.3.2 Internal capabilities**

The internal capabilities of a company, have an important role in steering what a company can do now and in the future. Schuh et al. (2013, p. 2348) state that the capabilities of a company “represent the strengths of a company on the basis of which competitive advantages emerge in the form of physical products and/or services”. Competitive advantages, on the other hand, are the unique skills and assets that differentiate a company from its competitors within the same industry and sector (Bharadwaj et al., 1993). As it is visible that companies within the same industry and sector experience different amounts of success and, e.g., have different levels of profitability, there must be factors that differentiate companies from each other—these are the competitive advantages.

Barney (1991) argues that competitive advantages must be valuable, rare, imperfectly imitable, and strategically non-substitutable. If a skill, end-product or service the company provides meets the aforementioned criteria, the company has something that can differentiate it from its competitors, and, hence, can help it succeed in a market where there is demand for the skill, end-product or service in question. Similarly, the SWOT analysis utilises the company’s strengths and weaknesses in comparison to the external opportunities and threats to highlight capabilities (Namugenyi et al., 2019). The framework combines the evaluation of the market environment with the company’s internal capabilities to help identify what the company does well and what could be done better. This can assist a company in deciding which opportunities to pursue and which to pass.

Porter (2001) introduces a different approach to identifying a company’s competencies with the value chain analysis. This framework involves breaking down a company's activities into primary and support activities to understand where exactly in the company’s value chain the value is created and how costs are incurred. By analysing each step of the value chain, companies can identify areas of competitive advantage and opportunities for efficiency improvements. Conversely, capabilities can also be recognised by comparing the company to competitors by doing benchmarking. Benchmarking involves comparing a company's performance and capabilities against industry peers or best-in-class competitors. By identifying areas where competitors excel, companies can set targets for improvement and learn from best practices.

#### **Internal capabilities in professional service firms**

The internal capabilities of professional service firms (PSFs) are slightly different in comparison to a general manufacturing company. Greenwood et al. (2005) define PSFs as companies whose main assets lie within a highly

educated workforce and whose main output is intangible and knowledge-based services. Typical examples of PSFs include consulting, accounting, and advisory companies, but they also include ones such as professional real estate services (Morris and Empson, 1998). The output of a PSF is often an intangible service such as an audit, training, solutions to problems, assistance in the implementation of projects or functioning as a negotiator (Løwendahl et al., 2001). In addition to the outputs, the input of a PSF is also intangible: knowledge, information, and education embedded within the PSF's employees (Castaldi and Giarratana, 2018). Hence, typical characteristics of PSF include high labour intensity, low capital investment and high-level customisation within its offering (Miles, 1993).

A high level of knowledge is an important skill of a PSF. A client typically deploys a PSF because the client believes the PSF has knowledge and expertise that is beyond their capabilities. This means that there typically is an asymmetry in information between the client and the PSF, consequently meaning that the client typically has limited resources to evaluate the PSF's advice or service in detail or much less compare the services of two suppliers (PSFs) together (Starbuck, 1992). As the offerings of separate PSFs in the same industry are often similar, clients are highly dependent on social proofs such as reputation, branding, status or even a gut feeling (Rao et al., 2001). This highlights the importance of the relationships between the PSFs and clients, and forces PSFs to invest in an individualised relationship with each existing and possible client (Morris and Empson, 1998).

While clients are highly dependent on the knowledge of the PSF, the PSF is likewise dependent on the knowledge its workforce holds and the unique client relationships that employees have created. Morris and Empson (1998) assert that PSFs can have varying knowledge management strategies, depending on the underlying knowledge base of the industry in which the PSF functions as well as the PSF's positioning within the sector. However, how a PSF organises its knowledge affects how the PSF can utilise it (Morris and Empson, 1998). For example, if the information is more codified, i.e., physically represented in writing, symbols, or digitally, the knowledge can be used more diversely by employees of different statuses. However, if most information within a PSF needs to be codified, this forces the PSF to scope its strategy or domain tighter, thus limiting the area in which a PSF can work.

### **3 Research methodology**

The following section presents the research methodology used in this thesis. First, the research design, qualitative interview study, is introduced and justified. Second, the research process, including the means of data sampling, collection and analysis are presented, and the reliability and validity of the research are discussed. The goal of this section is to present how the empirical component of this thesis has been performed and to justify the methodological choices made.

#### **3.1 Research design**

The research for this thesis is performed as an exploratory interview study with an inductive research approach. The study focuses on understanding the fundamentals and expected development of the Finnish renewable energy industry and the possibilities this opens for companies offering real estate services and their strategies. As the aim of the study is to assess a phenomenon, i.e., the development of the renewable energy market in Finland, from a new perspective, i.e., real estate service providers, the study can be described as an exploratory study (Saunders et al., 2009). According to Saunders et al. (2009), an exploratory study can be conducted through a search of literature and interviewing experts on the subject. These are the two primary tools used in this thesis. The study can likewise be described as inductive. An inductive study builds theory based on observing data, hence why it fits well together with an exploratory study (Saunders et al., 2009).

The knowledge gathered during the literature review, and presented in section 2 Background and literature review, is complemented with semi-structured interviews conducted with industry experts. Semi-structured interviews are a form of qualitative data collection, where a premade interview guide is combined with a flexible way of interviewing to gather data and insights from interviewees (Kallio et al., 2016). The interviews followed a premade interview guide which was created based on the knowledge gained from the literature review. Following the interview guide ensured that the necessary high-level topics were discussed in each interview. However, as per the objective of semi-structured interviews, diverging from the guide was also allowed. The interview guide was also iterated after the first interview as recommended by Kallio et al. (2016). Semi-structured interviews are a suitable form of data collection for this thesis, firstly, because the research questions are qualitative by nature and hence could not be addressed through quantitative data. Secondly, the semi-structured interviews allow the interviewer to guide the course of each interview according to the expertise of the specific interviewee, which gives each interviewee the possibility to highlight their

perspective on the topic. Thirdly, using a semi-structured interview approach made the interview situations more natural and discussion-like, which allowed gaining more in-depth answers.

## **3.2 Research process**

### **3.2.1 Data sampling**

The process of data gathering began with choosing suitable companies from which to choose suitable interviewees. The main criterion for selecting suitable companies was that they operate in and influence the renewable energy sector in Finland, as this is the scope of the thesis. When performing the literature review, it was recognised that companies within the sector typically fall into one of four categories: developers, independent power producers (IPPs), investors and service providers. Keeping these categories in mind, company websites, articles and news on recent transactions done within the scope of the thesis, i.e., wind, solar power plants and energy storage solutions, were screened to find potential companies to interview.

Of the identified potential companies, eleven were chosen based on their suitability and availability. Larger companies with larger projects and portfolios were preferred, as it was believed they would have more experience within the industry. The selected companies were required to have established experience in the field, as they were more likely to provide informed opinions on the relevant questions for the thesis. While contacting newer and less experienced companies could have offered a differing standpoint and views from the perspective of new market entrants, this might have resulted in less substantial findings due to the operators' limited experience. The list of suitable companies was also complemented with an established industry expert association, as it was believed that the association could offer an alternative perspective on the industry from a non-commercial and neutral point of view.

### **3.2.2 Data collection**

After suitable companies were found, potential interviewees were identified and contacted. Interviewees were chosen based on their area of expertise and level of experience, focusing on employees in managerial positions, e.g., Vice Presidents, Partners, Directors and Managers. Employees in managerial positions were preferred as it was assumed that they would have the best holistic understanding of the company's decisions as well as a wider perspective on the strategic logic behind the decisions. Due to practical reasons, the initial goal of managerial-level interviewees was not accomplished for all companies. However, after contacting the potential interviewees, the companies

also assisted in finding a suitable interviewee if the person initially contacted was not deemed suitable or their availability to partake in an interview was limited. This increased the likelihood that a knowledgeable interviewee was found in the case of each company.

The interviews were conducted during May and June 2024 using the Microsoft Teams platform. The interviews were conducted in Finnish or English depending on the preference of the interviewee. All but one interview was recorded to allow the interviewer to focus only on listening and understanding the message of the interviewees. Likewise, transcripts of the recorded interviews were automatically created with Microsoft Teams to assist in the analysis later on. However, brief in-vivo notes were taken during all interviews to take note of ideas and thoughts especially highlighted by the interviewee and to allow the interviewer to list possible follow-up questions that arose as the interviewee was speaking. Table 1 summarises the conducted interviews and presents each interviewee’s position.

Table 1: Summary of Interviewees

<b>Company</b>	<b>Interviewee’s position</b>
Developer A	Director level
Developer B	Managerial level
Developer C	Managerial level
Developer D	Specialist level
IPP E	Executive level
IPP F	Director level
Investor G	Associate level
Investor H	Executive level
Service provider I	Associate level
Service provider I	Associate level
Service provider J	Executive level
Expert K	Managerial level

As mentioned, the interviews were conducted in a semi-structured manner based on the interview guides presented in appendix A and B. Interview guide A was used when interviewing companies from the Developers, IPPs, and Investors categories as well as Expert K. Interview guide B was used

when interviewing companies from the Service provider category. The two different interview guides were prepared to capture the essential information from each interviewee. As the developers, IPPs and investors have a distinct perspective on the renewable energy industry in comparison to the companies providing services for the industry, preparing two separate interview guides was found useful.

Despite the two separate interview guides, all interviews were split into four similar stages. All interviews started with a run-through of how the interview was going to be used in the data analysis process and a confirmation that the interviewee understood and agreed on the use of data. This was followed by an introduction of the interviewer and the thesis topic. The second stage focused on the projects the interviewee had been involved in. This stage focused on understanding the fundamentals of the industry including project lifecycle, stakeholders, financing and competitors. The third stage focused on understanding the interviewee's views on the renewable energy industry overall including motivation for working in the industry, factors making it more or less attractive, as well as projections for market development and possible drivers and prerequisites for it. Each interview ended with a discussion of possible clarifications and presented an opportunity for the interviewee to make additions and final remarks on the topic.

### **3.2.3 Data analysis**

The process of data analysis started with the creation of the interview transcripts. The transcripts were automatically created by Microsoft Teams and checked and manually corrected immediately after each interview by the interviewer. An immediate review of the transcripts was preferred, as at this point the interview was still freshly in the mind of the interviewer making the process of revising the transcript swifter and more error-free. Additionally, reading through the interview directly after having it, allowed the interviewer to revise what was learned and allowed initial ideas to be strengthened.

The interview data was coded and analysed utilising the Gioia methodology (Gioia et al., 2013), which allows analysing data from each interview in a structured manner. The coding process was done using the Atlas.ti software and the Gioia method was adapted to meet the features of the software. Once the interview transcripts were created, they were downloaded to Atlas.ti for the coding process.

Once downloaded to Atlas.ti, the interviews were read through once more, after which the creation of 1<sup>st</sup> order concepts could begin. According to Gioia et al. (2013), the purpose of the 1<sup>st</sup> order concepts is to capture relevant observations, statements and phrases highlighted in the interview from the

perspective of the research questions. Using the language and phrases used by the interviewees was preferred as this ensures that the data is not generalised too early in the process. This part of the data analysis was done using Atlas.ti's "codes" feature. This stage of the process was done iteratively and initially, the number of created "codes" was very high. However, once each interview had been analysed, all interviews and "codes" were read through once more and some of the "codes" were combined.

The purpose of 2<sup>nd</sup> order themes is to recognise patterns and aggregate themes from the 1<sup>st</sup> order concepts (Gioia et al., 2013). 2<sup>nd</sup> order themes combined 1<sup>st</sup> order concepts that described, e.g., opinions on certain situations or different ways of doing a certain task. This phase of the analysis was done using Atlas.ti's "groups" feature. At this point, some "codes" were further combined, and the number of "codes" under each "group" was narrowed down, as the reasoning for each "code" became clearer. Once the initial "groups" were created, Microsoft PowerPoint was utilised to assist in clarifying and visualising the data structure.

Finally, the 2<sup>nd</sup> order themes were combined to formulate aggregate dimensions. The aggregate dimensions represent the core theoretical insights and findings of the thesis. This part of the analysis was done using Microsoft PowerPoint to visualise the final data structure of the research. The data structure is presented in section 4 Findings.

### **3.2.4 Data validity and reliability**

Before and while performing research, it is important to reflect on the planned data validity and reliability to ensure that the performed study answers the planned research question (Saunders et al., 2009). In qualitative research, validity refers to how suitable the research design is for the purpose of the study, whereas reliability can be evaluated through the consistency of the study (Leung, 2015). In the following paragraphs, the validity and reliability of this study are evaluated.

As the research is exploratory by nature, the risk of making decisions that lead to poor validity is lower than, e.g., in an explanatory quantitative study (Robson, 2002). However, the risk of drawing conclusions too directly from the interviewee's statements still exists. The risk of poor validity has been reduced by explaining the purpose of the research to the interviewees so that they have a clear understanding of the purpose of the study when answering the questions. Likewise, the research questions, research method and interview questions were discussed with both experts in academic research as well as industry experts before performing the research. Having a group of people

agreeing on the research method for this particular research setting, strengthens the validity of this research.

Robson (2002) states that the reliability of research can be affected by four factors: participant error, participant bias, observer error and observer bias. In this case, the participant is the interviewee, and the observer is the interviewer and the person doing the analysis.

Participant error refers to the effect of the state of the interviewee during the interview on the results of the study. For example, if an interviewee is feeling energised and has a positive outlook on the topic of the interview on the day of the interview, the results can vary significantly from the results that would have been received if the interviewee was feeling tired or unenthusiastic about the topic in question. The level of participant error is challenging to evaluate as in the case of this research the interviewer met each interviewee for the first time during the interview, meaning that there is little to no possibility to evaluate the attitude of the interviewee. However, each interview was voluntary, and the suitable interviewee was decided in collaboration with each company, which indicates that the interviewees had a neutral attitude towards the interview at a minimum. Nevertheless, it must also be understood that the voluntary nature of the could lead to interviewees having an overly positive perceptiveness on the topic. Participant bias, on the other hand, could have led to situations where the participant would for some reason tell biased opinions, for example, because their boss had told them to do so. As most of the interview questions and their answers were fact-based rather than opinion-based, this mitigates the likelihood of participant bias.

Finally, observer error and bias refer to situations where the interviewee would change questions and the way the questions were asked between interviews, making the questions between interviews non-comparable. Furthermore, the interviewer could interpret answers in a way optimal for the outcome of the study, which would also make the results unusable.

In this thesis, the risk of observer error was alleviated by having a premade interview guide, which was used in all interviews. The questions were, likewise, formulated to be as neutral and open-ended as possible, to allow the interviewees to answer truthfully. The interviewer also put conscious effort into asking the questions as planned in the premade plan. Furthermore, the interview records were a critical tool for mitigating observer bias. The records allowed the interviewer to rewatch the interview during the analysis process. This alleviated the risk of misunderstandings. Additionally, the recordings allowed the interviewer to study the tone and facial expressions of the interviewees, which brought an additional perspective on the analysis as this way



it could be better understood what the interviewees found important, and on which parts they were feeling unsure.

## 4 Findings

This section presents the main empirical findings of the thesis. The main findings are presented in the code-aggregation diagram presented in Figure 4. The section follows the structure presented in the diagram and the subsections of this section are based on the four aggregate dimensions of the diagram. The subsections utilise the 2<sup>nd</sup> order themes and 1<sup>st</sup> order concepts to clarify and justify the aggregate dimensions. Additionally, selected quotes from the interviews are presented to further motivate the purpose. The goal of this section is to present the main findings identified during the interviews and consequently answer the research questions of this thesis.

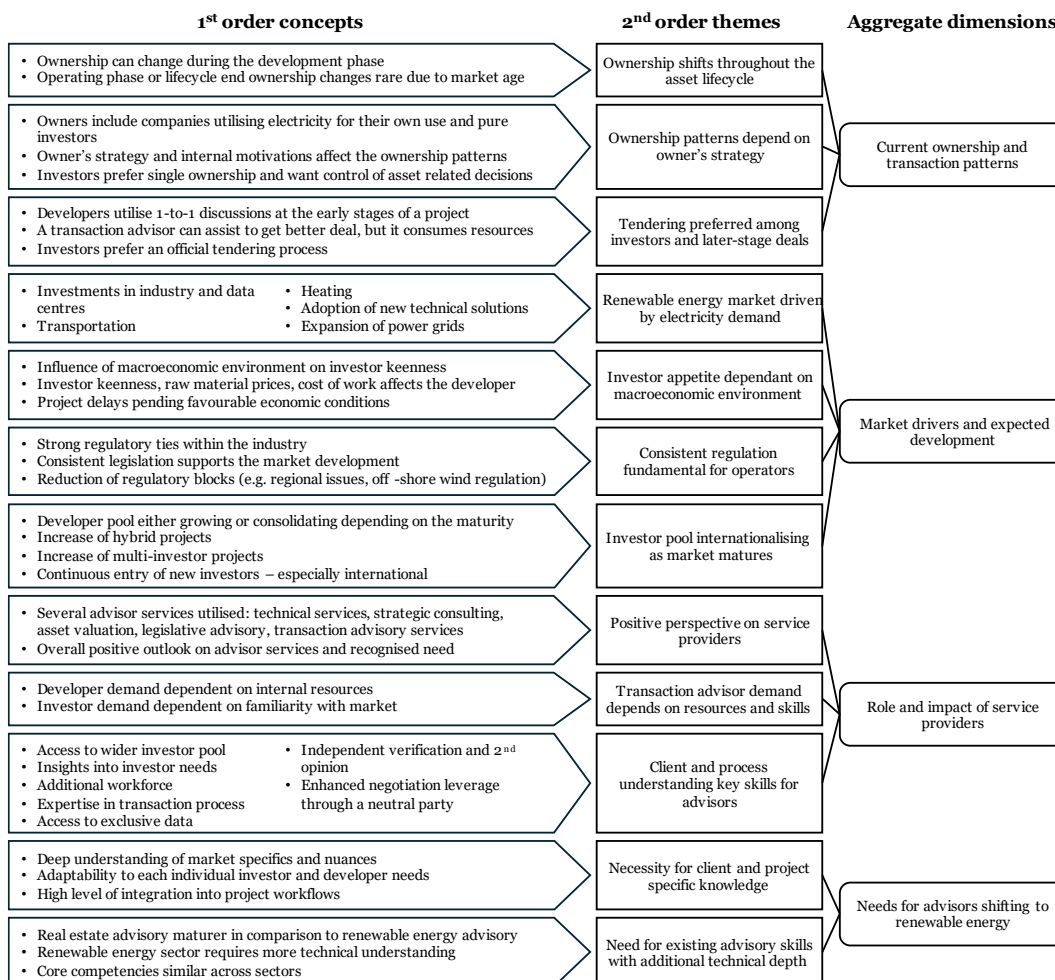


Figure 4: Code-aggregation diagram of findings

## 4.1 Current ownership and transaction patterns

Interviews highlight that the ownership of renewable energy assets and corresponding transactions during ownership vary based on the operator's strategy. While some common market practices and patterns can be identified, the arrangement and timing of ownership transactions differ from asset to asset and owner to owner. Ownership transitions can occur throughout the asset lifecycle, starting as early as the development phase, even before the asset physically exists, and continuing through the operation phase. The reasons and timing for ownership changes are determined by the operator's strategy and internal motivations. Furthermore, the structuring of transactions depends largely on the internal capabilities of the operators but also on the phase in which the asset is in its lifecycle. Interviews suggest that the popularity of an official tendering process grows when moving towards the operation phase of the asset lifecycle and the involvement of pure investors increases.

### 4.1.1 Ownership shifts throughout the asset lifecycle

According to the interviews, the ownership of a renewable energy asset can change at virtually any stage of its lifecycle, which can be broadly divided into four parts: development, construction, operation and end-of-lifecycle activities, such as demolishing or repowering. At the earliest, the ownership of an asset can change during the development phase of a renewable energy asset, when a smaller developer sells the asset to a larger developer. This often happens due to the limited resources of the smaller developer, as further described by *Developer C*:

*Smaller developers can start developing a renewable energy asset and then sell it forward to a larger developer during the development phase. The smaller developer, for example, can be out of money or their development portfolio has grown beyond their capacity.*

- *Developer C*

Depending on the financing of the developer, an investor may also support a developer during the development phase. The interviews revealed that some investors are so-called development phase investors that focus solely on development phase investments and exit the project once the development is complete, and the construction phase is about to begin. These sorts of investors are purely focused on the development phase and are not planning on committing to the asset in the long term.

Conversely, long-term, later-stage investors are typically sought during the project's development phase, before starting the construction. These

investors can do transactions either with the aforementioned development phase investors or directly with the developers as described by *Developer D*:

*About 10 years after the development has started, we typically have received the required permits so that the construction work can be started. At this point we organise the tendering process for funding—in other words, aim to find a suitable investor.*

- *Developer D*

Once construction is complete and the asset is fully operational, further ownership depends on the asset's owner's strategy and ownership plans. The interviews indicate that operating renewable energy assets can be owned by several different parties, for example, IPPs, industrial companies and a variety of pure investors.

IPPs are a unique kind of asset owner as, in addition to owning renewable energy assets, they also develop assets. Based on a review of IPP websites, companies developing the assets for themselves typically have separate teams for the development and investor sides of the business. No actual transaction takes place, but the teams collaborate, and the individual asset or portfolio of assets shifts from the control of one team to another as the asset is developed.

On the other hand, the pool of possible investors, who are not developers, is very heterogeneous, and several players show interest in renewable energy asset ownership.

The ownership between possible owners changes during the operation phase according to the strategies of the owners. This is discussed in section 4.1.2. As the Finnish renewable energy market is relatively nascent, the number of transpired operation phase transactions is limited. Nevertheless, some transactions have already occurred, and investors are showing an interest in operational renewable energy assets:

*The renewable energy asset stock in Finland is still fairly young so the number of operation phase transactions is slightly limited. However, some transactions have already taken place.*

- *Developer B*

*The exits we have performed so far have started from our initiative. However, we are regularly contacted by interested buyers. If we receive a lot of contacts, this indicates that maybe we should at least consider selling.*

- *Investor G*

#### 4.1.2 Ownership patterns depend on owner's strategy

Interviews highlight various types of investors. The most fundamental way to separate investors is by their strategic motivation and role in the industry. As mentioned in section 4.1.1, owners can be roughly split into two categories and their subcategories:

1. Companies utilising electricity for their own use
  - a. IPPs
  - b. Industrial companies
2. Pure investors
  - a. Investment companies
  - b. Real estate, infrastructure and renewable energy funds
  - c. Pension funds

Companies who utilise the generated electricity for their own use have a different view on renewable energy asset ownership than pure investors who typically view the assets purely from an investment opportunity perspective. This motivation behind a company's strategy, leads companies to behave in varying ways.

Industrial companies and IPPs are among the entities that utilise electricity for their own use. IPPs produce electricity to sell to end-users and typically develop and manage their electricity-producing assets throughout the assets' lifecycle. Due to their business model, which highlights the continuous generation of electricity as a necessity, IPPs view owning renewable energy assets from a long-term perspective rather than as a short-term investment. Similarly, industrial companies may want to invest in renewable energy assets to be able to generate electricity for their own operational needs. These companies often see renewable energy investments as a strategic move to ensure a reliable and sustainable energy supply for their production processes.

*The list of possible owners also includes industrial companies that require energy in their own production and want to supply a share of their energy demand with a production asset of their own.*

- Developer D

Pure investors, on the other hand, are typically driven by the investment opportunity. They can be grouped based on the company type or even further in detail depending on their motivation behind investing in renewable energy assets or the level of risk they are willing to take. The most frequently mentioned groups of investors in the interviews include investment companies, real estate, infrastructure or renewable energy funds as well as pension funds. Regardless of the type of the pure investor, interviews suggest that

pure investors typically take a more managerial role in the asset's construction and operation.

*Our goal is to participate in the actual tasks [related to the asset's construction, operation and management] as little as possible.*

- *Investor G*

According to interviews, investment companies as well as real estate, infrastructure and renewable energy funds can be organised in various manners, and they can have various investment strategies that affect their ownership. Investment companies and funds tolerate varying levels of risk depending on their investment strategy. Several interviews suggest that a 7-10-year investment horizon is typical within these operators.

*We have worked with funds that have had an investment horizon of 7-10 years. After this [the expiration of the investment timeframe], the assets have been either sold onward or the fund's ownership has continued if the asset has provided the desired profit.*

- *Developer B*

Pension funds are also recognised as a typical investor in the renewable energy market. They operate with a lower risk profile in comparison to investment companies and funds.

*One group of investors is pension funds. They typically look for long-term ownership and a lower level of risk.*

- *Developer B*

Interviews highlight the market's nascent nature. As renewable energy assets are often still young concerning years they have been in operation, the number of transactions per asset is limited. Interviews suggest that investors' strategies are still in shift and conclusions drawn at this moment only reflect the current situation. Nevertheless, current analysis indicates that having a single investor per renewable energy asset or portfolio is more typical in the industry—regardless of the status or type of the owner. Projects with several investors exist too, however, the interviewed investors highlight that they prefer to have control in decisions regarding the asset and its future.

*Situations where there are several investors take place quite rarely.*

- *Developer B*

*We always prefer to have a “join control” at minimum. Even if we are collaborating with someone on the project, we want to be in the “driver’s seat”.*

- *IPP F*

*Though we want to have minimum responsibility for the daily management of the asset, we still want to have the power to make decisions regarding it—for example, if a development project needs to be shut down, we want to be able to make that decision.*

- *Investor G*

In the case of fund investors, being the sole investor makes sense too, as the fund is already a collective investment vehicle in itself. Sharing the ownership even further beyond the already collective fund is not seen as sensible.

#### **4.1.3 Tendering preferred among pure investors and later-stage deals**

Asset ownership changes happen through transactions and companies have various preferences in how the transactions are performed. Firstly, interviews suggest that there are active ongoing discussions in the market between possible renewable energy asset sellers and buyers. As the market in Finland is still relatively small and the number of players is limited, the operators in the market are familiar with one another which makes having direct discussions easier.

*My educated guess is that market operators have trusted partners who they contact first when seeking buyers or assets to buy.*

- *Expert K*

This claim is further supported by the developer side.

*In practice, we are continuously in contact with several parties. Through our numerous transactions, we have “friends” in the market, whom we can reach out to.*

- *Developer D*

The existing relationships and connections are valuable when a seller is seeking a new investor for a project. These connections allow sellers to initiate 1-to-1 discussions with already familiar investors. However, in addition, the sellers have the option to organise an official tendering process—either by themselves or with the help of an external party, a transaction advisor.

*[when seeking an investor] one option is to activate 1-to-1 discussions with investors or to utilise a transaction or financial advisor and organise an official tendering process*

- *Developer B*

*When exiting an asset, we have two options. We can either organise a tendering process by ourselves or with the help of a financial advisor or contact a few parties we know might be interested in purchasing the asset.*

- *Investor H*

Though both options are possible ways to operate and are used in the market, 1-to-1 discussions seem to be a more preferred option when a developer is selling an asset. If the developer has connections from previously performed deals, it is worth discussing whether these connections would be interested in future collaboration. Hiring and utilising a transaction advisor requires resources, so if there is an opportunity to minimise these costs, the developer is likely to take the opportunity.

*Based on discussions with different market operators, I have got the impression that 1-to-1 discussions are the initially preferred option. If the discussions don't lead to a deal, a transaction advisor can be contacted, and an official tendering process arranged.*

- *Developer B*

However, a developer highlights that doing deals with existing connections without the help of a transaction advisor can harm the price a developer receives from a deal.

*In these situations [when seeking investors], we must balance with how much and how actively we want to be in contact with "old acquaintances", as the value of the asset is more likely maximised through a tendering process.*

- *Developer D*

If a developer wants to sell an asset without the help of an advisor, they must have internal capabilities for running the process. This includes an in-depth understanding of the investor perspective as well as project management skills accompanied by an understanding of all the required steps that take place during the transaction process. Consequently, workforce for this is required. A developer who hasn't utilised transaction advisors for now, mentions that they have worked without an advisor thus far because, for the time being, they have had the required capacity to run processes. If the number of transactions increases, they must reconsider.



The two routes are also highlighted from the investor perspective as suitable ways of finding new investments. Investors, however, can typically be more passive in the process, whilst developers and advisors are the ones contacting the possible buyers.

*We have contacted developers via advisors. Similarly, we have been contacted by developers and advisors. Actually, in the current market, it is quite typical that we continuously receive “teasers” and other marketing materials for assets from advisors via email.*

- *Investor G*

From an investor perspective utilising a transaction advisor is seen more preferable.

*We once did a project via 1-to-1 discussions without an advisor—I would not recommend this option.*

- *Investor G*

Finally, interviews indicate that the phase in which an asset is in its lifecycle likewise can affect the chosen method of how to run a transaction. Interviewees hypothesise that often at the early stages of the project, e.g., during the development, 1-to-1 discussions are preferred as this allows the developer to do possible deals more discreetly. As there is always a risk that a development project would need to be shut down for example due to challenges with the landowner etc., discreetness is something a developer might appreciate.

*If a company has an early-stage project, it might be more tempting for them to try to find a new owner through 1-to-1 discussions, as this allows a more customised transaction process and a more discreet process.*

- *Developer B*

Once the asset is fully developed, risks are smaller, and the seller's primary motivation is to receive the highest price for the asset. At this point, arranging a tendering process can generate a more comprehensive understanding of all potential buyers allowing the seller to find the highest bidder, and, hence, be a more preferred option.

#### **4.1.4 Summary of current ownership and transaction practices**

Currently, the ownership of renewable energy assets is organised in various ways. During the development of an asset, the ownership is typically held by a developer, a development phase investor or an IPP. As the asset moves to the construction and operation phase, the ownership typically shifts from the developer or development phase investor to a longer-term investor or an

industrial company. IPPs typically continue owning and industrial companies acquire the energy-producing asset for a longer period due to the nature of their business model—IPPs typically develop the asset for their own use to sell electricity further and industrial companies utilise the electricity produced by the asset for their own use. Longer-term investors, on the other hand, include investment companies as well as renewable energy, real estate and infrastructure funds. Pure investors sell and buy assets depending on their strategy and investment plan. The various owners are visualised in Figure 5 below.

Ownership of an asset changes through transactions. Exemplary places for a transaction to take place are depicted by black diamonds in Figure 5. Transactions can be organised either through 1-to-1 discussions or an official tendering process. The tendering process can be organised either by the seller or with the help of a transaction advisor. 1-to-1 discussions are more popular when the asset is still in its development phase, while the popularity of an official tendering process increases once the asset is in operation. Consequently, developers tend to at least try to find an investor for a developed asset through discussions whereas investors tend to prefer official tendering processes when selling an asset onwards. How a transaction process is run is likewise dependent on the seller's and buyers' internal capabilities and resources.

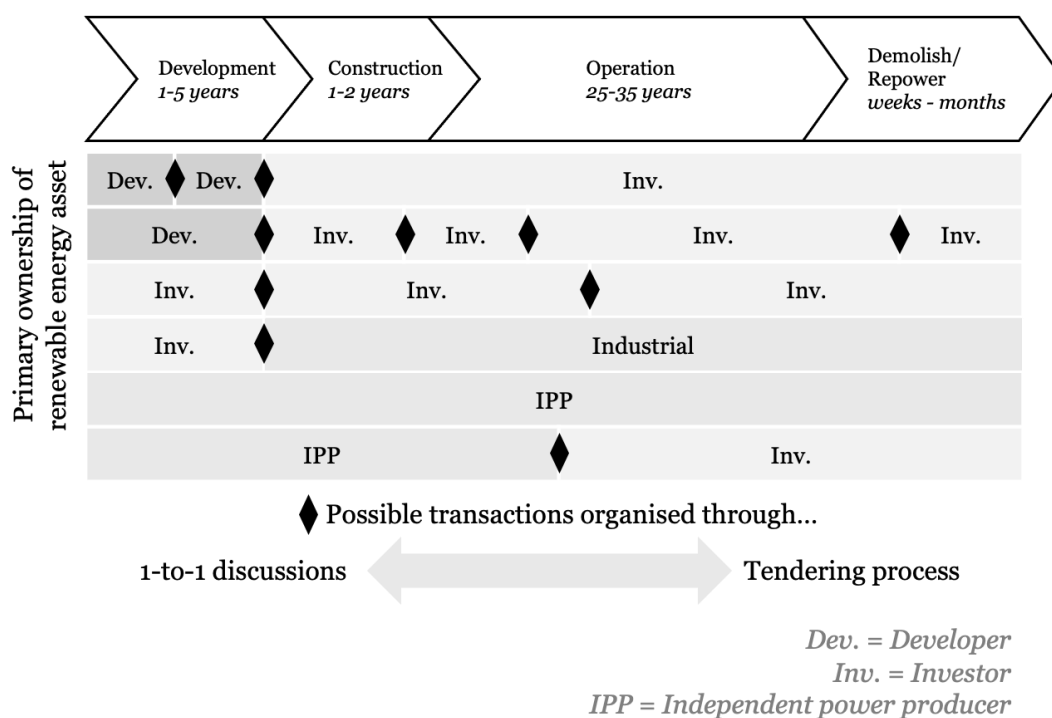


Figure 5: Current ownership and transaction patterns

## 4.2 Market drivers and expected development

The demand for renewable energy in Finland is primarily affected by electricity demand. Additionally, especially investor behaviour is strongly dependent on optimal macroeconomic factors. Investor appetite, consequently, links to project financing and by extension to developer activity. Likewise, legislation plays a significant role in the way in which developers can operate. As the market matures, operator and project-related trends become more visible, indicating the direction in which the market is developing.

### 4.2.1 Renewable energy market driven by electricity demand

Practically all interviewees state that their motivation to work in the industry is based on the possibility to support the global shift towards a more sustainable society and world. Despite the value-based motivation, interviewees highlight that to successfully operate within the industry each company must have a feasible business model.

*We are a part of this industry because we want to partake in the fight against climate change by producing cleaner electricity. Then again this is also a business for us—we want to make a profit and see that functioning in this industry allows us to do so.*

- IPP E

All interviews highlight that the development of the renewable energy industry, and consequently the future of each company, is dependent on the rate with which electricity can be utilised in society and how large the share of electricity from total energy consumption is. When electricity demand increases, there is more need for electricity production. As the electricity demand grows, the price of electricity likewise increases, making the production assets more profitable to their owner. This has a direct effect on investors' willingness to participate in the market and thus affects how many assets developers can develop.

*At the moment, 94% of Finnish electricity is carbon-free. Electricity, however, forms only a third of the Finnish energy consumption. The remaining 70% comes from other energy sources and this is the share that powers our transportation and heating. The electrification of these areas is an important mission to us.*

- Expert K

*In everyday conversation, we easily mix electricity and energy—but they are not the same. For example, in Finland, a large share of electricity is already “clean”. However, from the total energy consumption, electricity forms a smaller share. Growing this precise share has a significant societal impact because this supplants less clean forms of energy.*

- Developer B

The imperative need for electricity demand growth for the renewable energy market’s survival is recognised on the developer side.

*If electricity demand doesn’t increase, the number of renewable energy projects will come to a halt.*

- Developer D

Investors agree.

*The market would be more lucrative for us if the electricity demand were higher. Our business is dependent on selling electricity and the higher the price is, the more profitable our business is. Electricity prices can be increased only by increasing the demand.*

- Investor G

It is evident that the renewable energy market is dependent on electricity demand growth. When discussing potential ways to increase the electricity demand, five means were highlighted through the interviews.

1. Investments in industry and data centres
2. Transportation
3. Heating
4. Adoption of new technical solutions
5. Electricity as an export

Investments in industry and data centres are recognised as an important, if not the most important, source of electricity demand growth. It is likewise, a source of growth that is already proven to take place: both Google’s data centre investment in Hamina, Finland and SSAB’s steel mill investment in Luleå, Sweden are mentioned in several interviews as examples of investments supporting the industry. Though interviews highlight that investments are dependent on industrial operators’ internal decisions, Finland, nevertheless, is a highly potential location for such investments due to its stability and reliability—both from a political and regulatory as well as electricity network perspective.

*I would highlight industry and data centres as the largest means [to increase electricity demand]. Electrification of industry is continuously at least “on the table” [in discussions] at companies.*

- *Expert K*

*I strongly believe that investments in data centres etc. are bound to happen if we look at how much data we are utilising in our daily lives.*

- *Investor F*

*Finland has such a reliable electricity network that data centre investments in Finland make sense.*

- *Developer D*

Secondly, the electrification of transportation is highlighted in several interviews (e.g., *Developer C & Developer D*). This, in practice, refers to the increasing usage of electric cars. In addition, potential lies within the electrification of heavy-duty transport, which remains currently more under development.

Similarly, still somewhat underway, is the electrification of heating. Interviews highlight that heating is still highly dependent on carbon-based energy forms, making it an area with development potential. Only recently have electric boilers been taken into use, offering an electricity-utilising solution for an otherwise carbon-dependent area. The speedy deployment of electric boilers, likewise, reminds how fast new solutions with a significant impact can be introduced to an industry.

*In 2023 no one talked about electric boilers. Now, Fingrid has announced that they have received 2 GW worth of applications for electric boilers.*

- *Developer A*

*We can already see investments in heating via electric boilers.*

- *Expert K*

Fourthly, innovations and emerging industries can offer potential for electricity demand which is still somewhat uncertain. When asked about factors affecting the renewable energy market, several interviewees mention hydrogen solutions and Power-to-X technologies (P2X). These areas, however, seem to be still less well understood by renewable energy developers and investors, and evaluating the magnitude of impact that new technologies can have in the future remains uncertain. Nevertheless, as such technologies are mentioned by several interviewees, it can be assumed that they are still an

area to follow up on when evaluating the development of the renewable energy market.

*It will be interesting to see how the hydrogen economy will change the market and increase electricity demand.*

- Developer D

*I am a bit reserved about a vast hydrogen economy. However, I believe that in 2030 we will already have some hydrogen derivative projects.*

- Developer B

The final factor mentioned affecting the increase in electricity usage is the potential expansion of electricity transmission links to Sweden and central Europe. By becoming an electricity exporter, Finland could inorganically create more electricity demand and encourage more investments in Finland.

*Increasing electricity transmission links to Sweden and especially to central Europe could increase electricity demand and would boost the renewable energy production demand in Finland. This would make Finland an electricity transporter, increasing electricity supply in other countries.*

- Developer D

#### **4.2.2 Investor appetite dependent on macroeconomic environment**

In addition to factors affecting the overall demand for renewable energy projects, general macroeconomic factors also affect how operators function in the market. Interviewees highlight that the renewable energy property market functions on market terms, meaning that it is no longer dependent on, for example, subsidies. This is generally seen as a positive factor.

*We feel that it is a good thing that the market functions based on market terms. In a sense, the market cannot be “taken away” or “suppressed” by removing a subsidy or such. However, this makes functioning in the market more challenging.*

- IPP E

The market-led aspect of the industry and the dynamism it brings, are both highlighted in several interviews.

*The market is mega dynamic. If we consider how the market has developed, we notice that the development has been led by the general macroeconomic environment.*

- Developer D

The effect of the macroeconomic environment is evident through investor behaviour. If the conditions for investors to function are poor and for example finding financing solutions is challenging, investors have less opportunity to invest in renewable energy assets. As the development of renewable energy projects is dependent on receiving financing for the projects, a challenging macroeconomic environment has direct implications for the number of projects a developer can develop.

*All macroeconomics-related factors, such as inflation rate and interest rate levels, have a direct effect on investor keenness. Poor investor keenness directly influences the value of the projects. For example, the high interest rates we have been experiencing during the past years have been “poison” for development projects.*

- *Developer D*

Furthermore, developers are dependent on the cost of raw materials, construction and logistics work. *Service Provider I* provides an example describing the market situation in 2023.

*The construction cost was also high because of supply chain issues and the tariffs imposed upon Chinese products by the US. All these factors led to a decrease in the valuation [of the renewable energy assets].*

- *Service Provider I*

The macroeconomic challenges of the past years have led to developers slightly halting projects and leaving some projects waiting for a better economic situation.

*I believe that operators have quite a few projects waiting in the “drawer” for a better time to start construction work.*

- *Developer C*

This is further supported by *Expert K*.

*We are well aware that many developers have projects waiting for a better time.*

- *Expert K*

Despite the recent macroeconomic environment, *Expert K* emphasises that the renewable energy market is still showing growth and the overall trend on the market is positive.

*Though at the minute the market isn’t as booming as it was in 2022, we must remember that there is a lot of wind power under construction.*

*This year 1000 MW of wind power will be built, making 2024 the third or fourth best year in the Finnish wind power market ever. In that sense the situation is good.*

- *Expert K*

The overall positive outlook of the market combined with the projects developers have in store waiting indicate that the renewable energy market can grow fairly fast as soon as the market environment turns more positive.

#### **4.2.3 Consistent regulation fundamental for operators**

Interviews remind that though the renewable energy market functions on market terms, the industry is still highly regulated in a legislative sense. Interviewees highlight that the development process in Finland requires communicating with a variety of different stakeholders to receive the required permits as presented in section 2.1.2. Overall, interviewees emphasise that the legislation in Finland is well-founded, and functions well and as intended. However, as changes in legislation and law-required processes have a direct effect on how market operators function and what is expected from them, alterations in legislation are seen as a threat.

*As the situation is currently so good, all changes [in legislation] are principally a threat because we never know whether an alteration changes the situation for the better or worse.*

- *Developer C*

*Legislation must be transparent and foreseeable. Renewable energy investments are long-term and significant in size, hence “the rules” must be clear for a long period.*

- *Developer B*

The interviews give the impression that change is habitually frowned upon, and consistency supports the functioning of the market. Nonetheless, areas in which regulatory obstacles should be removed and change would be welcome also arise in discussions: regional issues and offshore wind legislation.

Interviews highlight, that eastern Finland is currently off-limits regarding wind power due to military decisions. As windmills are relatively high, the Finnish military states that having them near Finland’s eastern border could have a disturbing effect on military operations in the area. Hence, eastern Finland is not utilised for wind power. Based on interviews, this hasn’t been a significant issue so far, as there has been enough area elsewhere available for wind power use. However, if the demand for wind power were to grow, eastern Finland might become crucial to meet the growing demand.



Additionally, having wind parks evenly around Finland would remove pressure from landowners in certain areas. Also, the weather conditions, including the level of wind, around the country vary, meaning that if wind parks are evenly spread around the country, the intermittency-related challenges of the energy form have a less intense effect.

*The question about the use of eastern Finland is significant. In practice, we have one-third of the Finnish area “out of the game” due to this issue. Solving this issue has a direct effect on diminishing stress in certain areas of Finland and levelling electricity prices.*

- *Expert K*

*I see that solving the “eastern Finland issue” is important for increasing the amount of wind development in Finland. Eastern Finland has a good wind profile [it is suitable for wind power production] and increasing wind production there could also strengthen the vitality of the area.*

- *Expert C*

A second legislative issue that potentially could affect the renewable energy development in Finland, is related to offshore wind power. Currently, the legislation related to Finnish offshore wind power is under development. This means that developing offshore wind power in Finland is more challenging until the legislation is finalised.

*The Finnish Ministry of Economic Affairs and Employment decided to renew the legislation related to offshore wind power. This means that the entire industry can be properly developed later on, slowing down industry development.*

- *Developer D*

As highlighted by several interviewees, the offshore wind power market in Finland is not very mature. However, if the electricity demand were to increase due to the factors mentioned in section 4.2.1, offshore wind power might be required to be able to meet the demand.

To summarise, though the legislative framework in Finland is seen as relatively well-functioning and supportive of market development, changes can have a significant effect on the way the renewable energy industry can develop in the future. Hence, the implications of changes must be understood—also in the long run.

#### 4.2.4 Investor pool internationalising as market matures

The development of the renewable energy market is dependent on the behaviour of market operators and the trends identified amongst them. Interviewees highlight that the development of the developer pool varies based on the renewable energy type in question, whereas the investor pool seems to be growing and internationalising further in all cases.

Based on the interviews, the development of the developer pool is dependent on the maturity of the renewable energy form in question. Onshore wind power is the most mature market of the ones in the scope of this thesis, as it has the longest history in the Finnish market. Interviews likewise emphasise that it is the most significant in terms of production numbers and it is expected to have the most significant role in the Finnish energy system in the long run too. As the market is already quite mature also in terms of developers, several interviewees suspect that the developer pool will remain somewhat similar to what it is now or even slightly consolidate.

*I believe that current onshore developers have the capacity to cater for future demand.*

- *Expert K*

*I see that the onshore wind power market is fairly mature, and I don't see new developers entering the market. It's more a matter of whether certain developers manage to develop along with the market and, for example, manage to create a competitive advantage that doesn't even exist yet.*

- *Developer B*

Offshore wind power, on the other hand, is still in its initial stages in Finland. There is one operational offshore wind power plant in Finland, and a few are under development. However, as mentioned in section 4.2.1 the legislative environment regarding offshore wind power is still shifting, which will most likely slow down its growth. When the offshore wind power developer pool is concerned, the still-developing market can offer opportunities to new developers in the area. As building offshore wind power differs from onshore wind power development, the potential for completely new developers to enter the market exists.

*Off-shore wind power is still very much developing and new players will most likely enter the market.*

- *Service Provider J*

Both solar power plants as well as the energy storage solution market are fairly well developed in Finland, however, not to the same extent as onshore wind power. Especially the solar power market can currently be characterised to include several smaller companies and have less established players as the onshore wind power developer market. The storage market can be described similarly with a high level of competition. As the markets develop, several interviewees expect the pool of developers to consolidate.

*I believe that the energy storage market will be highly competitive in the future and consolidation will take place within the developer pool.*

- Developer A

*The solar side is currently more vacated by smaller “one-man businesses”. Hence, consolidation is bound to happen as the market develops.*

- Developer B

In addition to the developer pool shifting, several interviewees envision an increase in hybrid projects. As technologies develop and the renewable energy market becomes more established, combining several energy production forms or including storage assets directly to the energy production site can be a lucrative solution for developers and investors. One interviewee suspects that hybrid projects might create more collaboration between investors instead of the currently more typical single-investor ownership structure.

*I suspect that as technology develops and hybrid projects take place, also the number of projects with several investors increases, as this way risk can be divided.*

- Developer B

Irrespective of the possible number of hybrid projects, several interviewees expect the investor pool to keep on growing, internationalising and becoming more versatile. This indicates that several parties see the renewable energy market as a lucrative market to be in and the investor pool can be expected to grow.

*The Finnish market already has quite a few international investors, but I see the internationalisation continuing.*

- Expert K

*I heard an investor in the market comment: “Each time we make deals, the list of potential investors contains new names I have never heard about.”*

- Investor G

#### **4.2.5 Summary of market drivers and expected development**

The market and its expected development are affected by several environmental factors. How much renewable energy will be needed in the future and, hence, how much new renewable energy assets will be built is dependent on the rate and extent to which electricity utilisation will increase in Finland. This is affected mostly by investments in industry and data centres, electrification of transportation and heating as well as the level of adoption of new technical solutions such as hydrogen and P2X solutions. Secondly, macroeconomic conditions must be suitable for investors to be able to show interest towards the industry. If macroeconomic conditions are poor, say interest rate levels and inflation are high, investor activity decreases, which has a direct effect on how many projects can be developed. Likewise, regulation and legislation must be consistent and far-reaching to support market development and lure new investors to the market. Likewise, existing legislative challenges, such as the eastern Finland wind power issue and offshore wind legislation, should be solved to allow the market to develop to its full potential.

In addition to environmental factors, trends within the renewable energy market operators indicate the direction in which the market is developing. Interviews highlight that the maturity of the developer pool in Finland varies depending on the renewable energy form in question. Onshore wind is the most utilised and, hence, the most mature in Finland of the energy forms within the scope of this thesis. Hence, the onshore wind power developer pool is likewise fairly mature, and market operators expect no big changes within the developers. Offshore wind development, on the other hand, is still undeveloped, for example, due to the shifting legislation. Therefore, the developer market can be expected to grow provided that the legislative environment in Finland matures to a more welcoming state. Solar and energy storage development have experienced growth during the past years. Due to intense market growth, the developer pool is crowded with smaller operators. Consolidation can be expected to happen as the market matures.

Despite, the pool of investors within the Finnish renewable energy market being already quite broad, interviews highlight that it can still be expected to grow as the market matures. Interviewees expect that even more, especially international, investors enter the market as the Finnish renewable energy assets and market practices mature. New international investors are lured to the market as technology develops and the number of hybrid projects utilising several energy forms, storage solutions and possibly even forms of electricity use, such as data centres, increase. As the number of hybrid projects increases, it is likely that projects with multiple investors per asset or portfolio likewise increase.

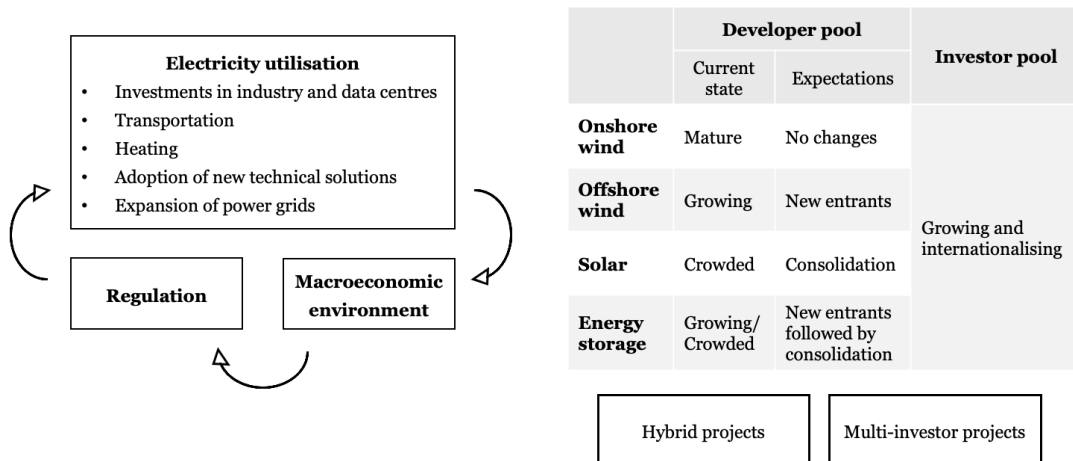


Figure 6: Identified market trends

### 4.3 Role and impact of service providers

Interviews highlight that service providers have an important role in the renewable energy market and market operators view service providers in a positive light. Among the utilised service providers, transaction advisors, have an important role. How much and when transaction advisors are utilised is dependent on the client who is utilising the service. Transaction advisors are most appreciated, because of their knowledge and contacts of the investor network as well as transaction process-related knowledge. Furthermore, as transaction advisors partake in several transactions, they gain knowledge related to the market, which can be challenging for a client to acquire.

#### 4.3.1 Positive perspective on service providers

Interviews highlight that a variety of advisors are used during the lifetime of a renewable energy asset. Almost all interviewees highlight that they use external service providers within their operations and do not perform all tasks in-house. The role of service providers varies from technical roles and tasks, for example, performing EIAs and electricity price development studies to more commercial and strategic tasks, such as asset valuation, strategic consulting and transaction advisory. Likewise, legislative assistance from lawyers is often used throughout the lifecycle of renewable energy assets. Overall, service providers seem to have a fundamental role in the renewable energy market and the demand for them is expected to grow due to market trends identified in section 4.2 Market drivers and expected development.

*I would assume that in the future the need for different sorts of advisors is to grow. As the renewable energy market develops, competition grows increasing the number of required assessments etc. that need to be done as a part of the process. This will bring new stakeholders and advisors to the market.*

- *Developer C*

*I assume that as the renewable energy market matures, investors too become pickier. This will create demand for specific knowledge—external advisors can cater to this.*

- *Developer B*

#### **4.3.2 Transaction advisor demand depends on resources and skills**

As discussed in section 4.1.3, several developers and investors utilise transaction advisory when doing transactions. From a developer perspective, a transaction advisor is seen as beneficial practically always. However, whether an advisor is utilised is a question of resource allocation. *Developer C* clarifies:

*For now, we have managed to drive transactions with our in-house team—we have a good process on how to run the transaction. However, as projects get more complicated or if we are to sell a portfolio, I see the need for a transaction advisor increasing.*

- *Developer C*

Furthermore, it seems that the decision of whether a transaction advisor is utilised can be highly dependent on the project and the current situation within the developer company.

*In some projects we have done the investor screening process by ourselves if we have had the resources available. Recently, however, we have had to utilise an advisor due to the lack of internal resources.*

- *Developer D*

Investors too have a similar need for advisors. Investors are a highly heterogeneous pool of operators with varying levels of knowledge and differing motivations for why they are functioning in the market. As discussed in section 4.2.4, the investor pool can be expected to diversify and grow as the renewable energy market matures—also with more international operators entering the market. Interviews suggest that the identified trends can have an increasing effect on investors' need for transaction services.

*Especially investors new to the market from my experience prefer to use a transaction advisor, as they are less familiar with local practicalities and regulations.*

- *Developer C*

*Investors have the same need [for the help of transaction advisors]. Super sophisticated investors are still very rare, and investors have varying needs and motivations. Having an advisor navigate you through the process has immense value for the investor too.*

- *Developer D*

### **4.3.3 Client and process understanding key skills for advisors**

According to interviewees, the benefits a transaction advisor can offer to the client are vast. Some benefits are more catered to developers whereas some benefits materialise for both developers and investors.

Interviews with developers highlighted that a significant benefit a transaction advisor can offer is access to a wider investor pool. This factor was highlighted by all four developers (A, B, C, D). Though developers have existing connections with investors from previous transactions, the renewable energy investor pool is continuously developing. This makes keeping a holistic understanding of all possible investors challenging for the developer, who typically doesn't have dedicated resources for investor-seeking alone.

*When we are selling an asset, the biggest benefit for us has been their [transaction advisors] knowledge of the investor network. With a transaction advisor, we can broaden the “reach” we have regarding investors. Advisors can reach and deliver information to several investors.*

- *Developer A*

*Sometimes we have done the investor screening in-house—provided we have had the resources available. However, typically we don't have the resources.*

- *Developer D*

Additionally, a transaction advisor has a more holistic understanding of the investors' needs. From a developer's perspective, keeping relationships with several investors can be a challenge, as the developer's daily tasks typically focus on other parts of the business. Having an advisor who is familiar with the situation of investors and understands which investor might be interested in certain assets, minimises the number of unnecessary contacts with investors who are not in a place to invest or are not interested in certain types of assets.

*It is our job to upkeep relationships with investors. Hence, we have an understanding of what the investors are looking for.*

- *Service Provider I*

Furthermore, transaction advisors offer a way for market operators to outsource work. This is beneficial for both developers and investors. Both market operators recognise that their organisation has limits, for example, the number of employees can't grow beyond certain limits. Hence, utilising advisors for certain tasks is important and will most likely be a constant in the market.

*From our perspective utilising a transaction advisor is a matter of outsourcing. We do a large number of transactions, and we simply don't have the resources to screen and shortlist suitable investors.*

- *Developer D*

*We have a relatively small team. It makes our job easier when an advisor can take responsibility for communicating and answering questions. Ideally, advisors would do even more of the work, and we could practically stay out of the negotiations.*

- *Investor G*

Similarly, interviewees highlight that transaction advisors offer expertise, especially around the transaction process itself. Advisors have an understanding of what needs to be done, when and how, which minimises the need for managerial meta-work that would otherwise need to be done in addition to running the actual transaction process. *Service Provider I* highlights the importance of the advisor's expertise:

*Understanding the transaction process is important. Even if an investor works in the business for 10 years, they typically experience maybe two transaction processes at best. For us, on the other hand, running the transaction process is our daily work and we are familiar with transaction "best practices". These are also matters that you really can't learn from a book—you learn them by being a part of the negotiations.*

- *Service Provider I*

*Developer D* agrees:

*The fact that the transaction advisor can navigate through the transaction process and understands what we need and what the investor needs has significant value.*

- *Developer D*



Moreover, as transaction advisors continuously perform new projects, they constantly update their understanding of market processes and gain information about the market that would be otherwise challenging to obtain. Though some market information is transparent, oftentimes, matters such as deal value remain confidential. Though the advisors cannot share information onwards to their clients, it nevertheless contributes to their holistic understanding of the market and market operator dynamics and trends, which will give them an advantage when operating in the market. As an important role of a transaction advisor is to offer an independent verification or a 2<sup>nd</sup> opinion, having a holistic understanding of the market is important. *Expert K* highlights that though the seller and buyer would be in active discussion and contact with each other, they can have varying motives regarding deal value, which is why the parties need to verify the information they receive. *Investor F* concurs:

*These things [for example deal value] are never black and white. This is why a third-party opinion from an external party is often important; it is good to check everything is ok and makes sense.*

- *Investor F*

Having a holistic understanding of the process and market situation gives the parties of the sales process an advantage also negotiation-wise. If the seller or buyer feels confident in what they are asking from the other party of the transaction, they stand stronger in the negotiation situation. However, if a transaction advisor is being used, the advisor too can increase the negotiation leverage the operator has.

*One thing [that a transaction advisor brings to the process] is that they can be slightly more aggressive and push the price or conditions in the negotiations so that we don't have to do it. This gives us an advantage in the negotiations.*

- *Developer D*

#### **4.3.4 Summary of role and impact of service providers**

Interviews highlight that service providers in general are seen as an incremental part of the Finnish renewable energy market and there is a clear need for a variety of different service providers ranging from more technical and physical roles to ones more strategic and advisory focused. As introduced in section 4.1.3, transaction advisors likewise have an important role in the industry and several transactions in the industry have been led with the help of a transaction advisor. According to interviews whether a transaction advisor is utilised or not, is dependent on the seller's or buyers' internal skills, familiarity with the market and objectives for the transaction.

Transaction advisors are seen as especially beneficial as they have an extensive understanding of the investor pool and insights into investor needs. Likewise, through the several projects they associate with, advisors gain access to market information that can't be acquired from a client position. Such information can be of assistance when negotiating a transaction. Furthermore, advisors offer additional resources to the client and, hence, minimise the need for client-side input. Likewise, advisors have critical knowledge of how the transaction process should be run and what steps to include. This is something clients might not have, as the number of transactions a client partakes in is limited. Finally, transaction advisors support clients by offering independent verification and a "2<sup>nd</sup> opinion" that supports both sellers and buyers in a transaction ensuring that the transaction is carried out on fair terms.

As the market grows through the ways introduced in section 4.2 Market drivers and expected development, the need for transaction advisory can be expected to grow. One source of increased transactions is due to the assumed increase in the number of projects. Secondly, the demand can be expected to grow as the versatility and diversity of both projects and the investor pool grows. The more complex the projects and their ownership structures are, the more there will be a need for an external advisor. Likewise, as the investor pool internationalises, this too will create further demand for a transaction advisor. Finally, as the Finnish renewable energy asset pool matures, more investor-to-investor transactions will be organised. Interviews indicate that in such deals use of a transaction advisor is preferred.

When the expected market growth and need for transaction advisors are combined with the identified positive reception and position of transaction advisors described in section 4.3 Role and impact of service providers, a list of external factors affecting transaction advisors and their entry into the renewable energy sector can be identified. These factors are elaborated in Figure 7 below.

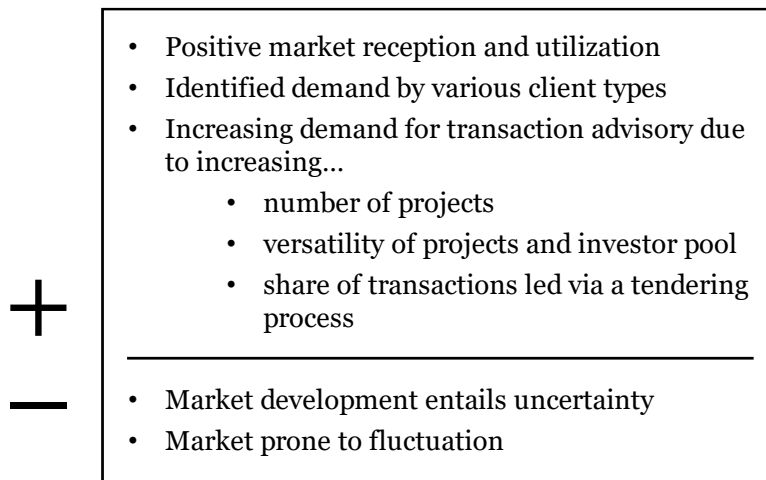


Figure 7: Identified external factors affecting transaction advisors

#### 4.4 Needs for advisors shifting to renewable energy

To successfully shift from real estate transaction advisory to renewable energy transaction advisory, service providers need to be able to adopt new skills. Interviews highlight, that transaction advisors must have deep, market-specific understanding and their ability to adapt to individual client needs enhances their effectiveness. Likewise, it is evident that though renewable energy advisory requires more technical understanding than traditional real estate advisory, the fundamental core competencies of the advisors remain the same within both sectors, which indicates the potential for companies to diversify from one sector to another. The following section explores the needs of service providers and the differences and similarities between traditional real estate and renewable energy.

##### 4.4.1 Necessity for client and project-specific knowledge

Interviewees highlight factors where transaction advisors could further excel. A primary need is a deep understanding of market specifics and nuances. Interviewees emphasised that advisors who possess granular knowledge of market dynamics are better positioned to provide strategic insights, anticipate potential challenges and know what the client needs to do.

*The team [transaction advisor who the developer has utilised] stands out in a positive way because they clearly have an understanding of the market. They know what we need—maybe even better than we do.*

- Developer A

Additionally, adaptability to each developer and investor's needs was identified as a critical strength. Advisors who tailor their approaches and solutions to the unique requirements and preferences of different stakeholders were praised. Similarly, especially investors called for an even further integration of transaction advisors into the process. An investor mentions that they prefer to communicate as little as possible with the potential seller or buyer and hope that the advisors would take even more ownership of the entire process. Developers have identified similar trends. However, it is highlighted that some investors are very thorough regarding the process. Hence, no direct conclusion of investor preferences can be made.

*There is variation in how interested investors are. Some are very meticulous and "hands-on" in the process, whereas others are more approximate.*

- Developer B

#### **4.4.2 Need for existing advisory skills with additional technical depth**

The transaction advisory market for traditional real estate is considerably more developed compared to the renewable energy sector. Real estate advisory has a long-standing presence, with established advisors and well-defined processes. This maturity implies that clients seeking real estate transaction advisory services often have a clear understanding of the offering the service providers provide. Additionally, clients have a broader range of experienced professionals from which to choose a service provider. While the renewable energy transaction advisory market is less mature, it has developed in recent years. Interviews proved that clients in this sector, developers and investors, are increasingly aware of the advisory services available and there is a growing pool of advisors specialising in renewable energy transactions.

*Though the market has developed first in central Europe, we are now seeing advisors in the Nordics too gaining experience in the market and gaining ground.*

- Developer D

*When compared to traditional real estate, the renewable energy advisory is still less mature and the number of transaction advisors [within the renewable energy sector] in Finland is still quite limited. In traditional real estate, advisors are very on top of the process, whereas in some renewable energy transactions, the advisors too have not been as on track on what needs to be done and when. There is still a difference between the two.*

- Investor G

According to interviewees, the renewable energy market is inherently more complex and technical in comparison to traditional real estate. This has implications for the complexity of the transactions made within the market. This complexity arises from the need to understand the intricacies of the electricity market, regulatory frameworks and technological advancements in energy production and storage. Advisors in this sector must possess specialised knowledge to navigate these challenges effectively, making the role more demanding in terms of technical expertise.

*The renewable energy market is more technical. On the other hand, if an investor is selling the asset to another investor, the main priority is cash flow.*

- *Investor G*

As highlighted by *Investor G*, ultimately, transactions are a matter of finances. Hence, despite the differences between the two sectors, both renewable energy and real estate transaction advisors agree that a strong economic understanding is the most crucial trait for success. Regardless of the sector, advisors must be adept at financial analysis, market valuation and economic forecasting. These skills are fundamental to advising clients on investment decisions, structuring deals and maximising returns. Therefore, while the sectors may differ in terms of technical requirements and market maturity, the core economic competencies required for effective transaction advisory remain similar.

*Essentially, we are financial advisors. It's good to have technical knowledge, but we don't focus too much on technical degrees [for example when hiring new employees]. The sector-specific skills are more something you learn "on the job" so to say.*

- *Service Provider I*

#### **4.4.3 Summary of needs for advisors shifting to renewable energy**

When studying possible needs for development, interviews highlight that the skills required from a transaction advisor are mainly similar irrespective of whether the target of a transaction is a renewable energy asset or traditional real estate, such as residential buildings, hotels or shopping centres. Though transaction advisors offer several benefits, interviews especially highlight that in addition to the sheer workforce that advisor brings, the understanding of the economics of the transactions as well as an understanding of how to manage a transaction process were deemed most important. As this is highlighted important also in traditional real estate advisory, this indicates that current real estate transaction advisors have a fairly good starting point for expanding to the renewable energy sector.

However, some requirements for new entrants are also introduced in the interviews. Interviews highlight that the renewable energy sector is more technical than the traditional real estate sector. Understanding the market nuances is deemed important by interviewees, hence, transaction advisors must put effort into understanding the technicalities before entering the market. Market-specific knowledge can be gained for example by requiring industry experts to support in the area. This, however, can be seen as a cost for the service provider. In addition, building relationships with the renewable energy sector investors and gaining sector-specific data requires time and cost, which must be taken into account when considering a market entry. These internal factors affecting transaction advisors and their entry into the renewable energy sector are visualised below in Figure 8.

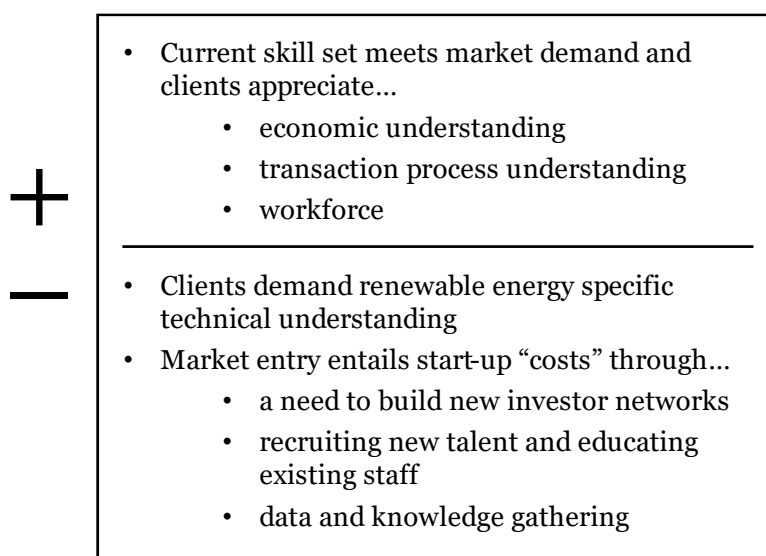


Figure 8: Identified internal factors affecting transaction advisors

## 5 Discussion

This section summarises the main findings of the thesis. Firstly, the two research questions of the thesis are explicitly answered through the summary of the results. Secondly, the theoretical implications section compares and integrates the key findings of this research with the learnings identified in section 2 Background and literature review. Thirdly, the practical implications of the study are discussed and recommendations for practitioners in the industry are given. Finally, the limitations of the study and possible future research needs are discussed. The goal of this section is to highlight the most important results of this thesis and present how this thesis can be utilised in practice and future research.

### 5.1 Summary of results

Answering the first research question, “*How are the ownership and transactions of renewable energy assets organised today, and what changes are anticipated in the future?*”, can be split into three parts: the current ownership and transaction patterns in the renewable energy industry, factors affecting the market development, and, finally, the anticipated changes in the market. Figure 9 below illustrates these three elements.

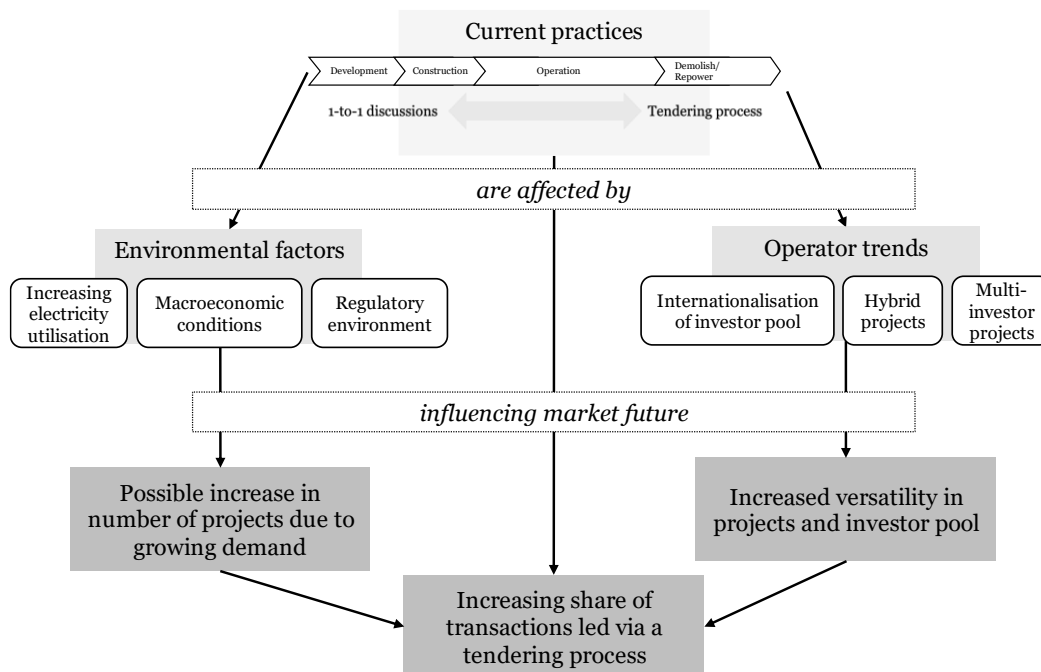


Figure 9: Market practices and determinants of market development

The research reveals that currently ownership of and transactions with renewable energy assets vary based on the operator's strategy, with transactions occurring at different stages of the asset lifecycle based on the operator's internal motivations and capabilities. Operators, who utilise the produced energy themselves, are more likely to do fewer transactions, whereas developers and pure investors tend to be more active in selling and buying new renewable energy assets as this is the core of their business model. The study highlights that all operators, developers, IPPs, and investors, see value in utilising a transaction advisor. However, investors seem to have a preference for employing a transaction advisor as this alleviates the number of resources they have to utilise for a transaction to take place. Developers, on the other hand, have a preference to at least first try to find a possible buyer for the asset under development via 1-to-1 discussions. Hence, transaction advisors tend to be more used in later-stage transactions rather than in development phase ones.

The future of asset ownership and transactions is dependent on environmental factors and operator trends. The most significant environmental factor is the demand for renewable energy overall, which is largely driven by electricity demand. Furthermore, macroeconomic factors, and regulatory and legislative conditions influence developer and investor behaviour and consequently project financing. Additionally, market operator trends impact the development of the industry. The developer pool is expected to develop depending on the developer's operating area (onshore wind power, offshore wind power, solar energy or energy storage). The investor pool, however, is expected to grow and internationalise within all renewable energy asset types. Furthermore, more hybrid projects combining several energy production and/or storage solutions, and multi-investor projects can be expected.

When the knowledge gained from both environmental factors and operator trends is combined with current practices, conclusions about the market development can be drawn. The number of renewable energy projects in Finland is growing. The extent of the growth is dependent on the environmental factors listed above with electricity utilisation growth being the single most significant contributing factor. As the number of renewable energy assets grows and technology develops, the versatility of projects will likewise grow. The investor pool and way in which investors collaborate in renewable energy projects is likely to increase and the range of technologies utilised within one asset diversify. Finally, as new renewable energy assets are built, existing ones mature and the new investors join the market, the share of transactions led via an official tendering process is to increase. As hybrid and multi-investor projects require collaboration with several parties, the need for transaction advisors in the future could increase further, as the number of hybrid and multi-investor projects increases.



The second research question, “*What is the current state of factors affecting the strategic decision-making of real estate service providers looking to expand to the renewable energy sector?*”, can viewed from two perspectives: through external and internal factors. The external and internal factors can be further split into factors that have either an encouraging or a discouraging influence on the decision-making of the real estate service providers. These are depicted in Figure 10 below.

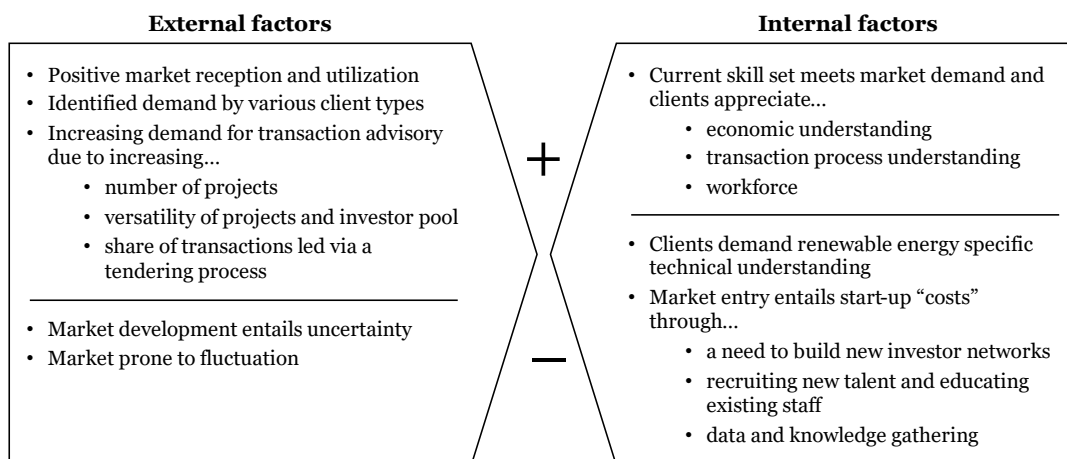


Figure 10: External and internal factors supporting decision-making

The strategic decision-making of real estate service providers looking to expand to the renewable energy sector is affected positively by market demand. Service providers, including transaction advisors, have a crucial role in the renewable energy industry and a clear demand for them can be seen. The companies contacted during this research, are aware of transaction advisory services and most utilise them, which indicates a solid foundation for transaction advisors to be utilised in the future too. Likewise, the market trends seem to support the utilisation of such services in the future, as discussed when answering research question 1. However, the renewable energy market and its development hold uncertainty and the development is prone to fluctuation depending on the overall macroeconomic environment and legislation, which creates uncertainty for operators functioning in the market—including transaction advisors. Nevertheless, especially dependency on the macroeconomic environment is also a typical feature of the traditional real estate market and, hence, real estate service providers are used to following macroeconomic trends and the fluctuation they might cause to service demand.

When looking at the current state of internal factors affecting the decision-making of service providers, this study indicates that the client requirements in both traditional real estate and the renewable energy sector are somewhat

similar. In both industries, an emphasis on understanding the economic environment, the transaction process and the dynamics between the operators is highlighted. The similarities between the two industries indicate that currently, real estate service providers most likely have a knowledge basis that matches client needs also in the renewable energy sector, which encourages expansion to the new sector. However, developing an industry-specific understanding is an important prerequisite for successful expansion. Likewise, transaction advisors should be prepared for start-up “costs”, such as new recruitments and time spent in getting familiarised with new investors, that will be faced when aiming to grasp the skills required in the new sector.

## **5.2 Theoretical implications**

This study contributes to academic research in the cross-section of renewable energy and real estate services. The potential of utilisation of real estate services within the renewable energy sector has been little studied, hence, this thesis creates novel research in the intersection of the two areas by highlighting the importance of service providers within the renewable energy industry and evaluating the similarities and differences required from service providers in real estate and renewable energy. Furthermore, the combination of the two industries is studied from the perspective of strategic decision-making giving the research concrete purpose and an area of application. In addition to providing concrete suggestions for practitioners working within the industries, it also provides a foundation for future research in this area. Next, more specific theoretical implications are discussed, firstly from a market development perspective reflecting on the first research question and secondly from a decision-making perspective reflecting on the second research question.

### **5.2.1 Implications for market development research**

This thesis creates novel research by compiling renewable energy lifecycle-related research with transaction-related information. Literature on the lifecycle of a renewable energy asset and the parties involved in it exists in various sources (Ministry of the Environment, 2024a; FWPA, 2024b). However, transaction patterns and parties taking part in the transactions have been studied little, nor have they been combined with the process lifecycle. The process visualisation created in this thesis and presented in Figure 5 gives a foundation for future research. Furthermore, this thesis advances understanding related to renewable energy asset transactions. The thesis identifies theory related to how transactions are performed, and which transaction practices different market operators prefer.

Secondly, this thesis complements existing research on external factors affecting a company planning expansion to a new sector. The findings of the

thesis support the existing observations related to the significance of the legislative and regulatory environment (Dhir and Dhir, 2015; Issa et al., 2010; Pan et al., 2019). As existing literature, this study too emphasises the significance of understanding the effect legislation can have on an industry. This study shows that currently, the renewable energy industry is not as dependent on regulation as it has previously been, but industry operators understand that if regulation were to change, the effects would be significant. Similarly, this thesis highlights the importance of macroeconomic factors in line with existing literature (Issa et al., 2010; Pan et al., 2019; Porter, 2008). The macroeconomic environment has a significant impact on the development of the renewable energy industry—even more so than regulation.

The market operator trends identified in this research support the observations made by Darmani et al. (2014) concerning the motivation of renewable energy industry operators. Darmani et al. (2014) identify that in addition to regulatory pressure, the renewable energy industry is growing because market operators identify a business opportunity within the market. The results of this study highlight similar motives, and interviewees state that having a solid business model is important to be able to function in the industry—this is something that interviewees strongly feel they have. Furthermore, industry growth can be justified by the operators' motivation to contribute to a more sustainable society, as identified too by Darmani et al. (2014).

### **5.2.2 Implications for strategic decision-making research**

The study supports existing observations related to company decision-making (Chandler et al., 1994; Lichtenthaler, 2005; Schuh et al., 2013). Existing research highlights that making strategically aligned decisions is important for a company's success, and deciding whether a new market opportunity is attractive, requires studying external, market-related as well as internal, capability-related factors. These two pillars were consistently highlighted during this research process and arose in interviews when discussing factors related to market entry by real estate service providers. This discovery amplifies the existing theory and confirms its validity in the real estate services industry too.

In addition to complementing existing literature, this thesis also introduces a novel perspective to it. This study not only utilises an external vs. internal split already presented in existing research but separates contributing factors also based on the effect, either encouraging or discouraging, they have. Utilising such a framework when studying the attractiveness of an opportunity can support a more nuanced understanding of the dynamic between external and internal factors. This novel approach not only enhances theoretical

frameworks but also offers practical tools for practitioners looking to optimise their strategic decision-making.

Furthermore, this thesis supports previous observations regarding PSFs. This study complements the observation of Morris and Empson (1998) according to which, a service company's most critical skills lie in individualised relationships with existing and possible clients. These were themes highlighted in the interviews and set as priorities by clients utilising the services of transaction advisors—regardless of the sector in question. Finally, the study likewise supports Rao et al. (2001) observation of the importance of service providers' reputations. The research highlights that to gain a solid position in the market, real estate service providers must put effort into gathering a network of possible renewable energy clients. On the other hand, if the service provider is already familiar to some investors, this can make market entry easier—furthermore highlighting the importance of being a valued operator in the market.

### **5.3 Practical implications**

The study includes implications for practitioners working or planning to work at the intersection of the renewable energy industry and real estate services, especially within transaction advisory. The thesis provides a comprehensive overview of the state of the renewable energy market in Finland and introduces market trends highlighted by market practitioners interviewed for the thesis. By viewing the results of this thesis, one can create a solid understanding of the market and factors affecting its future development—and gain support for working in the intersection of the two industries.

Furthermore, more specific practical implications can be identified. This study identifies a clear need for transaction advisors in the renewable energy industry in Finland now and in the future. The identified market trends seem to grow the demand for transaction advisors in the future too, indicating that the renewable energy industry could be a lucrative sector to work in. Though the findings of this thesis offer encouragement for real estate transaction advisors to consider diversifying into a new sector, this thesis should be utilised as a tool in the consideration process rather than as a direct answer.

Particularly, practitioners should actively follow and stay informed about policies and regulations linked to renewable energy development in Finland, such as subsidy policies, the eastern Finland issue, and the legislative development related to offshore wind power. Keeping aware of the development will support advisors in understanding how the market will continue to develop in the future and how much demand for their services can be expected. Additionally, understanding market dynamics will assist in transaction

advisors recognising client needs better. Understanding market and client needs can alleviate risks related to diversifying into a new sector.

Prior to deeming the sector attractive for themselves, practitioners must identify ways to fill any potential gaps in their capabilities and resources. This study suggests that though real estate service providers tend to have most of the required skills needed for functioning in the renewables sector, a technical understanding of renewable energy assets as well as an understanding of the investor network must be developed to be successful in the sector. Gaining these new capabilities and resources can require, for example, targeted recruitment of renewable energy industry professionals or educating employees.

Furthermore, building new investor networks and gathering data related to the new sector are important means to successfully be able to advise in the new sector. This study shows that many of the investors within the renewable energy sector also take part in the traditional real estate market, hence, they might already be familiar with the transaction advisors. However, renewable energy-specific developers and investors also exist, and transaction advisors should actively aim to build connections with new operators, as this is one of the key skills clients appreciate. Additionally, gathering market-specific data can be useful to gain a deeper understanding of the market. However, it should be understood that not all skills and resources can be acquired beforehand, and some will be gained only through experience in the industry.

Finally, transaction advisors should find innovative ways to utilise their existing skills in the new sector. Many of the skills that renewable energy sector clients appreciate are the same as the ones that the service providers already hold, such as transaction process understanding, client communication skills and economic understanding. Finding ways to adapt their current skill set and leverage existing capabilities in a new market can allow a smoother sector entry.

Despite this study being aimed primarily at real estate transaction advisors, the findings of this thesis can also apply to other real estate service providers offering strategic and managerial services such as valuation, financing and strategic consulting services. Understanding the current state of the renewable energy market, its expected future development and factors affecting its development can be beneficial for practitioners working within these service areas too. Especially, the identified market factors remain true for other service providers too. Each service provider should, however, reflect the internal factors from the perspective of their own service.

## 5.4 Limitations and future studies

As all research, this study too has its limitations. However, these limitations offer intriguing opportunities for future research. The first challenge of this study arises from the exploratory nature of the research and the limited pool of interviewees. As per the nature of exploratory research, new information on the studied area was gained during the research process. At the beginning of the research process, when deciding on which parties to interview, assumptions had to be made about who might be able to offer relevant information related to the topic. Though all transpired interviews were essential and beneficial, the pool of interviewees could have been even broader. Interviewees also provided insights into interesting parties that could have been interviewed. For example, smaller companies newer to the industry or companies not utilising transaction advisory services, such as industrial companies were underrepresented within the interviewee pool. In the future, a broader set of interviewees with more versatile roles within the renewable energy industry could be included to achieve a more diverse understanding of the topic.

The somewhat limited reach of the study is likewise reflected in the qualitative nature of the research. Although, given the resource constraints set for this thesis, a qualitative interview study was identified as best for creating a general understanding of the Finnish renewable energy market and a transaction advisor's role within it, the study could have benefited from a quantitative component. For instance, a quantitative analysis could have further clarified the share of transpired transactions utilising a transaction advisor. However, such data is challenging to access and gather, and due to limited resources, this aspect had to be excluded from this research. Future studies could incorporate quantitative methods to further enhance the existing knowledge in this area.

The study focuses on the perspective of transaction advisors. Though several aspects of the study can apply to other service providers too, as described in section 5.3 Practical implications, the internal skills of each service provider category should be studied separately prior to making decisions of market entry. Performing a broader study with various real estate service providers could offer new interesting insights and would allow utilising the information in a broader context.

Furthermore, it should be noted that this research is focused on a single time and place. The interviews were conducted during a limited timeframe and interviewees were asked to describe their understanding of the topic as of now. Thus, this study provides only a cross-sectional glimpse of the topic. Additionally, the study was limited to a single geographical area, Finland.

Future researchers could consider a longitudinal study to further understand how interviewees' impressions and opinions evolve over time and across different geographical regions. Expanding the geographical scope to include comparisons with other countries could provide valuable insights into how different regulatory, economic, and cultural contexts influence the role of transaction advisors in the renewable energy market.

Lastly, the rapid technological advancements and policy changes in the renewable energy sector must be recognised. Given the industry's rapid rate of development, continuous research is necessary to keep findings relevant and up to date. Continuous monitoring of market developments, regulatory changes, and technological advancements will ensure that the insights derived from this study remain applicable and beneficial to stakeholders in the Finnish renewable energy industry. By addressing these limitations and pursuing the suggested future research directions, a more comprehensive and nuanced understanding of the role of transaction advisors in the renewable energy industry can be achieved.

## 6 Conclusions

The world's renewable energy capacity is rapidly expanding, driven by global efforts to reduce carbon emissions. Significant investments in the renewable energy industry are planned also in Finland. These investments are expected to materialise through the construction of power plants and energy storing assets and transactions done with them, creating new business opportunities similar to those in the real estate sector for third-party operators. For example, transaction advisors could have an important role in connecting asset buyers and sellers and allowing renewable energy investments to take place more smoothly.

The aim of this thesis was to study the intersection of the renewable energy industry and real estate services, and support service providers in understanding whether the renewable energy industry could be an attractive market area for them to expand to. More specifically the thesis aimed to answer the questions *1. How are the ownership and transactions of renewable energy assets organised today, and what changes are anticipated in the future?* and *2. What is the current state of factors affecting the strategic decision-making of real estate service providers looking to expand to the renewable energy sector?* The research included a theoretical and an empirical part. The empirical part of the research was performed as a qualitative interview study, with a total of 12 interviews analysed utilising the Gioia method.

This thesis found that the renewable energy assets' ownership and transaction patterns vary based on the operator's strategy, internal motivations and capabilities. Operators using the produced energy tend to engage in fewer transactions, while developers and pure investors are more active in buying and selling assets. Transaction advisors are already now valued and utilised throughout asset lifecycles—though developers often tend to attempt finding buyers through direct 1-to-1 discussions first. As the renewable energy market continues growing, the investor pool will become more diverse and international creating more demand for an official tendering process led by a transaction advisor. However, the extent to which the market will develop is dependent on electricity consumption, economic conditions and regulatory environment. Following the development of these factors will assist in understanding how the market will grow in the future.

When deliberating whether to expand to the renewable energy sector, real estate service providers are affected by external and internal factors, which can either have encouraging or discouraging implications on their decision-making. From an external perspective, this thesis found that there is a clear demand for service providers among possible clients and the demand can be expected to grow as the market develops further. However, the extent of the



market growth is dependent on various factors, which creates uncertainty in the market. From an internal capability point of view, real estate service providers have the potential to expand into the renewable energy sector as the competence expectations in traditional real estate and renewable energy sectors are similar. Interviews highlighted that in both sectors clients value particularly the service providers' economic and process understanding. However, gaining sector-specific knowledge, a technical understanding of renewable energy market details and building a sector-specific investor network is crucial for a successful expansion. Service providers should be prepared to invest in gaining and developing these capabilities, for example through internal education, recruitment and by organising networking events.

This thesis creates novel research in the intersection of renewable energy, real estate services and strategic management literature. The study supports existing research related to strategic decision-making by highlighting the importance of the external environment and internal capabilities in decision-making. In addition, the thesis creates a novel aspect to strategic decision-making by splitting factors into ones encouraging and discouraging the decision. The practical implications of this thesis support transaction advisors working in the real estate sector in assessing whether to expand services to the renewable energy sector. This thesis introduces factors that advisors considering diversifying into the new sector should take into account and elaborates on the current state or status of these factors in the Finnish market. Rather than utilising the results of this research as a direct answer to whether to expand to the renewable energy sector, this thesis can be used as an introduction to the topic and as a tool to support decision-making.

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## A. Interview guide

1. Formalities and introduction
  - a. Use of data and permission to record
  - b. Purpose of the study
  - c. Informant introduction
2. Experiences in the market
  - a. What does your company do? Please describe your company's strategy/plan regarding renewable energy assets.
  - b. Please describe the lifecycle of a project/investment from your company's perspective
    - i. What stages does it involve?
    - ii. How are new projects/investments found?
    - iii. What stakeholders are involved during the project/investment?
    - iv. What happens at the end of the project/investment?
    - v. Do you utilise transaction advisors when selling/investing in renewable energy assets?
  - c. Please describe the competitive environment.
  - d. Discussion on the possible use of transaction advisors and their value
3. Market development
  - a. Why do you see the renewable energy market as a potential market to work in?
  - b. What would make the market more lucrative to function in from your point of view?
  - c. What would make the market less lucrative to function in from your point of view?
  - d. How do expect the market to develop by 2030?
  - e. What factors drive the development?
4. Wrap up
  - a. Is there something you would like to highlight, that we have yet not discussed?
  - b. Permission for possible follow-up questions

## **B. Interview guide**

1. Formalities and introduction
  - a. Use of data and permission to record
  - b. Purpose of the study
  - c. Informant introduction
2. Experiences in the market
  - a. Who are typical clients?
  - b. What are the needs of clients?
  - c. How do energy sector projects differ from traditional real estate projects?
  - d. What specific services or expertise do you believe real estate service providers can offer to clients in the renewable energy sector?
3. Market development
  - a. Why do you see the renewable energy market as a potential market to work in?
  - b. What would make the market more lucrative to function in from your point of view?
  - c. What would make the market less lucrative to function in from your point of view?
  - d. How do expect the market to develop by 2030?
  - e. What factors drive the development?
4. Wrap up
  - a. Is there something you would like to highlight, that we have yet not discussed?
  - b. Permission for possible follow-up questions