# Empowering sustainability through partnerships

**Exploring how TSOs in the offshore energy sector can enable achieving sustainable goals**

TU Delft

ARATIS
experts ahead

**Empowering sustainability through Partnerships**

*Exploring how TSOs in the offshore energy sector can enable achieving sustainable goals*

In partial fulfilment of the requirements for the degree of

**Master of Science** in **Construction Management and Engineering**

**at Delft University of Technology**

In collaboration with **Aratis B.V.**

**Selma Delila van de Werke**

**4551818**

## Author

Selma Delila van de Werke

MSc. Construction Management and Engineering

## University

Delft University of Technology

Faculty of Civil Engineering and Geosciences

## Graduation committee

Chair: Dr. D.F.J. (Daan) Schraven, Integral Design Management

1st supervisor: Dr.ir. A. (Ad) Straub, Design & Construction Management

2nd supervisor: Ir. L.P.I.M. (Leon) Hombergen, Integral Design Management

Company supervisors: Ir. M. (Magchiel) van Os, Aratis B.V.

& Ir. M. (Menno) Wouda, Aratis B.V.

## Graduation company

Aratis Groep B.V.

The Netherlands



# Preface

In front of you is the master's thesis '*Empowering sustainability through Partnerships. Exploring how TSOs in the offshore energy sector can enable achieving sustainable goals*'. This thesis was written to fulfil the graduation requirements of the Construction Management and Engineering programme at Delft University of Technology. I have been researching and writing my thesis from September 2023 to June 2024.

"It will save the world", that is how the subject of partnering with sustainable objectives was introduced to me at Aratis. At that moment I couldn't exactly realise how that could be true, it seemed like a very big statement. But while working on the subject, it became more and more clear to me. The changes that the building industry are undergoing, should be undergoing, to become more sustainable and work towards achieving the Sustainable Development Goals of the UN are inspiring. The case study for this thesis, the 2GW program of TenneT and partners, is a wonderful example of how sustainability can really become part of the driver behind a program. The image on the front page relates to this and symbolises how these long-term close collaborations that prioritise sustainable goals can, in a manner of speaking, be a lifebuoy for the building industry, the climate and human life on earth.

Gratitude goes to the thesis committee for their continuous support and for the honest and constructive feedback that raised the quality of this paper. I also thank Aratis and its employees, a company where I could always go to study, be involved in employees' projects and meet some really lovely people. Furthermore, thanks also to friends and family for all the support during this final stage of my study.

I would also like to thank you, my reader: I hope you enjoy your reading.

**Selma van de Werke**

**Delft, June 2024**

# Executive summary

*Keywords:* partnerships, offshore energy sector, TSO, sustainability, framework agreement, single case study, discourse analysis

It is well known that construction is one of the most polluting sectors in the Netherlands. The nitrogen crisis has led to the suspension of numerous projects on multiple occasions in the past. We are also increasingly faced with scarcity of materials and the effects of climate change. Therefore, it is time for change, a transition towards more sustainability in construction. Sustainability is a very broad concept that can be based on several models. This thesis makes use of the definition of sustainability as described by the United Nations on the basis of 17 Sustainable Development Goals for 2030 and 2050.

In the last two decades, the concept 'partnership' has become increasingly popular in several sectors in construction. Numerous academic papers have emerged that already describe the benefits of this way of collaborating, such as positive effects on project performance, in costs, time and quality. Features of a partnership such as working towards joint ambitions and goals, the possibility of spreading risks and taking space for discussions would make it suitable for achieving sustainability goals. Naturally, a partnership is not always the answer, what is indicated is that it is most effective in complex issues where there is time pressure and the end product is of high value to the client. This thesis looked specifically at the offshore energy sector where the Dutch Transmission System Operator (TSO) is enabling the transition to a more sustainable future by using partnerships. The following main question is central to this: *How should TSOs develop partnerships with contractors to enable achieving sustainable targets?*

The thesis consists of a literature review and an empirical research using a single case study originating from the Dutch TSO TenneT called the 2GW programme. Semi-structured interviews were conducted and followed by a thematic analysis of the transcripts using the programme Atlas.ti. For the discussion, a form of discourse analysis was deployed, specifically the dialectical-relational approach. This methodology helps to uncover the obstacles when initiating a partnership with sustainable goals and identifies underlying power dynamics and social structures. Furthermore, this methodology is crucial for understanding the complexity and challenges that are underlying the information from the interviews conducted with employees.

The results showed that the start-up process of a partnership with sustainable objectives can roughly be distributed into four phases: the initiation phase, the tender phase, the contract phase and the concretisation phase. To agree ambitious goals as a client with potential partners, it is critical that there is enough competition in the market. This is something that is not the case in the offshore energy sector, so other solutions have to be sought. In order to answer the main question of this thesis, the focus was therefore mainly on the drivers for partnerships with sustainable objectives that practitioners in the offshore practice have named and how they think they will be able to achieve them and what barriers or challenges they have encountered or still expect and how they hope to overcome them. The discourse analysis pointed out that the following three themes would be the origin of obstacles that occurred:

- **Fear of the unknown:** Stakeholders in the offshore energy sector are hesitant to adopt sustainable practices due to uncertainty about costs, outcomes, and changes to established and standard procedures.
- **Narrow market with little competition:** The disbalance between supply and demand in the offshore energy sector ensures little competition between potential partners which often results in minimal effort for sustainability. Contractors are simply aware that there is little competition and no need to make the bottom line in

the tender. This behaviour makes it challenging to drive significant changes toward sustainability.

- **Difficulty complying with the partnership approach:** Making the shift from a traditional client-supplier dynamic to a more collaborative partnership model focused on sustainability can be challenging. The internal culture of a company must be adapted and supported by the management of the organisation.

It is recommended to use so-called 'roadmapping' as an addition to the contract. For a sector that is still in transition towards sustainability like this one, this helps to make major goals achievable in 20 years' time and to divide them into concrete steps that need to be taken to get there. Here, creative use can also be made of the Environmental Cost Indicator (ECI), which helps make sustainability transparent and concrete. Other steps that can be taken to enable achieving sustainable goals include making budgets available to enable or test sustainable solutions, creating insight into the supply chain, combining projects of a similar nature in a framework agreement and making use of standardisation without this being at the expense of realising sustainable solutions, organising expert sessions that do not compensate for the distinctive character of partners and binding partners to your organisation for a longer period of time to enable continuous improvement in the area of sustainability and attract new resources.

The broader implications of the research for public clients in the offshore energy sector involve understanding the critical elements for establishing successful sustainable partnerships. Strategic planning, education, and clear communication emerged as universally applicable themes. Organizationally, the research underscores the necessity of a cultural shift towards sustainability, embedding it into core values and operational strategies. From a policy perspective, the study suggests that regulatory frameworks should support and incentivize sustainable practices. Maintaining close contact with policymakers is beneficial, as they can develop new regulations that support your organization and make achieving sustainable goals easier and lead the way to industry-wide change.

This study is based on a limited number of interviews, which limits the possibility of generalisation. As the case study is still in its start-up phase, it is not possible to conclude how effective the steps taken towards sustainability will be. Follow-up research can explore this further. The perspective of the contractor should be examined as well. Another interesting perspective is to compare the offshore energy sector with other sectors (within the building industry).

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## List of abbreviations

| | |
|---|---|
| 2GW | Two gigawatt |
| BSC | Balanced Scorecard |
| CSF | Critical Succes Factors |
| CSR | Corporate Social Responsibility |
| CSRD | Corporate Social Responsibility Directive |
| ECI | Environmental Cost Indicator |
| EIA | Environmental impact assessment |
| ERP | Enterprise Resource Planning |
| FIDIC | Fédération Internationale Des Ingénieurs-Conseils |
| HVDC | High-voltage direct current |
| JV | Joint-Venture |
| KPI | Key performance indicator |
| LCA | Life cycle assessment |
| LCOE | Levelized cost of electricity |
| PPP | Public-private partnership |
| SA | Strategic Alliance |
| SDG | Sustainable development goals |
| SSA | Systematic Sustainability Assessment |
| TBL | Triple Bottom Line |
| TSO | Transmission system operator |
| UN | United Nations |

# 1 Chapter 1 – Introduction and Research Design

## 1.1 Introduction

The world has been able to survive for many centuries without sustainable interventions. Now, on the other hand, primarily development activities such as construction are contributing to climate change and scarcity of materials, making the earth unable to sustain itself as well as other life forms (Tunji-Olayeni et al., 2019). As a result, sustainability issues are becoming increasingly important. Sustainability has many definitions and encompasses a wide range of themes such as climate adaptation, nature adaptive building, energy transition, circularity and social factors like human rights. Tackling several of these themes together increases support and strengthens impact (Hoe Verbind Je Klimaatadaptatie Met Andere Thema's?, n.d.). This thesis focusses on the sustainability issues of climate adaptation, circularity and social factors. Major changes in the climate today are causing noticeable consequences such as heat waves, extreme precipitation and prolonged drought. Construction companies are implementing new techniques to contribute to climate adaptation, such as emitting less $CO_2$ or even working with electrical equipment. In addition, they are increasingly working with sustainable or recycled building materials, which bridges the gap with the theme of circular construction.

The construction industry is stimulated to work on sustainability by the Dutch and European governments, for example through the report "The Netherlands Circular in 2050", which describes that the Dutch government together with private partners wants to achieve 50% less use of primary raw materials such as minerals, fossil fuels and metals by 2030. (Rijksoverheid, 2016). This is in line with the 2016 Paris Climate Agreement and its sustainability development goals, which should be achieved by 2030 (Simons & Nijhof, 2021). To make circular economy and climate adaptation feasible, large polluting sectors such as the construction sector will have to become more energy efficient and use innovative contract forms (Circulair bouwen, n.d.). This in order to use the knowledge from the market and stimulate innovations. In 2024, the CSRD (Corporate Sustainability Reporting directive) legislation will make a debut (Corporate Sustainability Reporting, n.d.). This means for a lot of large-scale organisations that the time to start thinking about sustainability requirements and CSR objectives is now. The CSRD also requires the disclosure of transition plans that contain the actions and financial investment plans of the company, so that the business model and strategy are compatible with the targets of the Paris agreement and the circularity goals of 2050, as has been described earlier (Tillier, 2023). This will likely begin to accelerate developments around sustainability in construction.

One of the ways the construction sector aims to achieve these goals for (public) construction clients and contractors is to work together in partnerships. A partnership is defined by Cheung et al. (2003) as "an attempt to establish a non-adversarial working relationships among project participants through mutual commitment and open communication". In addition, the relationship is based on dedication to common goals, which can for example be in the area of sustainability (Bygballe et al., 2010). It must be said that the word 'partnership' can have different meanings, what definition is used in this thesis will be further explained in the literature section.

Since the construction sector builds infrastructure and public services, which have a major impact on the economy, environment and social stability, it is ideally suited to set sustainability targets (Wang & Ma, 2020). Most studies on partnerships do not yet focus on sustainability, despite its increasing prevalence in practice (Cheng et al., 2018).

For this thesis, a deeper insight is given into the offshore sector in the Netherlands, which is growing rapidly. The first partnership with the objective of achieving sustainability in the offshore energy sector has been formed. The client in these series of projects is

the company TenneT. The Dutch State, represented by the Ministry of Finance, is 100% shareholder of TenneT for both the projects in the Netherlands and Germany, which makes the company comparable to a public construction client.

## 1.2 Problem statement

In the last two decades, partnering in the construction industry has been applied more and more (Bresnen and Marshall (2000); Eriksson (2010)). This also caused more studies to be executed on the subject of partnering. Earlier studies focused on the pre-agreement phase, like motives for collaboration, partner selection and negotiation of the contract (Gomes et al., 2016). Later, studies focused on the post-agreement phase, for instance on cross-cultural understanding and company performance (Gomes et al. (2016); Brouthers and Bamossy (2006); Buckley et al. (2009); Christoffersen (2012); Lee et al. (2013); Luo (2001)). While some research says that partnering and adopting a collaborative way of working can have huge positive effects on project performance, in costs, time and quality (Bresnen and Marshall (2000a); Widén and Úlfarsson (2014)) and increase collaboration, spreading the risks between stakeholders and encourages them to align their goals (Widén & Úlfarsson, 2014), other studies reveal that clients are not always satisfied with the outcome of partnering (Widén & Úlfarsson, 2014). Clients could for instance be less satisfied with the partnership due to false expectations (Gadde & Dubois, 2010).

More recent studies on partnerships focus on public-private partnerships (PPP), among other forms of collaboration. As described earlier, the meaning of the word 'partnership' can differ. For this study the focus lies on the form where a close long-term collaboration is incorporated. The literature describes that partnerships must go beyond the legal contract specifications and trust and understanding are crucial elements (Spraul & Thaler, 2019). Furthermore, success factors for good collaboration in combination with sustainability are strategy, planning, risk management and negotiation (Pinz et al., 2017). Research is done mostly in the field of social sustainability, for example in the health care sector (Wang & Ma, 2020). According to research by Hueskes et al. (2017) it remains unknown how public procurers currently deal with sustainability when working with partnerships and how sustainable considerations can be stimulated.

The application of partnerships in the construction industry is already well established in a number of sub sectors. This can be seen, for example, in Dutch housing associations that use strategic partnerships for the sustainable renovation of houses (Straub & Meijer, 2022). In the offshore sector, partnering is also increasingly common, but the question is always whether it is about a strategic collaboration or a truly close form of cooperation (PPP compared to partnership). In the field of offshore, recent literature is missing. While there is literature available about how the use of partnerships can help sustainable development and contribute to the sustainable development goals of the UN like how the construction of wind farms contributes to SDG 7 (clean energy) (Castelblanco & Guevara, 2022), sustainable construction as an objective for the partnership is less written about. The practical problem that will be investigated here focuses on the establishment of partnerships in the offshore energy sector , the way in which sustainability can be included in the negotiations and how this can be combined with the cooperation agreement: the framework agreement. What steps does a client company need to take when establishing a partnership with sustainable goals and what challenges can be identified?

## 1.3 Research Gap

Knowledge that is missing within the subject of partnering with sustainable objectives while working with a framework agreement is primarily focused on how such a partnership could be set up since current ongoing projects seem to be the first of its kind in this sector. Acquiring knowledge on effectively establishing partnerships with sustainable objectives and understanding how partners intend to contribute to these objectives will provide valuable insights into the initial stages of such partnerships in the offshore sector. This will enable the formulation of informed recommendations for Transmission System Operators (TSOs), leveraging the insights gained to capture the essence of sustainable partnerships within this specific sector of the construction industry. This way, an advise can be given to organisations that want to deploy partnerships to accelerate the achievement of sustainable objectives.

## 1.4 Research Objective

The problem statement describes how knowledge is missing about the understanding of how a partnership with sustainable objectives in the offshore energy sector is set up for success and how it can be employed to enable sustainable objectives. The objective is split into three parts. The first part is to define a clear definition of what a partnership in the construction industry is in the light of this thesis, since there are multiple definitions in practice. Also, the definition of a partnership with sustainable objectives must be clarified. Second, the available knowledge about partnerships with sustainable goals is sought, collected and interpreted. Lastly, it will be identified how partnerships can be deployed to enable achieving sustainable objectives.

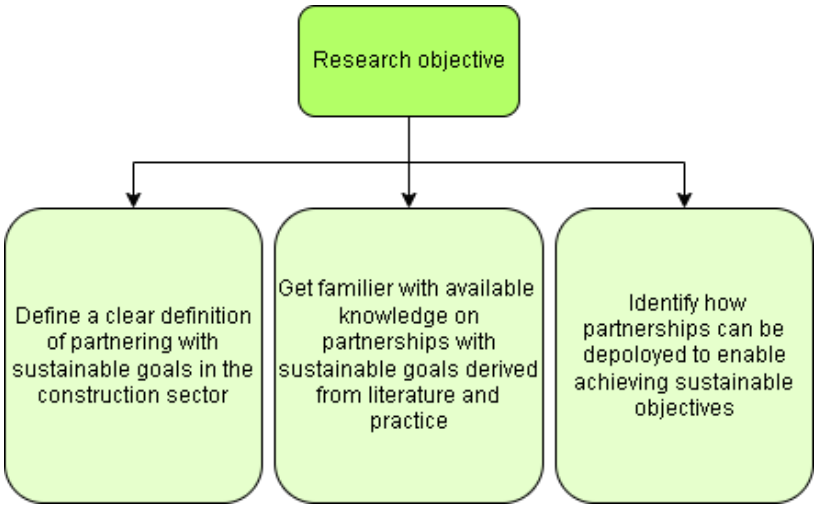


*Figure 1 Research objectives (own work)*

## 1.5 Research Questions

This thesis contributes to the current debate on partnerships by investigating what a partnership in the construction industry entails, how feasible they are in the specific industry of the offshore energy sector and how partnering can be encouraged. The focus lies on the formation process of partnerships with sustainable objectives.

The main research question is:

*How should TSOs develop partnerships with contractors to enable achieving sustainable targets?*

To answer this question, the following questions will be answered:

**Research question 1 –** What is the definition of a partnership with sustainable objectives?

**Research question 2 –** How are partnerships with sustainable objectives set up before contract close?

**Research question 3 –** How are partnerships with sustainable objectives set up before contract close in the offshore energy sector practice?

**Research question 4 –** What steps should be taken to start up a partnership prioritizing sustainable objectives and what challenges can be identified?

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First, a precise definition of the term "partnership" must be established. Given the diverse applications of the term in contemporary contexts, it is essential to clarify the specific definition adopted and examined in this thesis. Following this, the thesis investigates the formation phase of partnerships with sustainable objectives. This includes exploring the motivations for forming such partnerships and describing the typical procurement process for construction projects, particularly the awarding of contracts within a framework agreement.

Subsequently, the thesis examines how sustainability criteria are integrated into cooperation agreements. This section addresses how these criteria are reflected in the partnership agreements, the process of forming partnerships with sustainable objectives, and the mechanisms for ensuring a collaborative process during the contract period.

The focus then shifts to actual practices in the offshore energy sector. It investigates the common practices and procedures during the start-up phase of partnerships in this sector, based on a single case study to gather relevant insights.

Finally, the thesis concludes by synthesizing knowledge from both the literature and the practical case study in the offshore energy sector. It identifies general challenges and provides recommendations for Transmission System Operators (TSOs) on developing effective partnerships with contractors to enable achieving sustainable objectives.

## 1.6 Research Scope

The research has a focus on the offshore energy sector, and then specifically the TSO (Transmission System Operator) in the Netherlands and Germany. This sector is known for having relatively little competitors when it comes to contractors that are qualified to build specialized structures at sea. At this moment, public client TenneT and partners are involved in the 2GW program, the first big scale partnership with sustainable objectives in this sector. Aratis is involved in this program as a consultant and has a focus on incorporating sustainability into the framework agreement between TenneT and contractors as sustainability is a core value of the partnership. In **figure 2**, it is shown how the TSO is located within the scope of the construction sector as a whole. Due to the fact that the TSO market has very specific attributes and boundaries, as will be explained later on, the knowledge that can be gained from this thesis will be limited to this sector. More detailed information about TSOs and the specific case study, the 2GW program, can be found in **Chapter 3**.

The decision was made to adopt a focused approach centered exclusively on the perspective of the public client, thereby delineating the scope of the study. This deliberate selection serves to streamline the research objectives and facilitate a more targeted examination of the public client's role in fostering sustainable partnerships within the construction industry. By narrowing the focus to the public client's viewpoint, the study aims to provide a nuanced understanding of their motivations, challenges, and strategies in pursuing sustainable goals through partnerships. This deliberate exclusion of the partners' (contractors and consortia) perspective enables a deeper exploration of the dynamics inherent to the public client's decision-making processes and organizational priorities in the context of sustainability initiatives within the construction sector.

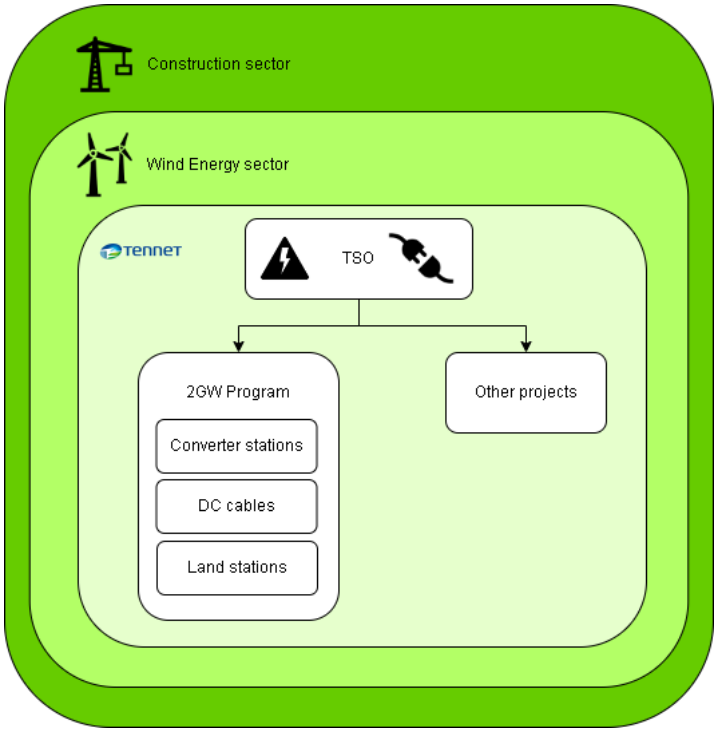



*Figure 2 TSO within the construction industry (own work)*

## 1.7 Research Methodology

**Part 1 – Literature study**

In order to find answers to research questions one and two, a qualitative desk research was conducted. This described what the literature states on the subject of partnerships with sustainable goals. Data collection was conducted through various academic sources, including Google Scholar. A selection of the used keywords are: 'Partnerships construction industry', 'Collaboration forms construction industry', 'Government partner selection process', 'Procurement construction industry', 'Sustainable partnerships'. Furthermore, the snowball method was used with key literature, for example the research of Bresnen & Marshall and Eriksson.

Journals that have been acknowledged are, among others: 'Journal of Business Ethics', 'International Journal of Operations & Production Management', 'Social Science Research Network', 'Journal of the Construction Division and Management', 'Journal of Construction Project Management and Innovation', 'Construction Management and Economics', 'International Journal of Strategic Business Alliances', 'Supply Chain Management', 'Journal of Management in Engineering', 'Sustainable Development'.

Furthermore, a selection of books was selected: 'Trusting the team: Best practice Guide to Partnering in Construction', 'European Public Procurement: Commentary on Directive 2014/24/EU', 'Sustainability through partnerships', 'Towards positive partnering: Revealing the realities in the construction industry', 'Changing the game'.

Finally, some speeches (or documentations of speeches) are investigated: 'Forms of collaboration in civil engineering (CIE5981): The legal aspects' (Lecture notes from guest lecture at TU Delft, 2021), 'Is partnering a state of mind? A comparison of manufacturing and construction' (Workshop on Partnering in Construction, University of Salford, written notes published in 1996).

**Part 2 – Empirical study**

A case study methodology was employed to address research question three, facilitating the comparison of theoretical insights from the literature with practical applications in the offshore energy sector. For this case study, documents provided by TenneT were analyzed, as well as the document: "Conditions for Contract for EPC/Turnkey Contracts." Additionally, participation in a structured course titled "Introduction to FIDIC," conducted by Aratis in 2023, further informed the study. Finally, data was gathered by means of conducting interviews with employees of TenneT. The selection criteria for the interviewees where that these individuals must be either involved in the creation of the partnership, helped with the filling in of the framework agreement and/or the individual contracts and/or is actively involved in the process of implementing sustainability into this partnership. A more elaborated explanation about the methodology for the empirical part of the study can be found in **Chapter 3**.

**Part 3 – Discussion, conclusion and recommendations**

Finally, the study identifies how the knowledge from the literature is applicable to the offshore energy sector and where an addition or change is needed. By following this route, the knowledge gained by interviewing the practitioners in the case study can be applied to advise and motivate like-minded organizations also outside of the TSO market to contribute to the transition to a more sustainable world.

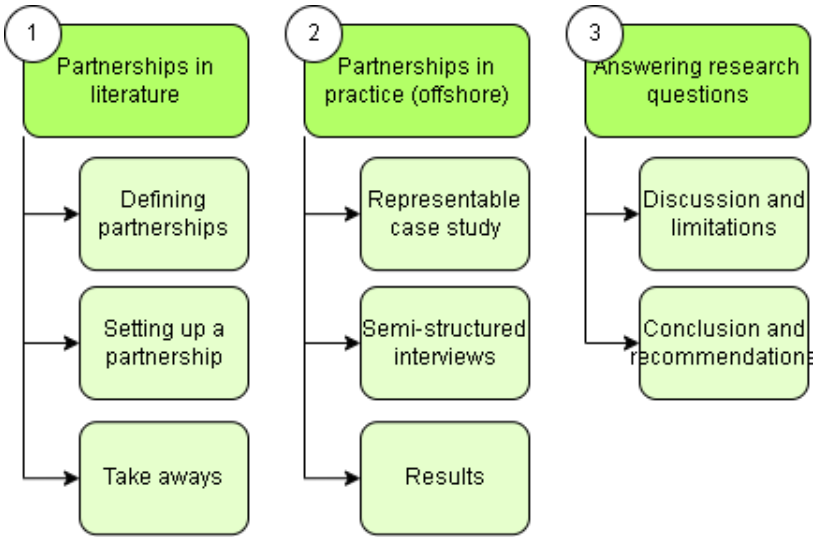



*Figure 3 Methodology (own work)*

## 1.8 Structure of the report

Chapter 1 – Introduction and Research Design

The first chapter offers an introduction to the subject and presents the problem statement. This chapter also delineates the research design, encompassing the identification of the research gap, the research objective, the research questions, the research scope, the research methodology, and the overall structure of the report.

Chapter 2 – Literature review

The second chapter provides a comprehensive review of the literature on partnerships, with a specific focus on their integration with sustainable objectives. The review encompasses scholarly works published between 2000 and 2023. This chapter maintains a broad perspective, examining the general principles of partnership formation while emphasizing the unique considerations and strategies involved in achieving sustainability goals within such collaborations.

Chapter 3 – Research methodology empirical part

This chapter outlines the empirical research methodology utilised in this study, aimed at exploring how Transmission System Operators (TSOs) can develop partnerships with contractors to enable achieving sustainable targets. The research adopts a qualitative approach through a single case study to gain in-depth insights into this phenomenon. The research methodology is presented by elaborating on the following subjects: purpose of the study, type of research, study of a single case study, case criteria, case selection, case description, case relevance and why it is representative for the offshore energy sector, uniqueness of the case, interviewee selection, methods of data collection, analysis of the data and presentation of analysed data.

Chapter 4 – Partnerships and sustainability in practice

Employing an appropriate and unique case study from the offshore energy sector, this chapter shares the most important and salient results related to sub-question 3. During a series of interviews, information was gained about the start-up phase of TenneT and partners' 2GW programme. In writing, Flyvbjerg's ideas on researching a single case study were employed.

Chapter 5 – Discussion

In the fifth chapter, the discussion will delve into an in-depth analysis of the research findings, highlighting how they align with or diverge from existing literature and theoretical frameworks. This chapter will also explore the broader implications of the results, considering their impact on the field of sustainable development within the context of TSO-contractor partnerships. Key insights will be drawn regarding the practical applications and potential policy recommendations stemming from the study. Furthermore, this chapter will critically examine the limitations of the research, addressing any constraints related to methodology, data collection, or scope, and suggesting areas for future research to build upon the findings presented.

Chapter 6 – Conclusion and recommendations

In the final chapter, the research questions will be answered and recommendations will be provided for TenneT, like-minded public clients and for future academic research.

# 2 Chapter 2 – Literature review

This literature chapter provides the reader with theoretical knowledge about partnerships and how they come into being according to literature. The aim is to provide an overview of the start-up phase of a partnership and its definition and this will be the input for the comparison with the practice of the offshore sector in **chapter 4**. The chapter starts with formulating a clear definition of what a partnership in the construction industry is (specifically in combination with sustainable objectives) in **section 2.1**. The chapter continues with the exploration of the different stages one must go through when starting up a partnership with sustainable objectives. This will start with the Initiation phase (**section 2.2.1**) and continues with the Tender phase (**section 2.2.2**), the Contract phase (**section 2.2.3**) and finally the Concretisation phase (**section 2.2.4**). These two subject together will give the reader a clearer view of what partnerships are and how they develop during the first stages of being set up.

## 2.1 Definition of partnership in the construction industry

Up until today, different definitions of partnership exist. This section will explore how this kind of collaboration came into being and evolved through time. The definition and implementation will be discussed, as well as the connection with sustainability.

### 2.1.1 Collaboration and long-term relationships

Collaboration is described by Wilkinson (2005) as a creative process that is undertaken by two or more interested organisations, that share their collective skills and expertise, work in an atmosphere of openness, honesty and trust, to jointly deliver the best solution that meets their common goal. Saunders et al. (2019) add to this that there must be a democratic approach to communication and decision-making present. According to Rahman et al. (2014) collaboration is an essential when it comes to the successfulness of a construction project and a contractual relationship. For some companies, collaboration is a motivation to have access to more resources and allow for knowledge transfer for business enhancements (Ylitalo et al., 2005). Furthermore, collaboration is suitable for nurturing relationships among contracting parties and can therefore lead to better project performance (Ning et al., 2014). Other benefits that are mentioned in the literature are that efficiency can be maximized, profitability can be improved and a more valuable relationship can be formed (Jin & Kim, 2016). In traditional practices, where parties act in self-interest and without an obligation to the other party, these benefits may not be present.

When talking specifically about long-term collaborations, also called strategic collaborations, a long-term commitment is asked of every party involved. In this relationship a series of projects can be delivered over a specific period of time (Filippetti & D'Ippolito, 2016). These kind of relationships are suitable for projects where the complexity of the market is high and the product is of great importance to the client (Meng, 2013). Long-term relationships provide the right incentive for truthful information sharing due to the fact that parties can review the credibility of one another (Cadden et al., 2013). Furthermore, the possibility for the alignment of objectives is one of the benefits of long-term relationships according to Ayegba et al. (2018).

### 2.1.2 The beginning of partnerships in construction (1960-2000)

In the second half of the last century, the interest in new forms of collaboration next to the traditional way of working and contracting in the construction industry were gaining the interest of both scholars and (public) clients. In particular attention was given upon improving the quality of relations between project participants and encouraging feedback between the design and the construction processes. Banwell (1964) and Carruthers et al. (1966) described that partnerships and related forms of collaboration can be seen as a way of dealing with the lack of integration that threatened attempts to improve project performance over the years. As Luck

(1996) described in his research: partnering and integration strategies try to address the problem of the fragmentated industry at that time, that was due to the fact that individuals from different organisations were involved in the construction process while also being geographically dispersed. The government and the industry have tried to find solutions to the problems associated with this fragmentation already since the 1960s. (Ashworth & Harvey, 1993) These ideas were still circulating in the 1990s while at the same time discussions were ongoing about precisely what form partnering could or should take and under what conditions it could develop (Jashapara et al. (1997b); Thompson and Sanders (1998)).

Therefore, it came as no surprise that Bresnen and Marshall (2000a), who delved deeper into the concept of partnering around the 2000s, noted that more in-depth research was needed that examens the nature and feasibility of the partnering approach. The reasoning behind this was based on the fact that empirical evidence on the working of partnerships was largely still anecdotical at that time. They did however already came up with a list of what opportunities the partnering approach can be associated with when implemented in the right way, under the right conditions and for the right kind of projects: increased productivity and reduction of costs, shorter project times due to early supplier involvement and team integration, improved quality through continuous improvement and improved client satisfaction and better responsiveness to changing conditions. As was described in the problem statement, partnerships around this time did not always experience this positive outcomes. The idea was that this could be due to the fact that partnership as a concept was not defined well enough. The term 'partnering' was used often to capture a spirit of cooperation, that could occur on any type of project. This ambiguity leads to the fact that partnering is expressed as an outcome of a collaboration process, making it difficult to distinguish between partnering as a distinctive practice and partnering as a managerial rhetoric. (Hinks et al., 1996) Around this time, the Construction Industry Institute constructed a definition of partnerships:

*"A long term commitment between two or more organisations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant's resources. This requires changing traditional relationships to a shared culture without regard to organisational boundaries. The relationship is based on trust, dedication to common goals, and an understanding of each other's individual expectations and values."* (CII, 1991)

### 2.1.3 Defining partnership in construction (2000-2010)

As a reaction to the discussion in the 90s, Naoum (2003) made the statement that problems with construction performance originate from *"failure of traditional procurement methods"*. A little earlier, Wood et al. (2002) described that working with partnerships would encourage parties to adopt higher ethical standards. Later in 2005, Wood and Ellis even mentioned that partnering was *"the most significant development to date as a means of improving project performance"* (Wood & Ellis, 2005). This way, it became evident that scholars were encouraging the development of new ways of collaboration in the construction industry. However, due to the vagueness around the definition of partnership, some parties entered into an agreement where such an collaboration form was not successful. What Bresnen and Marshall (2000a and 2000b) already noticed in the early 2000s, Nyström (2008) and Anvuur and Kumaraswamy (2007) confirmed as well: there were problems with achieving the desired outcomes of partnering in construction. According to Gadde and Dubois (2010) the main causes that were identified for this problem were that the clients could be unwilling to fully commit to the partnering agreements. Also, stakeholders could fail to develop the right attitude that is required to make the partnering effective.

It was clear that from the perspective of both the client and the contractors that there was a need for a more clear definition of partnerships. Cheung et al. (2003) was the first to do an attempt and described partnership as: *"An attempt to establish a non-adversarial working relationship among project participants through mutual commitment and open communication".* Later, Beach et al. (2005) made this definition more nuanced by making a distinction between strategic partnerships that are intended to last for a longer period of time and included several projects, and project partnerships that are created for the life of a specific project an focuses on the short-term benefits. In 2010, Eriksson (2010) conducted a new, more in-depth, research on the definition of partnerships and concluded what was wrong with the earlier interpretations of partnering:

1. *Partnering is not yet a unified concept such as other forms of procurement, which causes problems with the implementation of partnering.*
2. *Partnering should be implemented in the right situation and for the right reasons. It requires time, investments in resources and a high level cooperation so that the benefits exceed the costs.*
3. *Partnering is not easily implemented, even when people know how to use it.*

(Eriksson, 2010)

According to Eriksson (2010), partnerships should be implemented when there is high complexity, uncertainty and time pressure within a project or series of projects. He also states that the focus should be more on cooperation and less on competition. Case studies from Eriksson (2010) and (2008) showed that mutual understanding of the partnering concept and what can be expected from it is critical. It sets the basis for equality, mutual respect and a joint striving for the project objectives. From a corporate perspective, a strategic partnership should have as its main purpose to change the current market position of the agents involved, moving forward to a strategic position that results in differentiation from other firms (Fontana, 2017).After doing his research, Eriksson also stated the most clear and extensive definition on partnership so far:

*"Partnering is a cooperative governance form that is based on core an optional cooperative procurement procedures to such an extent that cooperation-based coopetition is facilitated. The mandatory core procedures are: bid evaluation on soft parameters (e.g. technical and managerial competence, collaborative ability, earlier experience of the supplier and shared values), compensation form based on open books and usage of the core collaborative tools, start-up workshop, joint objectives, follow-up workshops, and teambuilding and conflict resolution techniques. Optional procedures that can be implemented to a varying extent are: early involvement of contractors in concurrent engineering, limited bid invitation, joint selection and involvement of subcontractors in broad partnering teams, collaborative contractual clauses manifesting relational norms, incentives and bonus opportunities based on group performance, usage of complementary collaborative tools (e.g. partnering questionnaire, facilitator, joint risk management, joint project office, and joint IT tools), and increased focus on contractors' self-control"* (Eriksson, 2010).Page 915

What Eriksson stresses thoughtfully here is the cooperative nature of partnerships. When complexity, customisation, time pressure and uncertainty increase, there is a shift from pure competition to a more cooperative governance form. It is pointed out that certain priorities already apply during the tender phase, such as paying attention to soft parameters and creating joint objectives. In addition, aspects such as early contractor involvement and involvement of subcontractors are also stressed as key. In the contract phase, collaborative contractual clauses are introduced. By naming all these aspects, Eriksson succinctly describes the distinguishing aspects of a partnership compared to other governance forms.

### 2.1.4 Partnerships with sustainable goals

Already in 1987 the Brundtland report stated that governments, businesses, and society should act in favour of sustainable development and protecting the environment (Brundtland, 1987). It was also described that strategic partnerships can play a role in achieving these goals and that firms need a stimulus from the government to undertake cross-sectorial cooperative efforts to redefine their products and services. According to Mackey and Sisodia (2013), leader firms should invest in the production of goods and services that serve a superior purpose at a global level. Therefore, it can be argued that to improve sustainability, it is fundamental to align the firms' main activities with the needs of society (Valbuena-Hernandez & Ortiz-de-Mandojana, 2021). Furthermore, cross-sectorial Partnerships, in which actors of at least two sectors of society (businesses, government, civil society organizations) cooperate to address certain issues, are a critical factor in accelerating progress and achieving objectives related to sustainability (UN Global Compact & Accenture, 2018).

As delineated in the introduction, sustainability encompasses various conceptualizations, with prominent themes including climate adaptation, nature-adaptive building, energy transition, circularity, and social factors. Partnerships with sustainable objectives are characterized by a business strategy that seeks to effect positive change in these domains. This may entail implementing tangible measures to address challenges such as climate change, income disparity, depletion of natural resources, human rights violations, equitable labour conditions, pollution mitigation, racial inequities, and gender disparities (Chladek, 2019). These topics all have a place in the sustainable development goals that are stated by the United Nations. For the envisioning of sustainable goals that will become the key drivers for the partnership the initiator can make use of these 17 interrelated goals stated by the United Nations as a result of global efforts to maintain peace and justice, eliminate hunger, and preserve the environment (*THE 17 GOALS | Sustainable Development*, n.d.).


*Figure 4 Sustainable Development Goals (SDG, n.d.)*

The importance of switching to a partnership with sustainable objectives stems in the first place from environmental factors, as was also explained in the introduction. Reports like the 2016 Paris Climate Agreement but also "The Netherlands Circular in 2050" published by the Dutch government have been an accelerator for the involvement of sustainability in business strategies for businesses and partnerships. Large pollution sectors like the construction industry have to stimulate innovation and adapt to more innovative contract forms like partnerships (*Circulair Bouwen*, n.d.). According to Rafi (2021), taking on sustainable objectives will add brand value and provide lasting competitive advantage, reduce costs and increase efficiency, create new market opportunities, attract highly motivated talents drawn by sustainability and meet customers' demands requesting sustainable products/services.

Critical factors that have to be present when engaging in a partnership where one looks at process elements that go beyond the legal contract specification like engaging in sustainable practices are: fair and open discussions and communication, shared motivation (in the form of mutual trust and understanding and shared commitment) and the capacity for joint action (Emerson et al., 2011). As Bygballe et al. (2010) described, the relationship is also based on dedication to common goals, which in these case are in the area of sustainability. These indicators is evident in partnerships with sustainability ambitions in the form of having discussions on sustainability-related objectives, trust in partners' interest in sustainability, and a mutual understanding of sustainability (Spraul & Thaler, 2019). In constructions like this, both partners may show leadership when it comes to pursuing the sustainable goals. On the public side, governments are bound to the norms and rules they wish to impose on others but should also show exemplary behaviour (Klijn & Koppenjan, 2000). On the private side, companies are expected to show leadership for sustainability by committing to implementing policies that target social sustainability (Commission, 2011). Therefore, private organizations should not only seek to maximize their profits, but should also be aware of their social and environmental responsibilities. For public parties, the latter is even more important as they have to represent the interests of society.

When aiming to form a partnership with sustainable objectives, it is also of importance to look into the procurement of sustainable items in the supply chain. The construction industry can be seen as complex and conservative and can sometimes resist change when confronted with risks that are associated with procurement (E. W. Cheng et al., 2001). Since construction work is usually executed on a temporary site and with temporary partners or organizations, the focus can lie on short term-relationships instead of (strategic) partnerships (Fearne & Fowler, 2006). To give more insight into the procurement of items, Kraljic (1983) developed a bi-dimensional matrix based on strategic impact and supply risk factors, as can be seen in **Figure 5**. When applying this model to the construction industry as was done in a research of Ferreira & Kharlamov (2012), it is becoming evident that most construction items with the biggest investments needed are located in the leverage category. It is observable that (normally) highly polluting materials like construction steel have a low supply risk in combination with high financial gain. Since construction steel is a commonplace material in the offshore energy sector this would lead to the conclusion that this industry has for the biggest part a competitive market, which could mean that for the procurement of sustainable items nearly at all times (cheaper) alternatives are available in this market, making it effortful to pursue sustainable ambitions.

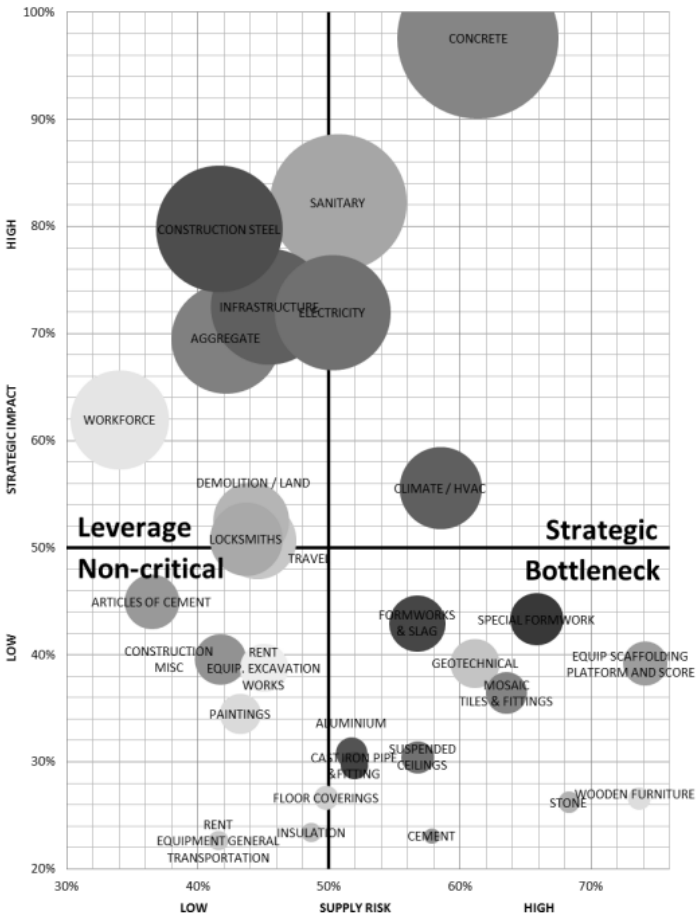



*Figure 5 Kraljic matric for the construction industry, bubble proportional to the amount spent (Ferreira & Kharlamov, 2012 ).*

In order to provide a comprehensive understanding of the dynamics involved in forming partnerships with sustainable goals, it is essential to examine both the driving factors that encourage such collaborations and the barriers that can impede their success. The following tables present an overview of these drivers and barriers. The sources for these tables were identified through an extensive literature review, leveraging literature utilised for this chapter in this thesis and employing the snowball effect to discover additional relevant studies. This approach ensured a thorough collection of information, capturing a wide range of perspectives and insights. The drivers and barriers mentioned are not a literal wording as found in the sources. Considering that these tables were not currently found in the literature but the desire had arisen to acquire this knowledge, a gap in existing knowledge was found and a contribution was made by compiling these tables.

Tabel 1 Drivers/Motivations for sustainable partnering (own work)

| Drivers / Motivations for sustainable partnering | Source |
|---|---|
| **Use knowledge from the market and stimulate innovations** | (Circulair bouwen, n.d.) |
| **Positive effect on project performance (in costs, time and quality) due to continuous improvement and improved client satisfaction and better responsiveness to changing conditions** | (Bresnen and Marshall, 2000a); (Widén and Úlfarsson, 2014) ; (Ning et al., 2014) ; (Wood & Ellis, 2005) |
| **Promote the transition to sustainable construction** | (Hossain et al., 2020) ; (Castelblanco & Guevara, 2022) |

| | |
|---|---|
| **Forming a more valuable relationship due to maximizing efficiency and improving profitability** | (Jin & Kim, 2016) ; (Bresnen and Marshall, 2000a) |
| **Alignment of sustainable objectives among partners** | (Ayegba et al., 2018) |
| **Deal with the lack of integration that threatened attempts to improve project performance over the years** | (Banwell, 1964) ; (Carruthers et al., 1966) ; (Luck, 1996) |
| **Partners adapt to a higher ethical standard** | (Naoum, 2003) |
| **Fair and open discussion and communication, shared motivation and the capacity for joint action** | (Emerson et al., 2011) ; (Bygballe et al., 2010) ; (Spraul & Thaler, 2019) |
| **Improved project design due to high-involvement collaboration with the designing party** | (Gray & Stites, 2013). |
| **Greater transparency and acceptance of plans** | (Gray & Stites, 2013) |
| **Get insight in economic trends, get long-lasting competitive advantage** | (Gray & Stites, 2013) ; (Rafi, 2021) |
| **Improve terms and conditions for all partners** | (Gray & Stites, 2013) |
| **Deal with complexity of environmental and social problems and improve environmental conditions** | (Gray & Stites, 2013) |
| **Improved supply chain coordination** | (Hamza et al., 1999) |
| **Opportunity to share risk for mutual benefit** | (Stanek, 2004) |
| **Entry barriers are raised** | (Stanek, 2004) |
| **Avoids many of the transaction costs associated with managing larger supplier networks** | (Beach et al., 2005) ; (Rafi, 2021) |
| **Attract highly motivated talents drawn by sustainability** | (Rafi, 2021) |

Tabel 2 Barriers/de-motivations for sustainable partnering (own work)

| Barriers / de-motivations for sustainable partnering | Source |
|---|---|
| **Lack of consideration of sustainability criteria in the evaluation of bids** | (Ruparathna & Hewage, 2015) ; (Klumpp et al., 2015) |
| **Higher costs of sustainable building options** | (Shafii et al., 2006) ; (Pitt et al., 2009) ; (Ohiomah & Aigbavboa, 2020) |
| **Lack of case studies / examples, lack of knowledge on sustainable technologies** | (Shafii et al., 2006) ; (Serpell et al., 2013) ; (Ahn et al., 2013) ; (Häkkinen & Belloni, 2011) ; (Klumpp et al., 2015) ; (Glasbergen et al., 2007) |
| **Lack of financial incentives** | (Serpell et al., 2013) ; (Klumpp et al., 2015) |
| **Long pay-back periods from sustainable practices** | (Ahn et al., 2013) |
| **Lack of business case understanding, no understanding of the benefits** | (Pitt et al., 2009) ; (Ohiomah & Aigbavboa, 2020) ; (Glasbergen et al., 2007) |
| **Focussing on sustainability distracts from carrying out primary tasks** | (Klumpp et al., 2015) |
| **Risk of limiting competition / supply base** | (Klumpp et al., 2015) |
| **Sustainable building is too time intensive** | (Klumpp et al., 2015) |
| **Suppliers become more powerful than the buyer** | (Douma & Schreuder, 2013) |
| **Entry barriers are raised** | (Stanek, 2004) |
| **Loss of own identity** | (Glasbergen et al., 2007) |

## 2.2 Starting up a partnership to achieve sustainable goals

Every partnership is unique in its kind due to the differing detailed nature of the problem(s), the institutional environment, political factors, experiences and culture. The initial impetus can be locally driven (bottom-up), policy driven (top-down) or incentive driven (Members of the OECD LEED forum, n.d.). Whatever the reason is to set up a partnership, a set of key factors are always important starting with getting all the relevant actors to join the partnership (**section 2.2.1**). A relevant partner is an organization/institution that is either part of the problem to be addressed or part of the solution (Members of the OECD LEED forum, n.d.). The second key factor is to get formal commitment by signing a contract. How this is done will be explained in the Tender Phase (**section 2.2.2**) and the Contract Phase (**section 2.2.3**). Finally, when specific contracts are awarded to the partners, the award criteria (in this case with the focus on sustainability) come to play a significant role in the Concretisation Phase (**section 2.2.4**).

### 2.2.1 Initiation phase

When still in the initiation phase, one could start determining what sustainable goals one wants to achieve with the execution of the partnership. This way, one can already think about the requirements and award criteria that are going to be employed in the tender phase. When in the contract phase, these ideas must be shared with the partners and elaborated upon until an agreement is reached. To start the thinking process, one could start with making an EIA (which is also mandatory in many cases) and taking a look at the sustainable development goals.

As was described earlier in **chapter 2.1.4**, sustainable goals can be determined by making use of the Sustainable Development Goals as stated by the United Nations. These goals are incorporated in the 2030 Agenda for Sustainable Development that was adopted by all United Nations Member States in 2015. According to the SDG Progress Report of 2023, the impacts of the climate crisis, the war in Ukraine, a weak global economy, and the lingering effects of the COVID-19 pandemic have revealed weaknesses and hindered progress towards the Goals (United Nations Statistics Division, n.d.). Literature studies have varying opinions about what Goals are most important for the construction sector, but as Ogunmakinde et al. (2022) indicated in his research: SDG3 (good health and wellbeing), SDG6 (Clean water and sanitation), SDG7 (Affordable and clean energy), SDG8 (Decent work and economic growth), SDG9 (Industry, innovation and infrastructure), SDG11 (Sustainable cities and communities), SDG12 (Responsible consumption and production), SDG13 (climate action), SDG15 (Life on land) are named most frequently.

### 2.2.2 Tender phase

When the initiator, the governmental body or public client, has passed the EIA procedure and has set clear goals when it comes to sustainable objectives that they want to achieve when working in a partnership on the projects the tender phase can be initiated. This phase consists of three parts: the publication phase, the selection phase and the award phase. In the following paragraphs this process is explained with a focus on sustainable practices.

#### *2.2.2.1 Publication and selection phase*

An organization must put a contract out to European tender if it is a contracting authority within the meaning of the Procurement Act of 2012. Furthermore, the worth of the procured project must be above the European threshold. For works contracts, this threshold is at €5,382,000 (*Drempelbedragen Europees Aanbesteden*, n.d.). When the worth is below this threshold, the organization must put out a contract for National tender. A contracting authority is, among others, the government (the State, the province, a municipality or a water board), as well as public-law institutions (NL: publiekrechtelijke instelling).

In general, the procurement process consists of three phases: the publication phase, the selection phase, and the award phase. During the publication phase, the contract notice is released, and the specifications and requirements are published (Bruggeman, 2021). Additionally, information rounds are conducted, typically in a public setting. It is essential to clarify the award criteria, specifying whether it is based on 'Economically Most Advantageous Tender' (EMAT) or the 'lowest price.' Contractors and consortia can then submit their offers. In an open procedure, all interested parties are allowed to submit a bid. In a restricted procedure, candidates can enrol, and the contracting authority will select at least three parties to submit a bid based on previously established and published criteria (EU Tender Procedures, n.d.). Following this, the process moves into the second phase: the selection phase. Here, with the criteria set, the selection process takes place.

After the contracting authority inspects all the offers, they decide based on selection criteria (grounds for exclusion and suitability requirements) that where published earlier who will be further assessed in the award phase. This whole process is summarized in **Figure 6**. Tenderers who do not agree with the decision have 15 days bring up complaints regarding the award of the contract. After this 15 days expired, the contracting authority may enter into a contract with the winner (*EU Tender Procedures*, n.d.).


*Figure 6 Phases of procurement (source: Bruggeman, 2021)*

Rules for making criteria for the tender are the following: the criteria must be made and published beforehand, they must be clearly formulated and they cannot be changed after they have been announced. Requirements must be related to the assignment, be objective, and may not be in favour of a specific contractor. There are different kinds of criteria to be distinguished. The first kind of criteria are the Grounds of Exclusion: these are grounds that justify the contractor's exclusion from participating in invitations to tender. Examples of mandatory grounds for exclusion are convictions for money laundering or membership of a criminal organization. A second kind of criteria are the selection criteria. These determine what candidates are selected to submit a tender because they meet the minimum requirements for a specific assignment. The contracting authority also looks at the economic standing and technical competency of the tenderers. The last kind of criteria are the award criteria, these will be discussed in more detail in the following paragraph.

#### *2.2.2.2 Evaluating sustainability in the award phase*

The contracting authority chooses a winner based on the bidder with the lowest price or the most economically advantageous tender. For the latter one, sub-criteria must be formulated, for example: price, environmental qualities, cost-effectiveness, date of delivery, etc. bidders can earn fictional discounts on their bid by complying with the award criteria. When the focus lies specifically on sustainability, the award criteria can involve the sub-criteria mentioned in **Tabel 3**.

Tabel 3 List with sustainable partner criteria (based on: C. Wu et al, 2022)

| Triple Bottom Line | Sub-criteria | References |
|---|---|---|
| **Economic** | Cost | Azadnia et al. (2014), Memari et al. (2019) |
| | Quality | Memari et al. (2019) |
| | Delivery & Service | Azadnia et al. (2014), Memari et al. (2019) |
| | Flexibility | C. Wu et al. (2020) |
| | Capacity of the partner | Azadnia et al. (2014), Gören (2018) |
| | Long-term relationship | Gören (2018), C. Wu et al. (2020) |
| | Lead-time | Gören (2018), Saputro et al. (2020) |
| | Production technology | Gören (2018), C. Wu et al. (2020) |
| **Environmental** | Environmental management system | Gören (2018), Kannan et al. (2013) |
| | Green production | C. Wu et al. (2020) |
| | Green warehousing | C. Wu et al. (2020) |
| | Eco-design | Kannan et al. (2013), C. Wu et al. (2020) |
| | Green transportation | C. Wu et al. (2020) |
| | Green technology | Dai and Blackhurst (2012), C. Wu et al. (2020) |
| | Resource consumption | Gören (2018), C. Wu et al. (2020) |
| **Social** | Human rights | Yawar and Seuring (2015) |
| | Health and Safety at work | Yawar and Seuring (2015), C. Wu et al. (2020) |
| | Supportive activities | Dai and Blackhurst (2012), Memari et al. (2019) |
| | Social influence | C. Wu et al. (2020) |
| | Customer satisfaction | C. Wu et al. (2020), Dai and Blackhurst (2012) |

While the selection criteria indicate the minimum requirements for a bid, the award criteria can make the difference on what contractor will win the bid. Therefore, the evaluation of these criteria is of high importance and must be a transparent process that can be executed in different ways.

One way for evaluating the environmental sustainable sub-criteria in practice is for instance by using the so-called Environmental Cost indicator (ECI). As has become clear from the procurement matrix from Kraljic in **section 2.1.4**, environmental data comes from a scala of different sources as all materials come from suppliers along the supply chain. A way to assess the environmental impact of goods and services is to conduct a Life Cycle Assessment (LCA). However, this method results in different impact categories that are hard to compare. With ECI, the emissions that are generated during the life cycle of products and projects are converted into impact categories such as climate change or toxicities (Hillege, 2024). The emissions are usually measured in $CO_2$-equivalents after which a weighting factor is given in the form a prevention costs (shadow cost). A public client can put the maximum allowed ECI value in the tender as a contract specification. As can be seen in **Figure 7**, contractors can receive a fictional discount on their offer when they offer lower environmental costs. This increases the chance to win the bid.

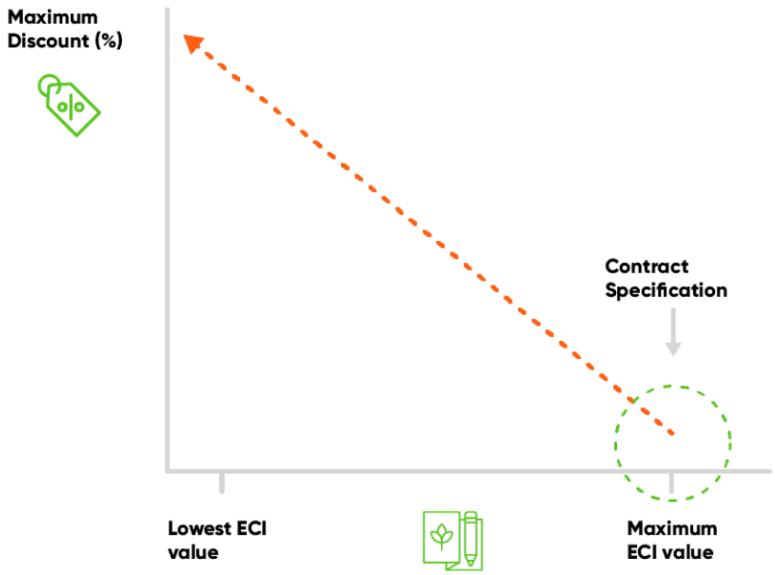



*Figure 7 ECI fictional discount diagram (Hillege, 2024)*

Another way to evaluate emissions is by using the Dutch innovation called '$CO_2$-Prestatieladder' (**Figure 8**). Companies can get a certification based on their position on the ladder. In general, there are five levels on this ladder: Level one to three are given to organizations that have their own supply chain under control, level four and five are given when organizations continue to improve within their sector and try to perform pressure outside of their own chain (*Wat Is De Ladder*, n.d.). To get the certification, organizations must be aware of their $CO_2$-footprint, must work on reduction of this footprint by having ambitions, goals, be transparent about their $CO_2$ policy and participate in initiatives in the sector in the field of $CO_2$-reduction (*Wat Is De Ladder*, n.d.). Based on the level of an organization on the $CO_2$-Prestatieladder, this party can get a fictive discount on the price of a project.

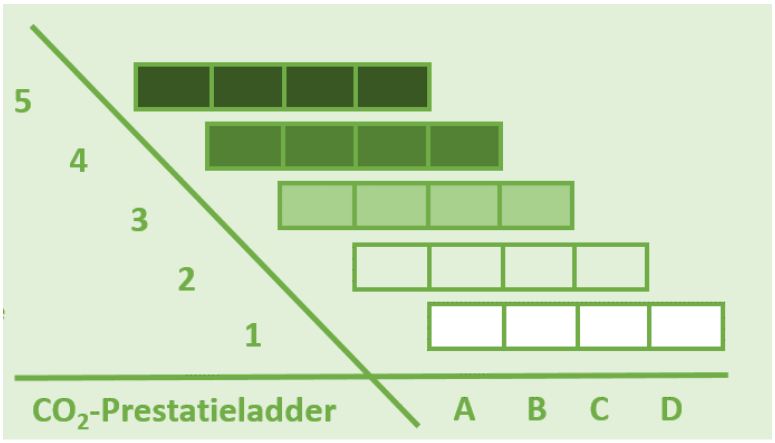



*Figure 8 CO2 prestatieladder. A=Insight, B=Reduction, C=Transparency, D=Participation. (Wat Is De Ladder, n.d.)*

### 2.2.3 Contract phase

When the tender phase is conducted and a potential partner or partners is/are found, they have to come to an official agreement. This agreement usually consists of signing a form of contract for the duration of the collaboration. With partnerships, it is also possible and very well recommended that framework agreements are deployed. Both these topics are elaborated upon in the following paragraphs.

#### *2.2.3.1 Type of contracts*

A contracting authority can decide how much they delegate responsibility to the contractor. They can decide to do everything themselves, put everything out to tender or choose a form somewhere in between (De Ridder, 2009). Depending on how much of the (design) work is put out for tender, the responsibility moves from the employer to the contractor. In the Netherlands, the UAC contract is used for traditional procurement. For integrated contracts, the UAC-IC contract is one of the possibilities. For projects where the responsibility for design and construction are mostly with the contractor EPC/Turnkey contracts can be used (for instance the Silver Book from FIDIC). The sliding scale is represented in **Figure 9**.


*Figure 9 Slider on responsibility (source: Bruggeman, 2021)*

How much one wants to collaborate depends on a number of factors like the complexity of the project, changes that are expected and the duration of the project (De Ridder, 2009). The hard side of collaboration is described in the formal agreement, the contract. The soft side of collaboration is about the informal matters, like dealing with trust. When there is a high degree of collaboration asked, then the project duration is often long, the objectives are highly complex, partners are equal, there is uncertainty about the progress and feasibility of the project, points are difficult to lay down in a contract and changes are to be expected (De Ridder, 2009). When this is the expected for the project(s) that is/are procured, the contracting authority can choose to form a partnership. In this case, the procurement process already takes into account the future cooperation.

While in the traditional model clauses on sustainable factors like human rights are not specifically represented, in more integrated contracts like the Silver Book from FIDIC these matters are present in multiple sub-clauses making it easier to apply when working with a partnership with sustainable objectives. The themes that come to the fore in these sub-clauses in FIDIC yellow and silver book are engagement of staff and labour, rate of wages and conditions of labour, labour laws, facilities for staff and labour, health and safety and disorderly conduct.

#### *2.2.3.2 Framework agreements*

Several studies have described the presence of long-term relationships as the basis for partnerships (Meng (2013); Ambrose et al. (2010); Naoum (2003)). With the application of a framework agreement, collaboration is also a key characteristic and therefore goes well with the application of a partnership. Within a framework agreement, two or more parties enter into a long-term collaborative agreement, where the clients have a long-term programme or work in mind and are looking to set up a process to govern series of projects (Ayegba et al., 2018). The framework contract is a manifestation of agreements that define the fundamental principles upon which companies wish to work together and provide an umbrella contract with whom projects are procured on a call-off basis, which is fundamentally different from traditional contracting (Lam & Gale, 2014). The period of framework contracts is four years, with an additional two extra years in case of exceptional circumstances (Tennant & Fernie, 2010). The same researchers also describe framework agreements as a descendant of the design-and-build procurement form. This is due to characteristics associated with this form of procurement: early contractor involvement and providing the opportunity for integration of design and construction. Gale (2013) stated that the framework contract approach might have evolved from partnering arrangements. Parties will have to assimilate the requirements and practices that support and promote long-term collaboration, to ensure that they will benefit from practices like partnerships and framework agreements.

One of the advantages of working with framework agreements is that it will save procurement costs and the application of extra procedures when multiple projects are procured simultaneously with the same characteristics. Before a government agency or public-law institution can award a contract, they have to comply with the following rules:

- They shall ask all involved contractors to submit a registration on the basis of the quotation request.
- They shall judge all the tenders based on the in the framework agreement established award criteria.
- They shall award the project agreement to the best candidate with the best offer within the framework. This is the contractor who wins the mini-competition with the involved contractors that have submitted a registration for the quotation request.

It is therefore necessary to clarify that the term "all involved contractors" does not permit the request for registration to be made with a select group of contractors or with a single contractor in particular, given that the contractor in question is already bound by the framework agreement. In the case of a framework agreement with multiple contractors, it is not uncommon for not all conditions to be specifically defined at the outset. This is typically addressed in the specific contract agreements. When trying to judge the submitted registrations in a mini-competition, new award conditions can play a role then the conditions that already are established in the framework agreement. This makes it ideal for partnerships with sustainable objectives. Examples of conditions are: the planning, the delivery date and the price. Apart from that, the award conditions which were included in the tender documents of the framework agreement must be applied. It is not allowed to publish deviant award criteria for projects within the framework agreement. However, the award criteria for projects within the framework agreement can be different from the award criteria for the framework agreement itself (*Raamovereenkomsten*, n.d.).

### 2.2.4 Concretisation phase

When an agreement is met, the partnership can be shaped together with the new partners and the individual contracts can be awarded within the framework agreement. To make sure all partners are on the same page when it comes to sustainability, different methods can be applied. A distinction can be made between alignment on organizational level and on program level.

#### *2.2.4.1 Organizational level*

According to Kaats and Opheij (2021) a successful partnership revolves around ambition. Other conditions for a promising collaboration are respecting each other's interests, paying attention to personal relationships, being well organized and designing a joint process. This can be seen in **Figure 10**.

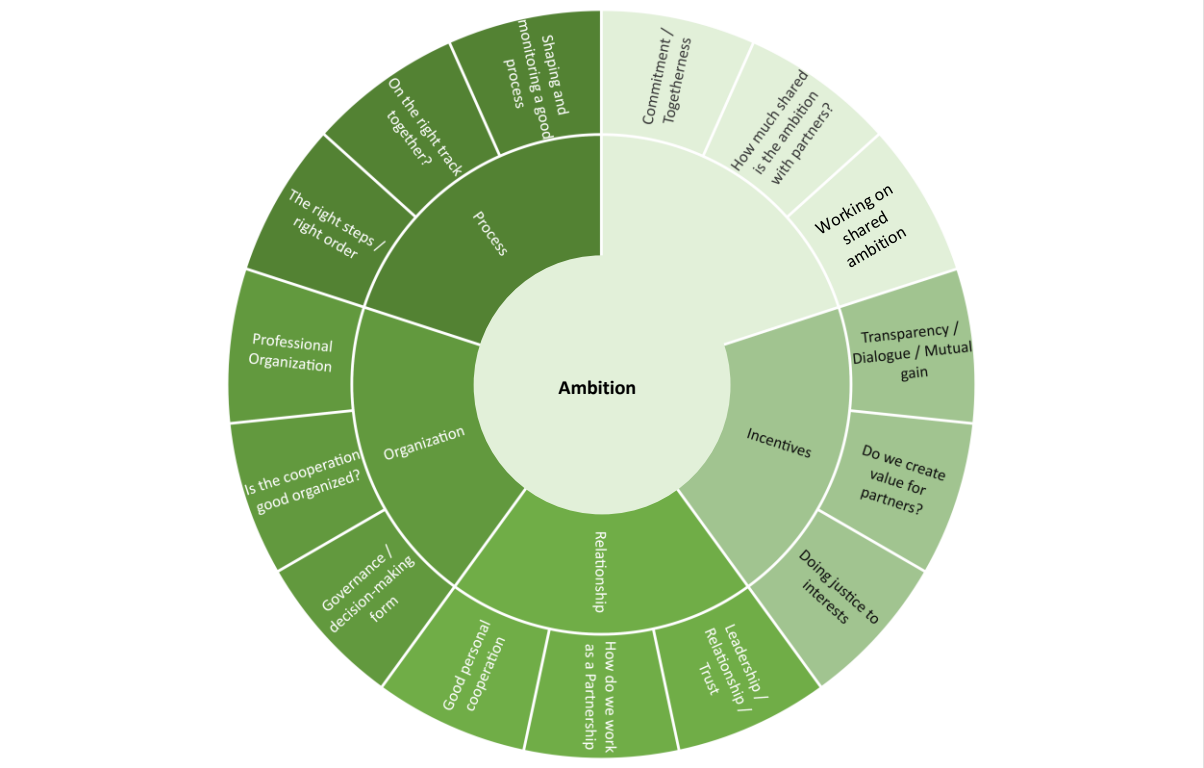



*Figure 10 condition for promising collaboration (Translated from: Kaats and opheij, 2021)*

A shared ambition must inspire and mobilize. It describes opportunities, problems and challenges that the partners can't solve on their own. This shared ambition must match the individual ambitions of all the partners. Therefore, it is important as a partner to fully open up about your desires for the collaboration and be honest about your expectations and about what you are willing to invest in money, time and knowledge to the partnership (Kaats & Opheij, 2021). The shared ambition can be used as the starting point for strategy formation and goal description (Child et al., 2005).

Essential is to respect the interests of all your partners, otherwise it is possible that they will cause an obstruction in the collaboration process. It must be made sure what interests are linked to the core values or the image of the company since these are the ones that are most important to the company. Furthermore, when exchanging views one must look at the interests that are behind those views.

When working on relationships, one can initiate multiple actions like organizing joint meetings, taking time for joint experiences and creating moments to strengthen the personal relationships among colleagues (Kaats & Opheij, 2021).

One must keep in mind that one organizes the collaboration in a way to make sure that the partnership will reach the joint ambitions set in the beginning. The challenge is that of under- or over-organisation, for example a company could literally copy the organisational form that they use within their own company for the partnership which can cause malfunctioning meetings and lack of clarity on control (Kaats & Opheij, 2021). A good, well laid out, form of contract can help in this situation to provide clearance.

Finally, a joint process should be created that can provide clearance in a time when there is limited support. This is extra important in the beginning of the formation of a partnership when the joint ambition is yet unclear and there are still diverse interests. The receivables of the joint process must be monitored and the partners must keep reaching out to each other and communicate.

#### *2.2.4.2 Program level*

Sustainable objectives, or objectives in general, are set for a system, process or action and are linked to the business strategy. Important is that they have to be achievable in a specific time period (Podgórski (2015); Van Looy and Shafagatova (2016)). Usually, the objectives are written down in the form of KPIs (key performance indicators) (Brundage et al. (2017); Žemgulienė and Valukonis (2018)). These need to be realistic and measurable (Kasie & Belay, 2013). The system performance can be measured by identifying the degrees reached in different objectives or the performance in terms of overall objectives (Hlyal et al., 2015). The standard procedure on how to develop an objective is described in **Appendix B**.

During the last decade, organizational performance and sustainable development were measured in different ways, as described in **Tabel 4**. Here, multiple concepts are introduced that have a specific relation with sustainability and can be used for the formation of sustainable objectives during the formation process of the partnership and later when the objectives are evaluated.

Tabel 4 The themes related to organizational performance and sustainable development (Medne and Lapiņa,2019)

| Year | **Themes of Measuring the Organisation's Sustainable Development** |
|---|---|
| 2011 | Corporate Social Responsibility (CSR) indicators that measure internal and external stakeholder expectations |
| 2014 | Using multidimensional indicators to measure sustainable development |
| 2014 | Using Balanced Scorecard (BSC) method for Corporate Social Responsibility indicators. Introducing the environmental dimension in the BSC |
| 2015 | Coloration of sustainability, innovation, and competitiveness at organizational and business level |
| 2015 | Triple bottom line (TBL) (social, environmental and economic) reporting. Comparing and using GRIs and AECA |
| 2017 | Sustainable competitiveness includes several interrelated aspects of the concept of sustainable development |
| 2017 | Sustainability concept of the "Triple P" (planet, people and profit) used in the Systematic Sustainability Assessment (SSA) tool for improving business performance |
| 2018 | The enterprise Resource Planning (ERP) system for sustainable development of the organization |
| 2018 | Defining sustainable Key Performance Indicators with the aim to control sustainability-related issues. Using the best sustainable practices in the business field |
| 2018 | The Life Cycle Sustainability Assessment framework used for measuring the economic dimension of sustainable development |
| 2024 | Corporate Social Responsibility Directive |

- **Corporate social responsibility:** Is described as a self-regulating business model by which companies make an effort to operate in ways that enhance rather than degrade society and the environment (Fernando, 2023). CSR can be broken into the following categories: environmental impact, ethical responsibility and financial responsibilities. As described earlier, some companies use this method to promote a positive brand for themselves, for example after loss of face.
- **Balanced scorecard:** The scorecard can help an organisation by formulating strategic goals and translating those for all the layers of the organisation. In the top of the organisation, the 'topcard' is determined, all departments formulate their own goals that are derived from this topcard. All the aspects of the topcard must be covered when the formulations of the departments are add up together (Gertjanschop, 2023).
- **Triple bottom line:** The overlap of People, Planet and Profit can be seen as the definition of sustainability. More and more companies realise that the application of the triple bottom line doesn't value societal and environmental impact at the expense of financial profitability. Actually, financial benefits can be achieved by committing to sustainable business practices.
- **Systematic sustainability assessment:** Is usually used for supporting decision making and policy development in a broad context. Sustainability is assessed in terms of multidisciplinary aspects, namely: environmental, economic and social. The goal of the assessment is to help decision-makers and policymakers deciding what actions to take when attempting to make society more sustainable (Sala et al., 2015).
- **Enterprise resource planning:** ERP can be used to manage and integrate important parts of a business. This can be done by using software to, for example, track the sustainable development of the organisation (Team, 2023).

## 2.3 Key take aways

**Definition partnership**

The literature describes partnerships as a form of cooperative governance applied in the civil sector, among others. The core procedure consists of bid evaluation on soft parameters, use of collaborative tools and focusing on joint objectives. In a partnership, the focus is more on cooperation and less on competition, which distinguishes it from other forms of procurement. Characteristics of a partnership include early contractor involvement and increased focus on contractors' self-control. Partnering requires time, investment in resources and a high level of cooperation in order for the benefits to exceed the costs. A partnership may be the right choice for a client when the intended programme or project to be executed is both highly complex, requires customisation and the time pressure and uncertainty may increase as time progresses. It is critical that all partners have a mutual understanding of the partnering concept and express their ambitions to each other. This creates a basis for equality, mutual respect and a joint striving for the project objectives. A partnership often aims to change the current market position, for example by creating distinctiveness.

**Definition partnership with sustainable goals**

Several parties indicated early on that partnerships might be a good tool to achieve sustainability goals. Especially now that the pressure on the civil sector is increasing and more and more people expect companies to align their main activities with the needs of society, the question of a matching procurement form is certainly topical. A partnership with sustainable goals has the overarching goal of making a positive impact on sustainability-related themes such as climate adaptation, the energy transition, circularity and addressing societal issues. This can be done primarily by choosing key drivers that align with the United Nations' 17 Sustainable Development Goals. Critical factors that must be present for a partnership with sustainable goals to be successful are fair and open discussions and communication, shared motivation and the capacity for joint action. It is also important for the customer to gain insight into the supply chain and possibly make adjustments in it to benefit the sustainability goals.

**Setting up a partnership with sustainable goals**

- *Initiation phase*
  The expected benefits of partnerships with sustainable goals (or drivers) should exceed the efforts to overcome the challenges (or barriers). Table 1 and Table 2 show what the literature understands by drivers and barriers for this type of partnerships.
- *Tender phase*
  Procurement consists of the publication phase, the selection phase and the award phase. Minimum sustainability requirements are included in the selection criteria, while criteria that enable contractors to distinguish themselves are reflected in the award phase, where the ECI methodology or the $CO_2$ Performance Ladder can be employed to specify how much each party wants to commit to sustainability.
- *Contract phase*
  Partnerships usually involve long-term relationships and are therefore ideally suited to applying framework agreements. In this way, it is also possible to draw up additional award criteria for each subsequent project.
- *Concretisation phase*
  A partnership is a dynamic collaboration in which alignment at the organisational level and programme level must be established repeatedly.

# 3 Chapter 3- Research Methodology Empirical part

In Chapter one, **section 1.7**, the methodology employed for the analysis of the literature was delineated in exhaustive detail. The empirical phase was previously outlined, but will now be elucidated in greater detail in this chapter. The purpose of the study and type of research is explained as well as why was chosen for a single case study. Furthermore, it is explained what the criteria were for selecting this single case study. After that the chosen case is described in more detail. What is also discussed is why this specific case is relevant for this thesis, how it is representable for the offshore energy sector and why the case is unique. Next, the selection criteria for the interviewees are laid down and the method of data collection, the analysis and the presentation are clarified.

## 3.1 Purpose of the study

The purpose of investigating the offshore energy practice is to make a comparison between the literature on partnerships with sustainable objectives and the practice and receive new knowledge on this matter concerning the start-up phase of these kind of partnerships. The third research question is: 'How are partnerships set up before contract close in practice?'. By interviewing employees of the company of the case study that work in different departments, a full picture of the organization and their way of working with sustainability is found. The goal is to analyse this data in accordance with the data from the literature and come to new insights.

## 3.2 Type of research

The research will be exploratory and consists partly of analysing received documents and partly of conducting semi-structured interviews.

## 3.3 Study of a single case study

Research into the working of a strategic governance form like partnerships falls for a substantial part under the category of social science despite of the application of the subject in the offshore energy sector which would at first glance maybe indicate a more physics related scientific research. Compared to physics, 'hard' theory is hard to come by in social science. Therefore, the focus lies more on concrete, context-dependent knowledge instead of searching for predictive theories and universals.

The problem at hand is one in a very specific environment, namely the offshore energy sector, which comes with a particular set of characteristics. This sector is characterized by its high levels of technical complexity, significant financial investments, and stringent regulatory requirements. It operates in challenging physical environments that demand specialised engineering solutions and robust safety protocols. Additionally, the offshore energy sector is influenced by fluctuating market conditions and geopolitical factors, which can impact project timelines and costs. Due to these circumstances it was chosen to apply the single case study method as described by Flyvbjerg (2006). This way, it becomes possible to intensely observe a case from an information-oriented selection and gain an in-depth understanding of complex phenomena within their real-life context.

By investigating a single case study more thoroughly one comes close to the proximity to reality, which will help the learning process and results in more advanced understanding according to Flyvbjerg (2006). Mattingly (1991) (p. 237) also stated that working with narratives in the case study, which can be done by telling the story in all its diversity, do not only give meaningful form to experiences that have already taken place but will also provide a forward glance which will help to anticipate situations later on and allows one to envision alternative futures. These aspects will be particularly useful when trying to answer the main research question because there is specifically asked for advise on how to set up a certain process, namely the development process of partnerships with sustainable objectives by TSOs, in the future.

## 3.4 Case criteria

To select a case for the single case study, there are certain criteria that this case must match in order for it to provide critical information for answering the main research question.

- The case should be part of the work within the TSO offshore department
- Within the case, the aim must be to achieve sustainability objectives
- The case must either be in the contract phase or have already passed this stage
- The client must have the intrinsic motivation to include sustainability in the tender
- Preferably, framework contracts are used in this case, as this is also assumed in much of the found literature on partnerships
- Preferably FIDIC contracts are used in this case, as is common in the offshore energy sector

## 3.5 Case selection

Since the Netherlands only has one TSO and is run by the government owned public client TenneT, the selection of suitable cases was already narrowed down. In contrast to the former programs of TenneT, like the 700MW and 900MW programs, the current national program called the 2GW program fits with the requirements that were set up the former paragraph. The 2GW program is led by the LPO department (Large Projects Offshore, for the explanation of LPO, see **Appendix C**) of the offshore branch of the company and has close connections with the CSR strategy department, the OD (Offshore Development), the AMT (Asset management) and the GFO (Grid Field Operator). The program has recently passed the contract phase, but the building phase has not started yet. As a client in the offshore energy sector, TenneT is one of the first to express their willingness to incorporate and invest in sustainable targets even though they are not forced by the government to do so, which implies an intrinsic motivation. As the amount of projects in the program increased in numbers and more and more similar projects where expected to be executed, it was chosen to work with multiple partners and framework agreements. The type of contracts that are employed in this program are EPC/Turnkey contracts which is expressed in FIDIC contracts (Specifically Silver Book). Therefore the 2GW program checks every box on the checklist for case selection and will be the case that is researched.

Because the 2GW program is one of the first programs in this industry to steer on sustainable goals, the case could be seen as a 'deviant' case within the offshore energy sector. It was chosen to pick a case study that can be identified as 'deviant' in order to obtain information on an unusual case. Deviant cases often reveal more information because they activate more actors and more basic mechanisms in the situation studied (Flyvbjerg, 2006).

## 3.6 Case description

The European commission desires, and thinks it is necessary to, realise between the 230 and 450 GW of offshore wind by 2050 (European Commission, 2018). 85% of the capacity by 2050 is expected to be developed in the North Seas, which will be an equivalent to around 380 GW (Wind Europe, 2019). To be able to reach this total of 450 GW of offshore wind by 2050, the annual installation rates need to increase substantially. To be exact: Europe installs around 7 GW per year in 2020 and will need to rise to over 20 GW after 2030 (Wind Europe, 2019). The Dutch region, NL01, needs to upscale to 60 GW of offshore wind on 12,000 $km^2$, as can be seen in **Figure 11**. With a percentage of 18.7% of total area in the NL01 region being dedicated to offshore wind, the Netherlands has quite a large responsibility when it comes to reaching the goals of the European Commission, as can also be seen in **Figure 12**. It is therefore also said that countries with offshore wind resources have a geographically responsibility to lead Europe in this transition (Wind Europe, 2019).

This whole story illustrates how much pressure there is on both the Netherlands and Germany and it's TSO (TenneT) to realise this amount of 60 GW of offshore wind by 2050. The installation rates need to increase substantially and constructions need to be built in less and less time. This creates a field of tension where it is hard to imagine that there is still room for an issue like sustainability.

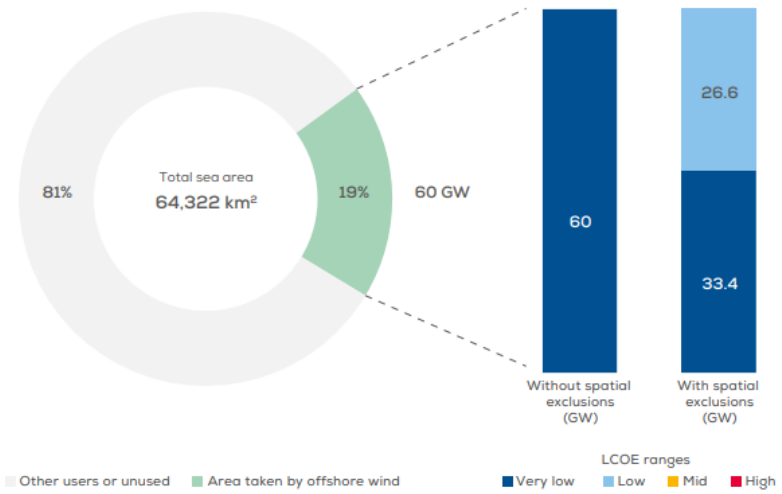



*Figure 11 Distribution of area per sea per LCOE to allocate offshore wind in a scenario without and with spatial exclusion (Wind Europe, 2019).*

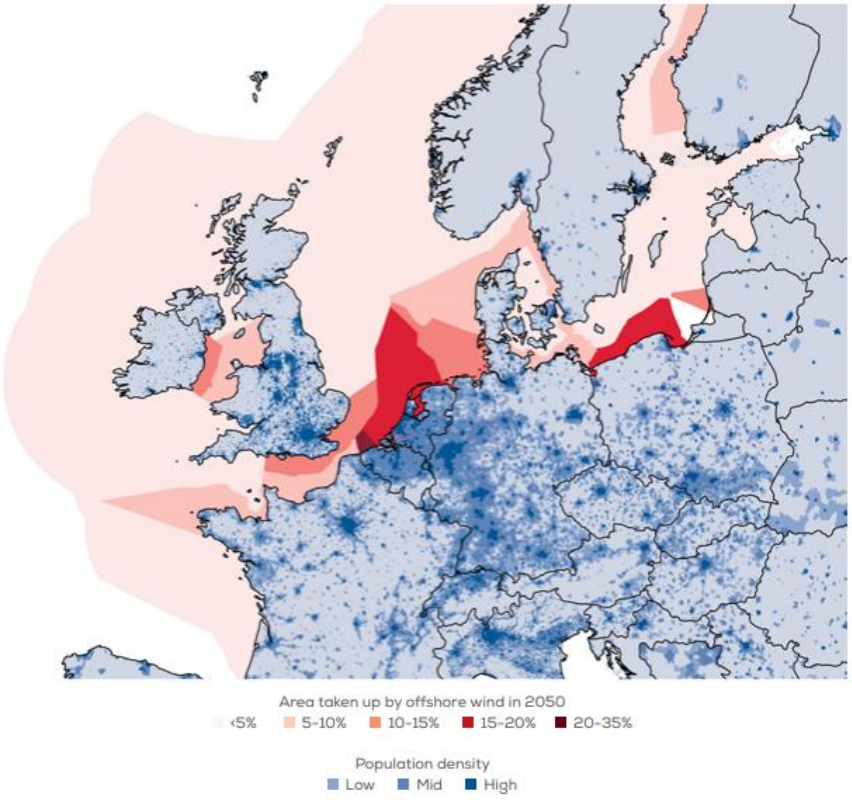



*Figure 12 Location of 380 GW of offshore wind in 2050 by percentage of total sea area (without spatial exclusions), by sub-region (Wind Europe, 2019)*

### 3.6.1 Introduction of the 2GW program

Tennet, as they have been appointed by the Dutch government, started a program in the Netherlands and Germany called the 2GW Program. The program entails the construction of 14 high-voltage direct current (HVDC) offshore grid connection systems with a transmission capacity of 2 gigawatt (GW) in the Dutch and German North Sea by 2031 (Tennet, n.d.). Other projects of the LPO of Tennet are the 700 MW (AC) in the Netherlands and the 900 MW (DC) in Germany. The location of the 2GW Program can be seen in **Figure 13**.


*Figure 13 Locations of the 2GW Program. In the Nederlands: IJmuiden Ver Alpa/Beta/Gamma, Nederwiek 1/2/3, Doordewind 1/2. In Germany: BalWin 3/4, LanWin 1/2/4/5 (Tennet, n.d.)*

The 2GW program consists of three series of projects: the realisation of the 14 converter stations at sea, the 525 kV sea cables and the converter stations on land. The offshore wind farms connect with 66kV sea cables to the converter station. This falls outside of the scope of Tennet and is the responsibility of the wind farms themselves. On land, the energy is transferred to the substation and finally to the high voltage grid (see **Figure 14**). Tennet choose to work with a framework agreement for the large-scale offshore tenders for both the offshore stations and the corresponding HVDC systems and the 525 kV sea cables. Together with key market parties they will team up for respectively 14 and 8 years. Costs of the program will be around €30 billion for the offshore station and HVDC systems and €10 billion for the 525 kV sea cables (Tennet, n.d.).

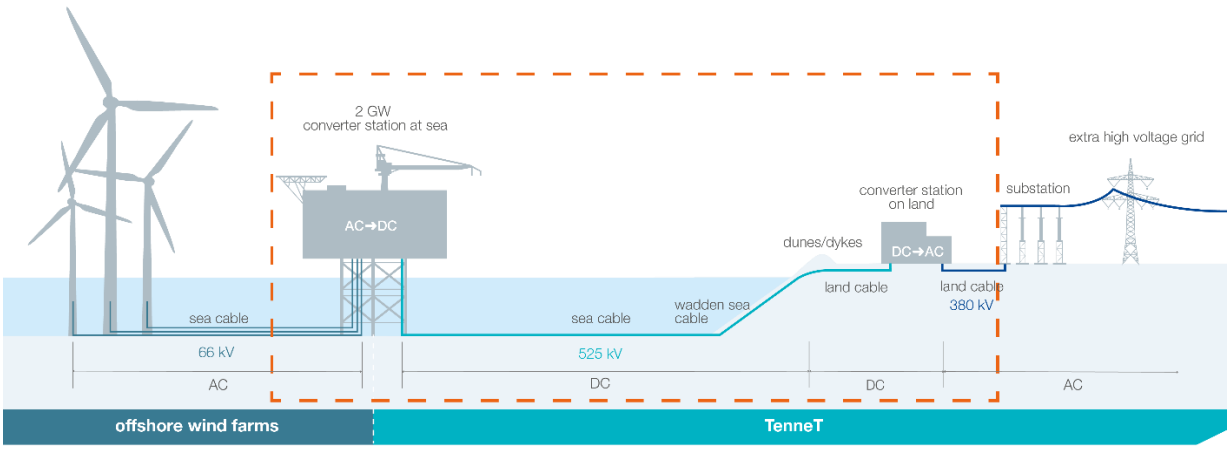



*Figure 14 Overview of the 2GW Program of Tennet (Tennet, n.d.)*

### 3.6.2 Type of contract and scope

Both the frameworks for the converter stations at sea and the DC cables are procured using an European tender and FIDIC contracts, which is more common in the offshore sector due to its international character. The works will be tendered using specifically the silver book. This book is specifically for EPC (Engineer, Procure and Construct) and Turnkey projects. Furthermore the conditions of Contract for EPC/Turnkey Projects may be suitable for projects where (1) a higher degree of certainty of final price and time is required, and (2) the Contractor takes total responsibility for the design and execution of the project, with little involvement of the Employer (*Conditions of Contract for EPC/Turnkey Contracts*, 1999).

For this thesis, the focus will be on the series of projects involving the converter stations at sea and the DC cables since they both use the same type of FIDIC structures when tendering. On top of that, the same market tensions can be identified for both these programs which are typical offshore programs. The building of the land stations is however another type of case since here the market is completely different. While for typical offshore projects the market is very narrow , for onshore projects there are a wide range of contractors available allowing for more competition. Since the market tension of the offshore sector seems to have a significant effect on how sustainability is incorporated into the programs, this is the market that is chosen to investigate further. A summary of the research scope as described above can be seen in the figure below.

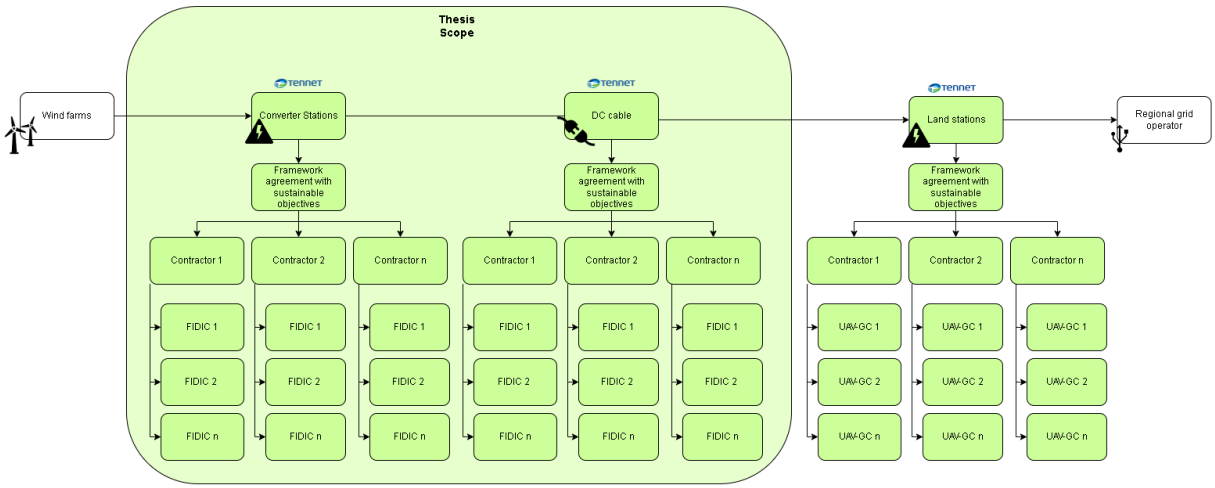



*Figure 15 Research Scope (own work)*

As was described earlier, the FIDIC silver book is tailored to work for EPC and Turnkey projects in the construction industry. For this case, a form of contract is applied that is in between the FIDIC yellow book and the silver book, but tends more towards the latter. While in silver book the contractor works very independently and with little involvement of the employer, the yellow book works with an intermediary: the engineer. More about the difference between FIDIC yellow and silver book is explained in **Appendix D**.

When the tender period has passed, the Employer will issue the Letter of Acceptance after a (undefined) period of time. This Letter of Acceptance can be seen as a formal acceptance of the letter of tender and is signed by the Employer. Also added is the annexed memoranda comprising agreements between both parties, and is also signed by these same parties. After that, the contractor has to issue the Performance Security within 28 days at his own costs (SC4.2 Performance Security). (Where 'Days' are defined as calendar days, not working days). The contractor shall ensure that the Performance

Security is valid and enforceable until the contractor has executed and completed the works and remedied any defects (SC4.2 Performance Security). Unless the Particular Conditions of the contract state otherwise, the commencement date shall be within 42 days after the contractor receives the Letter of Acceptance. The contractor shall start the design work and execution as soon as possible after the commencement date (SC 8.1 Commencement of Work). The period before the Commencement Date, the Employer and Contractor have time for alignment of objectives.

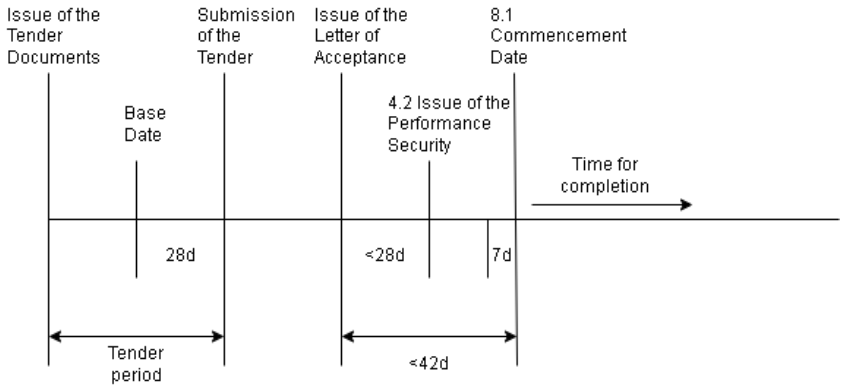



*Figure 16 Sequence of events (Conditions of Contract for EPC/Turnkey Contracts, 1999)*

### 3.6.3 Setting sustainable targets

The corporate social responsibility (CSR) ambition plan of TenneT indicates ambitions revolving both the Triple Bottom Line and the Sustainable Development Goals of the UN. They want to contribute to society, avoid, minimize and compensate for their environmental impact and ensure affordable costs of electricity supply for society. TenneT employed the SDGs to determine their organization strategy. The first key ambition within this organisational strategy is Circularity, which relates to raw material inflow and waste. This can be associated with SDG 12 (responsible consumption and production). The second key-ambition is Climate, this one relates to the use of green electricity and $CO_2$ emissions and relates to SDG 13 (Climate action). The Final main ambition is Nature, relating to taking responsibility for the minimization of impact on local nature. This links to SDG 14 (life below water) and 15 (life on land). This is all measured by using the Environmental Cost Indicator (ECI) (Tennet, n.d.-a).

For this case the contract mentions that all partners should commit to continuous improvement on the CSR topics that are described in the CSR roadmap of TenneT. This article states that all partners shall during the term of the agreement develop and perform a joint program. All partners shall have the objective to reach a as high as possible maturity level when it comes to CSR management and the agreed upon ECI. The roadmap will serve as a plan to achieve these goals and must be updated every set period of time. Not only the goal must be described, but also the road towards it. To be able to achieve these goals, TenneT is willing to provide (financial) incentives related to resources like knowledge, time and budget. When partners require one or more of these resources related to the key ambitions as where set by TenneT, a fixed percentage or contribution can be provided by TenneT but only when the measures can be verified in a way that it can be communicated clearly to the common stakeholders.

## 3.7 Case relevance and why it is representative for the offshore energy sector

The reality is that, now that the green transition from offshore in Europe is taking off, wind farms and offshore grid connection systems must be built in less and less time. Other challenges are that prices for raw materials are rising on the world market, which makes cost-efficient implementation increasingly difficult for offshore projects (Tennet, n.d.). TenneT's way of dealing with these challenges is to form a collective with contractors and thereby

increase the strength. Therefore, forming partnerships is a logical next step. This also comes with a change of perspective when it comes to values, sustainability has an increasing importance. Reducing the environmental impact that is associated with offshore wind systems may be a paramount goal for TenneT, but for many other private companies like wind farm developers, money is often a limiting factor. However, in the Netherlands and Germany there are companies involved in offshore building that have similar goals and values.

One of the partners of TenneT for the 2GW Program is Hitachi Energy. While being responsible of building around half of the HVDC stations around the world, they believe that long-term relationships like partnerships will help to reach their sustainable targets. They wrote a strategic plan for sustainability called Sustainability 2030, which focuses on four pillars: Planet, People, Peace and Partnerships (*Hitachi Energy Sustainability Report | Hitachi Energy*, n.d.). Contractor GE is also involved in sustainable development. Their focus lies on achieving carbon neutrality by 2030. They also commit to health and safety of Employers, Contractors, customers and visitors at the site (*Sustainability | GE Renewable Energy*, n.d.).

From these examples, it becomes clear that the offshore sector is changing its focus to sustainable building and innovation. Different action points like carbon neutrality (environment), health and safety (social) and partnerships (Economic) are on the agenda. This makes the case study from TenneT and partners, who will be pioneers in this process, relevant to the subject of the thesis and a relevant example of what is currently happening in the offshore industry.

## 3.8 Uniqueness of the case

The Netherlands and Germany only have one Transmission System Operator (TSO) which is the company TenneT and is owned by the Dutch government. Therefore, they are the only employer within this country that writes out assignments like the ones described above. A company like TenneT is therefore hard to compare to other public clients, also because of the specific industry they are active in. It is true that other European countries around us also work on the energy transition and are enlarging their offshore wind areas. However, the 2GW program of the Dutch and German branch of TenneT stands out because of their ambitious plan to prioritize sustainable building. This is something that has not been seen before in this specific sector. It must also be mentioned that due to the fact that there are a limited amount of contractors that can execute this specialist work, having them to partner up with a public client whilst trying to negotiate about the incorporation of sustainability is a hard task. This unique market situation has a big influence on the decision making which makes it harder to compare this case to other situations where the market situation is completely different.

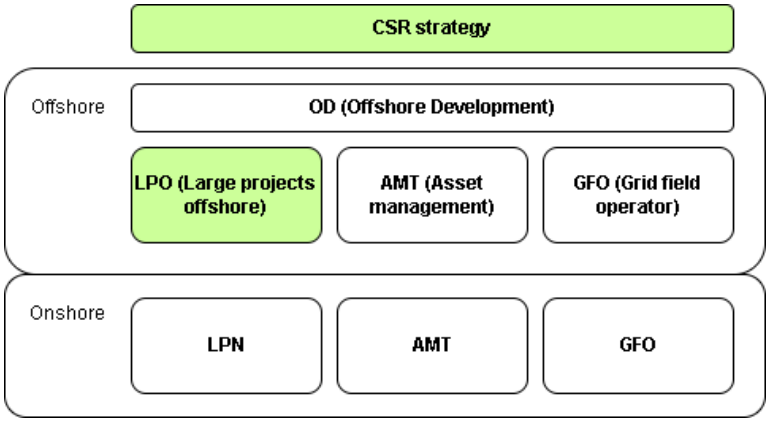
## 3.9 Interviewee selection

The selection of interviewees for this study was strategically based on their professional roles and their direct involvement in key aspects of sustainable partnerships within the case study company. The corporate social responsibility manager was chosen for their expertise in driving sustainability initiatives and aligning them with corporate goals. The systems engineer was selected to provide insights into the technical and operational integration of sustainable practices. The contract manager was included to discuss the procurement processes and contractual obligations related to sustainability. Finally, the project planner was chosen to shed light on the practical implementation and scheduling of sustainable projects. Additionally, an external expert was interviewed to provide an independent perspective on the same subjects. This individual possesses extensive knowledge of the case and serves as a contract manager within the construction industry.

While cultural differences within the company were not explicitly considered, the interviewees' roles are critical to understanding the multifaceted approach to achieving sustainable objectives. Their

combined perspectives provide a comprehensive view of the company's strategies and challenges in fostering sustainable partnerships. This role-based selection ensures that the study captures diverse and pertinent insights essential for addressing the research questions.

The relevant part of the structure of the company (for this research) is displayed in **Figure 18**. For this research, employees are invited from the CSR strategy department, and the LPO department from the offshore branch of the company. The figure below shows the company structure of TenneT and the overview of the interviewees.




| | |
|---|---|
| CSR | Corporate Social Responsibility manager |
| CM | Contract manager |
| SE | Systems engineer |
| PP | Project planner |
| EP | Extern professional |

*Figure 17 TenneT company structure + interviewees (own work)*

For this research, accounting for cultural differences within the case company posed significant challenges due to its composition of Dutch and German branches, both of which collaborate on the chosen case study. Each branch may approach the initiation of partnerships with sustainable goals in slightly different ways and face unique challenges. However, the results obtained from Dutch employees are still valid as they provide critical insights into the processes and strategies employed within the Dutch context, which significantly contributes to the collaborative efforts of the company. These insights are valuable for understanding sustainable partnership practices within the joint operational framework. To enhance the comprehensiveness of future research, it is recommended to include comparative studies involving both Dutch and German branches. This would enable a more nuanced understanding of how cultural differences influence the establishment and management of sustainable partnerships, thereby offering a more holistic view of the company's collaborative sustainability efforts.

The interview protocol can be found in **Appendix A**.

## 3.10 Methods of data collection

The collected information consists of three sources: public information about the case found online, documents received from the public client and transcripts from the interviews. Before doing this, a data management plan was written and checked by the data steward of the university after which the HREC documents (Human Research Ethics Committee) were also handed in for approval. These documents clearly state how obtained information is stored, who is allowed to read the (anonymized) documents, what will happen with the personal information after the thesis period and how to minimize risks related to the research.

## 3.11 Analysis of data

After the data has been gathered, a transcript was made of the recordings. After that, this transcript was anonymised to make sure that the information can't be traced back to a specific person in the company. When this was done, a thematic analysis is executed by labelling of key words. After the transcripts were been checked by the interviewees, the personal data was removed and only the anonymized data was used for the research.

It is chosen to do a thematic analysis and look for overarching themes related to the start-up phase of the partnerships in question. The interview questions were roughly distributed into the four phases of the start-up phase of partnerships: the initiation phase, the tender phase, the contract phase and the concretisation phase so the output of information can be linked to those overarching themes. Furthermore, another important thing that was looked for were the challenges that the interviewees brought forward when talking about working with this case from their field of expertise.

The analysis of the data is done with the online program Atlas.ti. This program helps to assign codes to quotations that have the same subject. To get insight into the current situation in the offshore energy sector the following labels were applied: Energy market and Sustainability. Then, the reason to choose for a partnership in this case study was sought by using the labels: Partnership, key-ambitions of TenneT. Next, the relationship with partners was looked into: Field of Tension. To measure sustainability the ECI methodology was applied by TenneT, this had his own label as well. To continue, the focus was on the connection between partnerships and framework agreements, this got the label: Framework Agreement. A unique feature of TenneT is their CSR roadmap, this was also labelled. Also, the word 'standardisation' was frequently represented and got his own label. Finally, the divers and barriers mentioned by the interviewees got labelled.

To further analyse the empirical data, the dialectical-relational approach as formulated by Fairclough (Fairclough, 2010) will be further elaborated on in chapter 5, the discussion. This methodology is derived from Bhaskar's explanatory critique (Sprinker and Bhaskar (1987), Chouliaraki and Fairclough (1999)). This methodology consists of 4 stages:

1. **Initiation**
   Here, the focus is on the initial phase of data collection and the identification of the main themes of phenomena related to the research question.
2. **Identification of Cause and Obstacles**
   In this stage, the cause of the phenomenon and any obstacles to changing it are identified. The researcher delves deeper into the underlying drivers and barriers.
3. **Analysis of Social Order**
   In the third stage, it must be determined who benefits from the continuation of the phenomenon. The power dynamics between various stakeholders involved in the phenomenon is analysed.
4. **Identification of Way Forward**
   In the final stage, the focus is on identifying if the obstacles that were found in stage two can be contested.

This approach is relevant to the current study as it provides a robust method for analysing the dynamics of partnerships with sustainable goals in the offshore energy sector. By employing the dialectical-relational approach, the study aims to uncover the underlying tensions, power dynamics, and discursive practices that shape these partnerships, offering valuable insights for theory and practice.

## 3.12 Presentation of analysed data

In the result chapter graphics like tables and figures are displayed. Furthermore, anonymized citations are added. The information is displayed in a coherent story which can enhance the obtained knowledge. Since a single case study is conducted, the presentation of the data will be still quite broad. Flyvbjerg (2006) advises in his paper about conducting single case studies to tell the story in all its diversity in order to allow the story to unfold from the many-sided, complex, and sometimes conflicting stories. Flyvbjerg also cited in this paper the following: *"The goal is not to make the case study be all things to all people. The goal is to allow the study to be different things to different people. I try to achieve this by describing the case with so many facets - like life itself".* A result of this type of writing is that these case stories cannot be summarized in a few main results. The case story itself is the result and is divided into the four stages of the start-up phase of partnerships with sustainable goals: the initiation phase, the tender phase, the contract phase and the concretisation phase.

# 4 Chapter 4 – Partnerships and sustainability in practice

This chapter presents the results of the empirical research conducted through a series of interviews with employees of the (public) client TenneT. An analysis on the results according to the dialectical-relational approach as developed by Fairclough will be executed in the discussion chapter.

It is revealed that there is a remarkable uniformity in the opinions and perspectives of the interviewees. Despite the diversity of roles and responsibilities among the participants, there was a consistent narrative regarding the progress of sustainability initiatives, the necessity of partnerships, and the challenges and opportunities inherent in these collaborations. This uniformity suggests a shared understanding and common experiences among professionals in the sector, which strengthens the validity of the findings.

## 4.1 Initiation phase

### 4.1.1 Progress on sustainability in the offshore energy sector

Before 2016-2017 the green energy sector was not focused on how to make the business more sustainable, the incentive of positively contributing to the environment by making green energy generation possible seemed to be enough (CSR). In earlier projects the life cycle of materials and constructions was given little to no consideration by wind turbine producers. However, since that time the market is undergoing changes and grown in size internationally which has resulted in a greater pressure also caused by the increasing interest of the outside world (CSR). This is when people started to realise that sustainability in the energy sector is not only about accelerating the energy transition by providing energy alternatives like wind energy to the main land but also about preserving in other forms. However, this requires a change of attitude. One that according to the interviewees has not fully been developed yet as can be read in the comment below.

*I still see that many of these things are still too much focused on doing a little less bad. And if we really want to be sustainable then you start looking at how to not just do it less bad or neutral but how are you going to make sure that you are going to contribute. That's the next step. (SE)*

What has been observed is that more and more companies consciously opt for getting involved in a greener sector such as the wind sector instead of the gas market. And yet this does not say anything about how these companies do this (CM). The project planner indicates that in his opinion it is not yet: it can be more sustainable, so we do it. It can be more sustainable, so we look at what it costs and then we do it. When it comes to drivers for sustainability, there are also differences between clients and contractors:

*You hear contractors shouting all kinds of things, they are not standing still. But they are not forward-thinking and not quite at the forefront. (CM)*

On the client side, the road to sustainability can have a more prominent driving force. The interviewees indicated that as TenneT is part of the government it is therefore much more sensitive to wanting to change (CM). Not only does the 2GW program contribute to the energy transition, TenneT also handles new standards on sustainability (SE). However, for TenneT the most important thing is to meet grid requirements (PP). The systems engineer stated that in his opinion with this kind of programs finishing on time and being operational in time will always be of high importance. Realizing the platforms and ensuring that the green energy capacity can be enlarged by bringing more wind energy to the main land is the top requirement. You could say this is a sustainability goal at the highest level (SE). The contract manager explains that he understood from different discussions that TenneT is ahead of other TSOs with the program they are setting up. The CSR manager agreed and stated:

*We are still frontrunners as TenneT being. Partly because of the green financing opportunities, this is also a motivation to continue. (CSR)*

However, in order to fully embrace the sustainability movement one must not only try to be ahead of others in the same sector but also adapt the culture within a company. For TenneT this would mean that sustainability and how to improve on sustainability should always be on the back of the minds of every employee, just like it is the case already with the subject safety. According to the systems engineer the subject 'sustainability' is still on the level of individuals within the company and not company-wide.

### 4.1.2 The necessity for partnerships in 2GW

At first the 2GW program consisted of only two projects which were tendered individually. However, the amount of cable systems that had to be built grew to 22. Therefore it was not ideal tot tender all of these projects individually anymore. The main issue became the availability and price of contractors. According to the CSR manager this means that you have to make yourself more attractive as a client in order to overcome these issues. You need another strategy. The way TenneT proceeded the discussions when this happened was by promising potential partners that they were willing to employ them for multiple projects during a certain time span.

Another thing that was important when considering to apply the partnership approach was the desire for incorporation of sustainability in the new program. As was explained before, TenneT is owned by the government and sponsored by public money and therefore has to comply to some extent with the government policy. One of the orders that TenneT received from them was: no significant harm. This is also why TenneT defined their own sustainability goals in 2018. These are now reflected in the contracts, sometimes in the award criteria and in other cases (cables) maximum emissions are agreed upon (CSR).

## 4.2 Tender phase

### 4.2.1 Drivers and barriers when starting up a partnership

In the pursuit of sustainable partnerships within the construction industry, understanding the key drivers that motivate and facilitate such collaborations is crucial. Identifying these drivers provides valuable insights into the factors that encourage stakeholders to engage in sustainable practices, thereby enhancing the effectiveness and success of these partnerships. Equally important is the identification of barriers that hinder the formation and success of sustainable partnerships. Recognizing these obstacles allows stakeholders to develop strategies to mitigate or overcome them, thereby ensuring smoother and more effective collaboration.

During the interviews, participants were presented with a list of drivers and barriers to sustainable partnerships as identified by existing literature. They were asked to reflect on these factors and provide feedback on whether they recognized these elements from their own professional experiences. Additionally, interviewees were given the opportunity to expand upon the list, contributing new drivers and barriers based on their practical insights and experiences within the industry. The lists with driver and barriers that are presented on the next page are listed in no particular order.

**Drivers**

Below is the list of drivers that were recognised by the interviewees and could be supported by a practical example. 10/18 drivers match the literature, driver 11 was added. First, a list of the mentioned drivers follows, then all of them will be explained individually. In the next chapter, the discussion, the implications of the listed drivers will be determined.

- **Driver 1:** Use knowledge from the market and stimulate innovations
- **Driver 2:** Positive effect on project performance
- **Driver 3:** Promote the transition to sustainable construction
- **Driver 4:** Forming a more valuable relationship due to maximizing efficiency and improving profitability
- **Driver 5:** Alignment of sustainable objectives among partners
- **Driver 6:** Partners adapt to higher ethical standards
- **Driver 7:** Fair and open discussion and communication, shared motivation and the capacity for joint action
- **Driver 8:** Deal with complexity of environmental and social problems and improve environmental conditions
- **Driver 9:** Opportunity to share risk for mutual benefit
- **Driver 10:** Attract highly motivated talents drawn by sustainability
- **Driver 11:** Opportunity for investments

**Driver 1: Use knowledge from the market and stimulate innovations**

In the specific case of the 2GW program an unique situation took place where almost the whole available market was recruited and therefore all the knowledge was centralized. This made it possible to compare the contractors and consortia to each other. According to the CSR manager this has led to lots of good initiatives and the partners got a better insight into the possibilities and the accompanied costs. The contract manager added to this that the room for discussions that come with the application of a partnership can come in quite handy since it can be hard to select your partner in the beginning of the process when you are planning on further developing sustainable initiatives.

**Driver 2: Positive effect on project performance**

Due to the application of the ECI measuring method at TenneT, it became possible the get insight into the actual performance of a project. This made continuous improvement possible (CSR, PP). The fact that in the 2GW program multiple projects are combined also made it possible to simultaneously make decisions for multiple projects at once, and thereby increase project performance on a bigger scale (CM). On top of that the systems engineer stated that when entering into a long-term agreement with each other standardization also becomes easier. He called it a big efficiency gain in the longer term. The project planner also named the possibility of combining of work as huge side benefit.

**Driver 3: Promote the transition to sustainable construction**

By putting long-term goals in the contract, all parties know what the discussion is about and what the foreseen final destination is. These goals should be tailored to the market, for example for the offshore sub-station of the 2GW program the contract stated: climate neutral platform. This is quite a different goal compared to what was agreed upon for the land stations: ECI of 0. So depending on what is possible, steps will be taken. The contract manager also described that partnerships are ideal to make joint roadmaps so you can plan how you will change the market together. However, he also claims

that one has to watch out for greenwashing practices that could emerge from promoting sustainable construction.

**Driver 4: Forming a more valuable relationship due to maximizing efficiency and improving profitability**

According to the CSR manager one can have lower costs when working more sustainably. This is because the quality of the work is improved and one has more insight in what happens in the supply chain. Therefore one can buy less, do less maintenance and guarantee a longer life span of the construction and the used materials.

**Driver 5: Alignment of sustainable objectives among partners**

Due to the continuous improvement supplement in the contract for the partnership, all partners will have to align with the sustainability goals of TenneT. Also, because there is a partnership construction in place there is more room for discussions about what can realistically be done for a certain price. Therefore it is possible to have a more honest and deeper conversation about what the partners can achieve together (CM).

**Driver 6: Partners adapt to higher ethical standards**

According to the interviewees this is a complicated matter. The contract manager mentioned that in the 2GW program lots of international partners are involved. For these huge contractors, their work for the 2GW program translates into only a small portion of their total turnover. It is therefore unrealistic to expect that TenneT can change their ethical standards. However, when a contractor is made partner and is assured of multiple projects over a certain period of time, this could result in them changing their investment strategies for the series of projects.

**Driver 7: Fair and open discussion and communication, shared motivation and the capacity for joint action**

As has emerges prominently already multiple times, a partnership is described by the interviewees as perfectly suited for more and more open communication. This driver has great overlap with driver 5, where was described how the partnership construction creates possibilities for more honest and deep conversations.

**Driver 8: Deal with complexity of environmental and social problems and improve environmental conditions**

This has a lot to do with the measuring methods that TenneT uses. As was described earlier, the ECI methodology is used for measuring environmental progress but measuring social problems is more complicated. It can be difficult to establish if something is really a social problem, especially when working with other countries and other cultures (CSR). For now, the continuous improvement supplement of the contract is a way of dealing with complex sustainability problems.

**Driver 9: Opportunity to share risk for mutual benefit**

The CSR manager named this as an important driver. By being able to really get insight into the supply chain, the partners can identify the most important possible risks. This creates the opportunity to act on these risks and hopefully even get ahead of it.

**Driver 10: Attract highly motivated talents drawn by sustainability**

According to the CSR manager this is seen as one of the main drivers for contractors to enter a partnership with sustainable goals. The offshore market is still growing and companies are in desperate need for more resources, more personnel. Also, more clients are including sustainable award criteria so having more inhouse knowledge about this subject can give a contractor a competitive advantage.

**Driver 11: Opportunity for investments**

To conclude, the contract manager mentioned that everything always has to do with money. He stated that almost all companies that TenneT works with have made a blunder at some point and want to make up through their next project.

**Barriers**

Below is the list of barriers that were recognised by the interviewees and could be supported by a practical example. 7/12 barriers match the literature. First, a list of the mentioned barriers follows, then all of them will be explained individually. In the next chapter, the discussion, the implications of the listed barriers will be determined.

- **Barrier 1:** Higher costs of sustainable building options
- **Barrier 2:** Lack of case studies
- **Barrier 3:** Lack of financial incentives
- **Barrier 4:** Risk of limiting competition
- **Barrier 5:** Sustainable building is too time intensive
- **Barrier 6:** Loss of own identity
- **Barrier 7:** Difficulty with agreeing on a price at front

**Barrier 1: Higher costs of sustainable building options**

Although sustainable building could lead to more efficiency and a higher profitability as was explained by the CSR manager in driver 4, this is only possible if one goes about it properly. For example, when trying to find an alternative for steel, a highly polluting material, one could choose to work with so-called 'green steel'. However this is around two times more expensive. One has to ask themselves: how much is the energy transition worth to you?

**Barrier 2: Lack of case studies**

The CSR manager said that this is certainly something that can be a bottleneck in real life projects. Contractors feel more comfortable if a building technique or the use of a material has already been tested before elsewhere. This could be solved by doing small pilots.

**Barrier 3: Lack of financial incentives**

The approval or disapproval of costs is usually done based on what the costs were in previous projects. Only, those previous projects usually did not include a sustainability aspect yet. It is therefore very well possible that a new project is more expensive than a previous one. In the past this would almost certainly mean that the new project is disapproved or has to be scaled down, but according to the CSR manager this is changing. The contract manager adds to this that a company like TenneT cannot spend more money on sustainability than was stated in assignment when working on a project in the government sphere. This because what they spend is being monitored by the ACM. Finally it is also the case that there is so much political pressure on the projects and the energy transition that finishing

early is more important than working more sustainable (SE), as a result, more money is more likely to be made available if it speeds up the process than if there is an opportunity to build more sustainably.

**Barrier 4: Risk of limiting competition**

Because of the big scale of the 2GW program, many of the available contractors where needed for construction. The contract manager also explained that when contractors foresee a decline of their profit due to raised standards on sustainability like what is happening right now with the nitrogen debate, they will withdraw. As a client, one can therefore not be too demanding when it comes to setting minimal requirements (CSR). A limiting amount of competition also can be seen as a weakening of the CSR managers' position since they have less leverage when it comes to discussing sustainability, contractors are already aware of the fact that you have no other choice than to work with them (CSR). On top of that, it is very well possible that contractors that miss out on the opportunity to grow with you and develop a more sustainable market will have more difficulty to enter a future project now that they do not have the competitive advantage.

**Barrier 5: Sustainable building is too time intensive**

What can be a problem with sustainable building is that there can be a high time pressure. The CSR manager explained that due to a licence period that was longer than anticipated, the building of the land stations was done way less sustainably than was technically possible. Therefore he advised that for this type of projects it is better to design sustainable from the beginning to get maximum results. The contract manager added to this that discussing the whole supply chain with the partners also can take a lot of time, time that a partner must be willing to make for you.

**Barrier 6: Loss of own identity**

If all of a party's sustainable initiatives were to be shared with the market then that company would no longer have a distinctive character. This is a risk when sustainability becomes an award criteria. Ideally one wants to set up expert sessions with the possible partners to discuss their 'best in class' ideas in the field of sustainability, but most contractors are not eager to do that because that will possibly jeopardise them winning the tender because other contractors stole their ideas (CSR).

**Barrier 7: Difficulty with agreeing on a price at front**

Especially for bigger sized programs like the 2GW program it can be difficult to determine a price from the beginning. Even though it is still possible to make some agreements up front and standardize certain steps in the construction when working with a partnership, the pricing can still be difficult. What is also happening is that pricing is going up from the moment that a partner knowns that there is no concurrence (SE).

### 4.2.2 Measuring sustainability: Environmental Cost Indicator

The ECI, Environmental Cost Indicator, is a mechanism that TenneT uses to express sustainability in numbers. Steps in sustainability take place through decreasing the ECI value.

*You have to make it qualitative, but you can't calculate everything. You also have to leave room for things you can't calculate. But everything else you can calculate you have to calculate. Otherwise you have nothing and you also have no steering tool left where you can then improve further. I think that a combination is a good form. (CM)*

Contractors calculate to what extent it is interesting to become sustainable compared to the discount they receive. It can therefore be seen as a purely marketing financial story (CSR).
However, when a partnership is formed, the fact that it is a long-term relationship

provides the opportunity to further develop on sustainability with every project (CM). This can be categorized under the guise of 'continuous improvement' that all interviewees talked about and that is included in the contract.

One special advantage of using ECI is that when it turns out that the sustainable solutions that where offered are not possible to execute, one can choose to become more sustainable in another field and still end up with the same amount of emissions. However, ideally one should aim for an emission of zero. By using the ECI method, it becomes possible to compare different solutions (CSR). What also happens is that in the current market situation in the offshore, with only a limited amount of contractors available, the ECI method is used to find the cheapest solutions with the highest return.

*Because the moment that competition goes away, that part [excelling in sustainability] is not going to help you get the work because you already have the work. Then you're not going to do the bottom line because that just costs money. Then you're just going to do the cheap, easy stuff. (CM)*

## 4.3 Contract phase

### 4.3.1 Framework agreements as a solution for the increasing volume of projects

Both the systems engineer and the project planner named a partnership the equivalent of a framework agreement. The systems engineer explained that the partnership as executed by TenneT is basically a long-term agreement where a set of standard agreements are applied in order to be able to employ the partners for multiple projects in the set time span. Therefore, it is mostly still a strict client-supplier relationship. What is special is that TenneT has the wish to reach a higher maturity level with their partners on the subject of sustainability. However, in order to make this work the culture on the work floor needs to change:

*I think that on the work floor, in the projects that are currently running, people are used to the following: you are the client and you are the contractor and that is how we act together. There is still quite a lot of sensitivity in that. From the past, how you are used to working with each other. If you really are each other's partners, you say: we are facing a joint task and we are going to put our shoulders to the wheel together. But then you have to organise it differently, which requires a completely different attitude and behaviour in how you deal with each other. (SE)*

The project planner mentioned that when was decided that the 2GW program became too big for all the projects to be tendered individually and a partnership was necessary, it was announced that all projects had a year delay factored in. Changing to a framework agreement allows partners to have more in-depth discussions about sustainability opportunities, possibilities regarding changing the supply chain and investments and how TenneT as a client can help with demands, time, investments and quality assurance (CM). But this does take time.

The CSR manager explained that although the continuous improvement program is one of the benefits of a framework agreement, the fact that contractors/partners are already assured of new project does make it harder to reach ambitious goals on sustainability.

*Actually, it is a weakening of my position. Ideally, I would have preferred competition on sustainability and for suppliers to set their own ceiling. Now I don't have that because I said beforehand: I'm going to work with you. Let's see what could be done together. (CSR)*

### 4.3.2 Tension between client and contractor in the offshore energy sector

There is only a limited amount of contractors available in the world that can execute the specialistic work needed for the 2GW program. Overall, the same goes for the rest of the offshore sector. It has come to the point that clients, TSOs, all over the world are competing over who gets the contractors to

build the windfarms that are planned on being built around the same time (CM). In this market, contractors therefore can work all over the world and have to make choices on what clients to collaborate with. For the TSOs this meant that they had to think about how to be attractive for potential partners. On the other side, contractors where very aware of this situation which has led to increases in price (SE). As a client one can therefore not set too high minimal requirements (CSR), which could lead to clients having to settle with lower requirements on sustainability than was technically possible.

The contract manager explained that during the discussions with the possible contractors/partners it came to the fore multiple times that contractors actually where receptive to the idea of working more sustainable but sometimes still had to drop out because they had too much work elsewhere. He continued by describing how at some point during the discussions the contractors that were still in the game were aware of the fact that there was barely any competition left. This changed the way they participated in the following conversations. The remaining contractors were almost assured of getting a certain amount of projects and putting more effort into sustainability would not have provided them with more projects (PP). On top of that, contractors could also be reluctant with sharing sustainable initiatives due to the risk of these initiatives getting 'stolen' by other contractors causing them to lose their competitive advantage (CSR, SE).

## 4.4 Concretisation phase

### 4.4.1 CSR roadmap for continuous improvement

The pressure and obtained knowledge from the 700 and 900MW projects have been the inspiration for starting the 2GW program. The most impactful step towards sustainability in 2GW is that less 'power sockets' have to be build. Also with the cable system big steps have been taken that has led to considerable less system losses. More green energy has been produced, reducing the workload of coal-fired power plants (CSR). TenneT however made the choice to go one step further: how can the process and production of these converter stations and DC cables become more sustainable?

The continuous improvement program was added to the framework contract and promotes the partnership concept. Due to the increasing time pressure and missing edge knowledge in the field of sustainable building in the offshore sector the project had to be started quickly after the tender but with every new project the standards for sustainability goes up. The working of this continuous improvement is explained in the case description in **chapter 3**. The biggest challenge is usually making concrete what long-term goals mean for tomorrow's work (CSR).

### 4.4.2 Standardization: accelerator or bottleneck?

When it comes to alignment amongst partners, the sustainability roadmap as created by TenneT is the way to go. Apart from the goals that contractors/partners share with their client TenneT, other goals related to sustainability are possible but not taken into account. For a program this size, standardisation of design is key. TenneT wants a standard procedure for everyone working with them, even though every market party might have their own standard as well. Creating this TenneT-standard requires knowledge sharing among partners, which is something that competing contractors are not always happy with (SE, CSR).

The project planner explained that working with a standardised product for the converter stations and DC cables poses the least risk. Speeding up the energy transition is the main goal and working with different standards could cause delays.

*One of the programme's mottos is: design one, build many. So one design and then it's copy-paste for the others. Now execution is not copy-paste because anything can happen that you don't know about beforehand. (PP)*

One of the examples that was mentioned was the standardized size of the converter stations. The HVDC system, the transformers, can weigh about 300.000 kilograms and exist in different shapes and sizes. TenneT made a design that that would fit any of these kind of equipment that partners in the partnership can provide. Which also meant that if one of the partners provides a smaller transformer than others, the size of the HVDC system would not be adjusted. You may ask yourself whether this missed opportunity to save money and embrace sustainable initiatives by contractors is worth speeding up making the programme operational (PP).

# 5 Chapter 5 – Discussion

## 5.1 Significant findings

To analyse the results of the research a methodology called the dialectical-relational approach is applied as was developed by Fairclough. This methodology can be regarded as an approach within the broader discipline of discourse analysis. For more information about this methodology, reference is made to **Chapter 3.11**.

**Initiation**

*Here, the focus is on the initial phase of data collection and the identification of the main themes of phenomena related to the research question.*

There is an evident drive from TenneT employees, the offshore client from the empirical research, to make the offshore energy sector more sustainable and for TenneT to be the leader in this field. The question of how a TSO can establish a partnership with contractors to enable achieving sustainable targets is one that cannot be answered all in one go. As a frontrunner in a sector that is still in transition towards more sustainable construction, multiple challenges have arisen along the way for which a suitable solution had to be found out on the go.

It emerged from the interviews that the company is not yet satisfied with the envisaged sustainability results as they are currently described, and it is not for nothing that TenneT has drawn up a CSR roadmap to promote continuous improvement in the area of sustainability. The reason for all this, the so-called phenomenon that occurs here, can be summarised in the following topics: first, there is the uncertainty among both the client and the contractors about what the future of the offshore energy sector will look like if sustainability plays a bigger role. Estimates are made about potential costs and change in workload. In addition, there is a 'complicated' market situation where, due to increasing demand and growth, clients such as TSOs are competing to bind the limited available contractors to them, and that while it seems to be the case that these contractors do not yet see the need to become more sustainable and only see this as an additional cost item, making contract negotiations more difficult. TenneT as a client is still searching for an identity in this new sustainable landscape, which among the employees spoken with still seems to lead to a lack of clarity about what TenneT's position is on the relationship between construction time, standardisation and sustainability in the program, as well as how a partnership will improve the chances of accomplishing sustainable targets.

*It is yet still unclear how a partnership should be set up to enable achieving sustainable goals due to:*

1. Fear of the unknown
2. Disbalance in the market
3. Compliance with the partnership concept

**Identification of Cause and Obstacles**

*In this stage, the cause of the phenomenon and any obstacles to changing it are identified. The researcher delves deeper into the underlying drivers and barriers.*

Initiating a transition involves challenges for both the initiator, in this case TenneT, and the other actors in the market. At the stage the offshore market is currently in, interviewees indicate that a primary obstacle to change and to become more sustainable in this market is the lack of case studies (barrier 2, lack of case studies). This is a circle that needs to be broken because now it causes uncertainty and a lack of best practices to build on. There is also the preconception going around that sustainable construction is very time-intensive (barrier 5, sustainable

building is too time intensive) and therefore takes more time and incurs higher costs than working in the conventional way (barrier 1, higher costs of sustainable building options). According to some of the interviewees, this is something that, if the process is set up carefully and with a good understanding of the evolution of sustainable building, absolutely does not have to be the case. Another fear circulating mainly among contractors is that cooperation and sharing knowledge about sustainable construction as expected by clients, will lead to losing competitive advantage (barrier 6, loss of own identity). In other words, what initially hinders the transition is the fear of the unknown.

Besides this general observation, a deeper look can also be devoted to the perspective of both client and contractors or consortia in the offshore energy sector and what specific obstacles they see that are slowing down the transition to sustainability. The theme 'it's a complicated market' can be directly linked to barrier 4: Risk of limiting competition. The growth in demand for specified offshore contractors is currently growing faster than their fleets. Vessels still under construction or even to be built in the future are already reserved for jobs. This imbalance between supply and demand is creating tension in the market and causing price increases that are difficult to predict (barrier 7, Difficulty with agreeing on a price at front). In addition, clients also suspect that the average contractor sees investing in sustainability only as a way to make money and improve their image at the same time and has limited or no intrinsic motivation to improve the world. Barrier 3, lack of financial incentives, is also a concern of the client as political pressure on projects and accelerating the energy transition ensures that more money will be freed up if the projects can then be operational faster than when asked to invest in, for instance, sustainable building materials. In general, for Tennet and contractors, the political climate greatly effects the chances for success and create a high level of uncertainty.

Finally, TenneT's mission as client and frontrunner in the sustainability landscape to be developed is discussed. As described in the literature, it is essential to adapt the company's culture to a partnership with sustainable objectives. Employees' feedback from the interviews suggests that this step has not yet been fully accomplished within TenneT. They mention that TenneT's priorities are mainly to meet grid requirements and to ensure safety. Working sustainably is not yet one of these pillars and is described more as a theme that is present at the level of various individuals but not company-wide. On top of that, it is added that the partnerships as implemented in the case study are more like a strict client-supplier relationship. If the definition of partnerships with sustainable objectives from the literature is compared with this case study, it is therefore doubtful whether TenneT fully complies with the partnership concept.

**Analysis of Social Order**

*In the third stage, it must be determined who benefits from the continuation of the phenomenon. The power dynamics between various stakeholders involved in the phenomenon is analysed.*

*Fear of the unknown*

Fear of the unknown plays a major role in companies being reluctant to implement new sustainability measures. Lower costs are an important factor; companies save money by sticking to familiar methods and avoiding investing in new technologies. It is as well easier to maintain existing processes and structures, which contributes to resistance to change. In addition, this fear often acts as an excuse to avoid communication and cooperation with other parties, maintaining the status quo. These positions of power and interests reinforce the tendency to stick to familiar and safe practices, slowing down innovation and sustainability.

*Disbalance of the market*

From the TSO's side, there are objections to the attitude of contractors in this market, for instance, it is said that contractors and consortia use their dominant position in the market to earn as much as possible and contribute only the most necessary to sustainability issues with the sole aim of winning the tender. This would make it difficult to get the transition started because only the cheap, easy solutions are considered. Contractors and consortia have amassed a dominant position due to the tight market. The work is up for grabs, allowing them to make numerous demands and ask steep prices. They also have a strong influence on how negotiations unfold, especially when they are already almost assured of one or more contracts. This puts the client in a difficult situation when they are under time pressure and also want to make demands on the partnership in terms of sustainability. In addition, the client, the TSO, is also dependent on government decisions driven by political fluctuations. This puts the TSO in a difficult position between the contractors, the consortia and the government shareholders.

*Complying with the partnership concept*

The TenneT employees interviewed, who come from various departments, are positive about making the offshore energy sector more sustainable and have an intrinsic motivation to make changes. However, they do comment on the way TenneT operates as a company; for instance, they do not yet see any change in ethics within the company. With the 2GW programme, a company like TenneT is carrying a lot of responsible work on its shoulders, which must be done with care, but it is also of importance that the moment it is stated that there will be cooperation according to the partnership principle to enable achieving sustainable goals, this should also be reflected in the working method. Here, TenneT's management has a position of power above its employees and can make decisions about, among other things, how the relationship between rapid execution, standardisation and the implementation of sustainability lies. It also decides how and how often it communicates with its partners. They also have an exemplary position in relation to the partners.

**Identification of Way Forward**

*In the final stage, the focus is on identifying if the obstacles that were found in stage two can be contested*

*Fear of the unknown*

To motivate companies to step out of their comfort zone, a need to join the sustainability movement must be created and deemed feasible. Where TenneT is now the initiator, other TSOs around the world will also have to demand equivalent sustainability requirements from their potential partners in order to make it clear to other parties and consortia that innovating on sustainability is rewarded and that it is dangerous to lag behind and thus run the risk of losing competitive advantage. What TenneT has seen is that it is wise to work in phases, to gradually get the transition underway and give the market the chance to adapt and, for example, to rethink the supply chain, research new technologies and give suppliers of materials the chance to set up an improved production line. In this way, pilots will make it possible to become familiar with new techniques and materials (overcoming barrier 2). As for the fear of a longer building phase with higher costs for a partnership with sustainable objectives, the CSR manager recommends making a design with sustainability in mind right from the start, so as to get the most out of it and avoid delays because sustainable solutions have to be incorporated later in the design. In addition, it is also indicated that by increasing the quality of the work by using future-proof materials and innovative constructions in combination with working with equally-minded contractors/consortia that want to make their supply chain more sustainable, it
is quite possible that less material needs to be purchased, less maintenance is

required and a longer life span can be guaranteed (overcoming barrier 5 and 1). The last fear raised was that of 'loss of identity' (barrier 6) which was mainly felt on the contractors/consortia side. Ideas that (possible) partners come up with during the expert sessions meant for discussing innovative ideas must in some way be protected from being stolen by competitors. When a partners is ensured that they can keep their competitive advantage they are more likely to speak more openly. Consideration can be given to what level of standardisation is really needed to cut costs while also leaving room for partners to retain their distinctive character.

In addition, consideration can also be given to which drivers could deliver such a great deal that the obstacle of 'fear of the unknown' is worth overcoming. For instance, executing a partnership with sustainable goals has a high chance of having a positive effect on project performance (driver 2), especially in this situation when the roadmap is applied for continuous improvement. Another driver that applies here is that this way of working is a way of dealing with the complexity of environmental and social problems and can help improve environmental conditions (driver 8).

*Disbalance in the market*

This obstacle is perhaps the most difficult of the three to solve, demand will not decrease any time soon and supply availability can only increase at a certain rate per year. One is very dependent here on what others are doing. What is worth investing in, however, is to communicate well with potential partners and make it clear to them what transition this market is undergoing and that it is also important for them to go along with this so that they will not 'miss the boat' (overcoming barrier 4). To overcome the fact that agreeing on a price at front is difficult a certain level of standardisation is appreciated. The CSR roadmap can also be deployed to provide clearance to partners about what investments the client is willing to make when sustainable solutions can only be realised with extra budget. Also by using framework agreements, a client can make itself attractive to work with because it ensures financial security for the coming years (overcoming barrier 7). Finally, money is more likely to become available if the investment results in speeding up the process. When the transition to sustainable construction reaches a higher maturity level and more parties worldwide are engaged in it, this barrier will most likely become lower. Several interviewees also indicated that it is desirable for the (Dutch and German) governments to take action to accommodate TSOs, such as developing legislation on what kind of vessels are clean enough to sail through national waters to force contractors to replace polluting equipment. (overcoming barrier 3).

To enhance attractiveness as a client and secure potential partners' agreement to higher sustainability requirements, the TSO must effectively demonstrate the benefits of collaboration. One significant driver is the opportunity for sharing risks and benefits within a partnership with sustainable objectives (driver 9). Additionally, both clients and contractors benefit from attracting motivated talents through sustainable practices (driver 10). Given contractors' urgent need for resources, presenting attractive sustainable partnerships can enhance the client's appeal. Moreover, possessing extensive in-house knowledge can provide a competitive advantage. Furthermore, offering potential partners a long-term strategic partnership is appealing due to the financial security it provides (driver 11).

*Complying with the partnership concept*

To overcome the obstacle of TenneT's difficulty in embracing the partnership concept beyond a framework agreement and fostering a company-wide commitment to sustainability, several drivers can provide effective solutions. Emphasizing the benefits of fair and open discussions, shared motivation, and the capacity for joint action (driver 7) can help shift the relationship from a strict client-supplier dynamic to a more collaborative partnership. This can foster a culture of mutual support and shared goals, enhancing intrinsic motivation at all levels of the company. Additionally, leveraging market

knowledge and stimulating innovations (driver 1) can demonstrate the tangible benefits of sustainable practices, encouraging the company to invest fully in sustainable business ethics.

Highlighting the alignment of sustainable objectives among partners (driver 5) can further reinforce the importance of collective commitment to sustainability, moving beyond individual efforts. Promoting the positive effect on project performance (driver 2) can showcase how sustainability can lead to improved efficiency and outcomes, providing a strong business case for the company to embrace the transition. Furthermore, promoting the transition to sustainable construction (driver 3) emphasizes that partnerships with sustainable goals can collectively drive market change, fostering industry-wide improvements and setting new standards for sustainability. Forming a more valuable relationship due to maximizing efficiency and improving profitability (driver 4) highlights that such partnerships allow for the pursuit of long-term goals and create better insights into the supply chain, ultimately enhancing transparency and accountability. By focusing on these drivers, the company can develop a more integrated and effective approach to sustainability within its partnerships.

## 5.2 Implications of the research

**Broad implications**

The research carried out for this study is particular in nature as it addressed a case study of public client TenneT, but this company happens to have a monopoly in the Netherlands and Germany. As a result, by going into a specific case, it has still given a broad answer to the research question at hand as there are no other parties performing similar projects in these countries. Still, other industries can learn from the case; this is also reflected in the recommendations for sectors with comparable settings and goals in the conclusion. Main themes that emerge as significantly important in realising a successful sustainable partnership are strategic planning, providing education and clear communication. These critical components are fairly general and universally applicable.

**Organizational implications**

For organizations, the research underscores the need for a cultural shift towards sustainability. This involves moving beyond individual motivations and embedding sustainability into the company's core values and operational strategies. Organizations must recognize the long-term benefits of sustainable partnerships, which include enhanced market reputation, increased competitiveness, and improved financial performance through risk-sharing and innovation. Recommendations specifically for the case study company TenneT can be found in de conclusion.

**Policy implications**

From a policy perspective, the research suggests that regulatory frameworks should support and incentivize sustainable practices. Policymakers can play a crucial role by providing financial incentives, facilitating knowledge sharing, and setting clear sustainability standards that encourage organizations to adopt sustainable practices. This can help create a level playing field and drive industry-wide change.



## 5.3 Study limitations

This section discusses the limitations of the research, the impact it has had and why the results are still valid for answering the research question.

- When conducting the literature review, careful attention had to be paid to which sector the research was based on. Some information applies specifically to the construction sector, while other information is more generally aimed at partnership building. Information specific to the offshore sector was not found, so for this the researcher depended on the semi-structured interviews for findings.
- There was limited access to TenneT's documents on sustainability. As the programme is still in its start-up phase, a large portion of the information is not yet final and cannot be viewed as a non-employee of the company.
- It is beyond the scope of this study to draw conclusions about how effective this way of setting up partnerships with sustainable goals is. Because the case study is still in a start-up phase, it is not possible to measure whether the choices made to set up the partnership also have the desired effect in later phases. The main question is therefore limited to this start-up phase with the wording: 'enable achieving sustainable targets', and in the sub questions: 'before contract close'.
- This thesis focuses on the perspective of the client when it comes to setting up partnerships. The partners positions were therefore left out of the equation. The obtained data is therefore limited.
- TenneT is a Dutch and German company. As one of the interviewees mentioned during the interview: something that is a problem according to us can be something different for someone from another country or culture. It can therefore not be assured that the insights and recommendations that are obtained and given in this thesis are immediately applicable for every other TSO in the world.
- The generalizability of the results is limited by the small sample size. Five interviews were conducted with people from different departments and a different job description. The obtained results are therefore broad, but less in depth.
- The obtained data from the interviews is analysed by using Atlas.ti as is described in the methodology chapter. However, it is not possible as a researcher to conduct a completely objective analysis. To avoid too much subjectivity, the results chapter made use of quotes and constantly clearly indicated who gave what information.
- This research did not take into account the cultural dynamics within a multinational company like the one from the public client from the case study. In contrast, cultural differences were also not mentioned by interviewees in the empirical study. That said, these differences are likely to still exist and could perhaps have been brought to the surface by asking different questions during the interviews.

# 6 Chapter 6 – Conclusion and recommendations

Partnerships with sustainable objectives are making inroads within the construction industry. While in some sectors this is already far advanced, there are also sectors, such as the offshore energy sector, where the first steps are only now being taken. According to the literature, a partnership set up in the right conditions would bring many benefits, such as higher project performance, improved cooperation between partners and the possibility of achieving common goals. However, it turned out that this does not always have this effect, which according to the experts may well have to do with the fact that the definition of partnership, and especially partnerships in which an attempt is made to promote the transition to more sustainable construction, is still often unclear. In addition, literature on partnership in the offshore energy sector is very scarce. How sustainability is addressed within partnerships in this sector and how sustainable objectives can be promoted has not yet been established. In this thesis, research was conducted into how clients (TSOs) in the offshore energy sector can include sustainability as an objective within the partnerships that are currently in place and how they can employ it in such a way that these objectives have a higher success rate in the later stages of the partnership. The central question here is:

*How should TSOs develop partnerships with contractors to enable achieving sustainable targets?*

The initial phase of the research involved conducting a literature review on partnerships, with a particular emphasis on how to incorporate sustainability in the startup phase. Subsequently, a case study was conducted within the offshore energy sector at the TSO of the Netherlands and Germany TenneT with a specific focus on the 2GW program. The case study was designed to investigate the existing processes for setting up partnerships with sustainable objectives in the offshore energy sector as seen from different viewpoints within the organization. Following that, semi-structured interviews were conducted with practitioners directly involved in this project.

## 6.1 Answering the research questions

**Research question 1 –** What is the definition of a partnership with sustainable objectives?

Partnering is primarily a way of working together. Over time, it has been shown that a better form of cooperation, for instance in the form of sharing collective skills and expertise (Wilkinson, 2005), creating greater access to resources and the possibility of knowledge transfer (Ylitalo et al., 2005), can have a positive influence on project performance. In construction, where there are often complex market forces and costly projects that are of great importance to the client, implementing a partnership can be beneficial (Meng, 2013). One of the best-known researchers of partnerships is Eriksson, he established the most comprehensive definition of partnerships around the year 2010. In it, he emphasises the cooperative nature of this form of strategic collaboration using collaborative tools such as developing joint objectives and introducing collaborative contractual clauses manifesting relational norms and incentives. In addition, he mentioned an increased focus on contractors' self-control.

Subsequently, a partnership should be defined with specific sustainable objectives. In recent years, there has been an increased interest in making construction more sustainable, partly because of the Dutch government's nitrogen policy. Several parties including Mackey and Sisodia (2013) indicate that firms should invest more in the production of goods and services that contribute to society at a higher level. It is therefore important that firms align their main activities with the needs of society (Valbuena-Hernandez & Ortiz-de-Mandojana, 2021). To take an example from the offshore energy sector, which this thesis will focus on later, building a wind farm is a sustainable action at the highest level but the way it is built (with what materials, transport and quality of human rights) can

also be sustainable. To define sustainability, the Sustainable Development Goals drawn up by the UN are utilised here. These describe 17 goals that contribute to a more sustainable future in terms of climate, economy and society. The feature of a partnership with sustainable goals is that the client and partners examine together what is feasible in terms of sustainability within a programme or within a specific project. Here, attention is given to process elements beyond the legal contract specification such as engaging in sustainable practices such as honest and open discussions and communication, shared motivation (in the form of mutual trust and understanding and shared commitment) and the capacity for joint action (Emerson et al., 2011). Commitment to common sustainability goals (Bygballe et al., 2010) and engaging in discussions on sustainability goals (Spraul & Thaler, 2019) are key.

Overall, partnerships with sustainable goals require a more comprehensive and forward thinking approach compared to normal partnerships, as they aim to address complex environmental, social, and economic issues while creating value for all stakeholders involved. The specific themes that distinguish partnerships with sustainable goals from normal partnerships are the emphasis they have on environmental and social impact, the long-term orientation by focusing on creating enduring value, integration of sustainability criteria that may involve setting and monitoring specific targets and innovation and adaptation in the form of exploring new technologies and practices to achieve sustainability targets.

**Research question 2 –** How are partnerships with sustainable objectives set up before contract close?

The start-up process of a partnership can be roughly divided into four phases: the initiation phase, the tender phase, the contract phase and the concretisation phase. When a partnership with sustainable objectives is chosen, this means that the client foresees more drivers than barriers for this form of cooperation after an assessment has been made of the intended sustainable objectives, their feasibility and the suitability of the programme or project for a partnership approach (possibly in combination with a framework agreement). The client may be a governmental body or a public client that wishes to work with contractors as partners on a long-term basis. To find these potential partners, a tender must be issued. The Procurement Act of 2012 requires projects above a certain threshold to be tendered at European or national level to give every suitable candidate a fair chance to win the bid. The procurement process otherwise looks fairly standard and consists of a publication phase, a selection phase and an award phase.

In partnerships with sustainable objectives, much attention is generally paid to the selection criteria: these set out the minimum requirements a candidate must meet. These include the non-negotiable sustainability requirements that every candidate must meet as a minimum. Finally, the award criteria are looked at: when choosing the bidder with the most economically advantageous tender, sub-criteria must be formulated here. Tenderers can then earn a fictional discount on their bid as they plan to be more sustainable. Determining that fictional discount can be done using the Environmental Cost Indicator (ECI) method or the $CO_2$-Prestatieladder.

Partnerships often involve long-term strategic collaborations where multiple projects are worked on. It is therefore not unusual to use framework agreements (Meng (2013); Ambrose et al. (2010); Naoum (2003)). When an agreement is made with several partners, not all conditions are usually fully defined yet; this is done in the specific contract agreements. This makes it suitable for partnerships with sustainable objectives, because the sustainability requirements can be increased per project.

Finally, the partnership has to be shaped and matters such as joint ambitions, respecting each other's interests in terms of sustainability and developing a strong relationship can be discussed. The study by Kaats & Opheij (2021) indicates that these issues are essential when setting up a partnership for success

in later stages. At programme level, it is important to identify to what extent specific objectives are achieved or what the performance is in terms of overall objectives (Hlyal et al., 2015).

**Research question 3 –** How are partnerships with sustainable objectives set up before contract close in the offshore energy sector practice?

This sub-question was investigated by emloying an empirical study as described in **Chapter 3**. It was found that setting up a partnership in the offshore energy sector is roughly the same as is described in the literature (sub-question 2). Therefore, the research placed more emphasis on what the characteristics of this sector are and how this affects how decisions are made in terms of sustainability. The research thus complements the somewhat more general knowledge about partnerships with sustainable objectives in the literature review.

What is noticeable first of all is that the offshore energy sector is still in transition towards sustainability. As a result, the market is not yet equipped to deal with sustainability issues on a large scale. In addition, the market is under great pressure for both clients and contractors: there is a lot of work, so clients (TSOs) from all over the world have to compete for contractors to do the work and contractors themselves have to make tactical choices to allocate their time as efficiently as possible. So, as a TSO with sustainability ambitions, one can't be too stringent if one wants to be able to meet the most important requirement: attract contractors and get the work done and operational as soon as possible. A partnership with sustainability objectives is easily perceived as expensive and can therefore be less attractive to contractors. So it can be seen that these external environmental factors have a significant influence on the level of ambition a client can implement in the initiative phase of a partnership. Achieving more ambitious sustainability goals therefore requires a competitive market.

Something that is done in the offshore energy sector but is not yet found in the literature on partnerships with sustainability objectives is the concept of 'roadmapping'. Especially when framework agreements are used, this can deliver a lot in terms of sustainability. By using roadmapping, not only the joint ambitions become clearer, but also a 20-year target can be translated into feasible steps, perfect for a sector in transition like this one. Instead of using the ECI method in the tender phase (where calculating a fictional discount makes no sense due to the lack of competition), it is used to make sustainability measurable for each project in the programme and thus to focus on the points that can be made more sustainable in the next project. This is utilised to steer towards continuous improvement.

**Research question 4 –** What steps should be taken to start up a partnership prioritizing sustainable objectives and what challenges can be identified?

To answer this final research question, the critical steps necessary for initiating partnerships that prioritize sustainable objectives within the offshore energy sector are addressed. Drawing from the insights gathered through a comprehensive discourse analysis, it is identified what the key actions that stakeholders must take are to ensure that these partnerships are both effective and resilient. These key actions are linked to the following themes: fear of the unknown, navigating a narrow market with limited competition, and difficulties in adopting a partnership-oriented approach. In developing the steps to be taken, the drivers and barriers that occur in practice have been taken into account. The steps are put together in such a way that it identifies and picks up the challenges that could potentially occur during or prevent them altogether. The focus was primarily on the action points that apply specifically to a partnership with sustainable objectives and differ from the action points of a 'normal' partnership.

As the empirical study showed, external factors have a major influence on which actions are most appropriate for a specific situation. This should therefore be taken into account when following this roadmap. By understanding these steps and challenges, stakeholders can better prepare for and overcome the obstacles to achieving their sustainability goals.

**Initiation phase**

1. Have high expectations, set the bar high and be ambitious when you want to distinguish yourself in the market by becoming the frontrunner in the transition to more sustainable construction. Be aware of the fact that working with likeminded companies or consortia can help drive market change, accelerate making industry-wide improvements and help develop the new standards for sustainability. Do internal research to see if there is support for this ambitious mission and start setting up key ambitions for the organisation.
2. Before approaching the market make sure to do market research. Be aware of the imbalance between supply and demand in the offshore energy sector. To be attractive for contractors and consortia one has to distinguish themselves from the competition. The power position of the suppliers can cause price increases that are difficult to predict.
3. Discuss internally what kind of collaboration fits best with the goals you want to achieve. In general, a partnership is suited when one is dealing with complex environmental and social problems. This is due to the collaborative nature of this collaboration form and the specific characteristics like the opportunities for joint action, risk sharing and innovation. Commitment to the chosen form of cooperation is crucial to effectively achieving the intended goals.
4. Reach out to stakeholders to form a strong constituency for your sustainability plans. These involve potential partners, NGO's, community groups, users (windfarm owners for example) and policy makers. Especially the political climate can create a high level of uncertainty for you as client, as well as for your future partners so having a short line of communication with policy makers will always be beneficial.
5. When sustainable building is not the common practice in your organisation yet, it is advisable to hire experts/advisors in this field to help with the negotiations, choosing the most suitable partners and changing the internal organisational culture. Make sure that this person or these persons are involved in the process as soon as the initiation phase starts. Participation of senior management is highly encouraged so that all employees get a sense that sustainability will indeed become an important theme within the organisation.
6. When you chose to let an independent organisation make a preliminary design, make sure that there remains enough space for future partners to implement innovate ideas based on your shared sustainable ambitions. This is also the moment where you decide the balance between construction time, standardisation and implementation of sustainable options.
7. Start with spreading the word to potential partners that not participating in the transition of the offshore energy sector towards sustainability will result in one jeopardising future work while participating will provide the opposite: the gain of competitive advantage in future projects.

**Tender phase**

1. Include in the tender documents why you are attractive as a client. This can be realised by assuring that much-needed resources such as personnel will be attracted when one invests in sustainable projects. On top of that, inhouse knowledge will provide all partners with a competitive advantage now and in the future. Combining projects in a larger program and offering a long-term strategic partnership, in the form of a framework contract, will also attract more contractors since it provides them with financial security.

2. Be ambitious when writing your sustainability goals in the tender documents. However, take into account the imbalance of the market situation. Setting too high demands can put off potential partners.
3. Communicate to potential partners how your organisation is planning on working on the common concerns that contractors and consortia might have. Examples of these concerns include insecurities about potential increases of costs and change in workload, insecurities about innovation due to the lack of case studies and the fear of losing competitive advantage as a company when it is expected that they have to work and share knowledge with competitors.
4. Finally, be transparent about what is negotiable and what is not. This is already reflected in the selection criteria and award criteria but due to the narrow market situation it is advisable to have a more in-depth conversation about the negotiables with potential partners.

**Contract phase**

1. In the offshore energy sector, use of FIDIC contracts is common. These type of contracts already pay attention to protecting workers and the physical environment but is still not quite extensive in this field. Therefore it is advised that a tailored annex is added to the contract that provides more clearance on these matters. This annex also states the tailored long-term goals for sustainability.
2. Agreeing at a price at front when executing a framework agreement is difficult. Discuss therefore with the partners what level of standardisation is needed to make a first cost estimation.
3. Add a sustainability roadmap to the annex in the contract that describes what your organisation wishes to achieve to ensure that sustainable goals are aligned and transparent. Communicate how sustainable practices are measured, for example by using the ECI methodology. An example of a sustainability roadmap is found in **Chapter 3** of this thesis.
4. Reserve budget for the realisation of sustainable initiatives that are developed during the course of the partnership. Be transparent about how, when and on what conditions partners can claim (part of) this budget.

**Concretisation phase**

1. Organise shared meetings between you as a client and contractors/consortia to ensure that communication and cooperation between relevant parties is maintained. The power position of contractors reinforce the tendency to stick to familiar and safe practices, slowing down innovation and sustainability. Take away the bias/fear within your organisation that contractors have no intrinsic motivation for sustainability and only want to make as much money as possible by doing the cheap, easy things. Focus on developing a culture of mutual support, shared motivation, capacity for joint action and fair and open discussions.
2. Organise expert sessions to motivate your partners to be actively involved in the decision making and encouraging innovation. Keep in mind that partners are also mutual competitors and will not easily share their ideas if they cannot be assured to some extent that these ideas will be protected. Again, this has to do with the distinctiveness of these partners in the market.
3. Use the created roadmap to communicate the sustainable goals agreed upon and how they can be achieved by using continuous improvement. To ensure this continuous improvement regular updating is required.
4. Create insight in cultural differences to identify social problems.



5. Set up small pilots (with the budget as specified in the tender) to accommodate the lack of case studies. Report successes and celebrate them to keep ensuring commitment.
6. Create insight in the supply chain to improve the quality of the work and be able to buy less, do less maintenance and guarantee a longer life span. Be actively involved in the development of a more sustainable supply chain both organisationally and economically.

## 6.2 Recommendations for TenneT

The empirical study showed that the 2GW programme has already faced several obstacles in terms of sustainability. These include fears about higher costs and longer construction phases for sustainable projects, the difficulties involved in the tight market in the offshore energy sector and the way sustainability and partnerships are handled internally within TenneT itself. In the discussion, some possible solutions have already been put forward for this, but when looking at TenneT's specific situation, the following is recommended to tackle at this stage of the programme:

**Commitment**

Having a CSR department within the company is a good first step, but to obtain full commitment for implementing sustainability at work among all employees, it is desirable that company leadership is also visibly involved in sustainability efforts, demonstrating commitment from the top. In addition, 'sustainable construction' should be integrated into the company's core values so that it becomes part of the company culture. This way, employees get a better idea of how to incorporate sustainability in their everyday practices.

For TenneT, fully investing in and committing to the partnership approach is crucial for achieving long-term sustainability and operational success. By embracing true partnerships, rather than merely adhering to framework agreements, the company can foster deeper collaboration, innovation, and mutual benefits with its partners. Ultimately, a genuine commitment to the partnership model is essential for driving impactful and lasting environmental and social outcomes.

**Support and engagement**

The subsequent phase starts by training staff to ensure that they understand what sustainability means within TenneT as an organisation, what the objectives are and how one can implement the sustainability practices agreed in the partnership. It is also advised to involve a wider range of stakeholders such as suppliers, wind farm owners and community/environmental groups to build a larger support group for the sustainability initiatives and avoid surprises.

It is suggested to engage with policy makers. The political landscape is a factor that creates a lot of uncertainty for both TenneT as a client and its partners. Being well informed about developments in this landscape and assuming an advisory role can have a positive influence on the development of legislation that benefits TenneT.

**Maximize impact**

To maximise sustainable impact, it is recommended that, in addition to the annual update of the CSR roadmap, a channel is set up where stakeholders can quickly and easily post feedback and suggestions so they can be addressed more frequently. The current expert sessions are not yet delivering the desired results, which is mainly due to fear from contractors and consortia to share their state-of-the-art technologies with competitors because they fear losing their distinctiveness for future projects. The CSR team will have to pay attention to finding a more appropriate format for these sessions so that it does not detract from the goal: working together on progress in sustainability. In addition, it also helps to increase the transparency of the CSR roadmap so partners know better what is expected of them in

a predefined timeframe. On top of that, it is recommended to share successful sustainability principles and case studies with stakeholders so that the positive impact of the partnership can be showcased. This will increase commitment.

If TenneT fails to address the obstacles in establishing partnerships with sustainable goals, several negative outcomes are likely to occur, jeopardizing both their immediate and long-term objectives. Having a more lay-back attitude can cause sustainability progress to stagnate. As a result, targets such as reducing $CO_2$ emissions, using and buying sustainable materials efficiently and promoting social responsibility will not be met. It will also maintain the level of social impact, which can damage TenneT's reputation and operational viability. In addition, it may eventually lead to the loss of competitive advantage when competitors that pay more attention to these issues gain a better position in the market and attract more clients and investors. Stakeholders such as employees, customers and shareholders too expect transparency and a level of commitment to sustainability. When people are disappointed in these expectations, trust and commitment will most likely decrease.

## 6.3 Recommendations for similar large, government-affiliated companies

There are a number of companies in the Netherlands that are broadly similar in size and operation to TenneT. These single-handedly dominate a specific market and are often partially or fully under the control of the government. Examples of such companies in the Netherlands are Nationale Spoorwegen (NS), Prorail, Gasunie and the Port of Rotterdam Authority. The transition towards sustainability also affects the sectors these companies work in and they are as well used to having to carry out large (series of) projects. As a result, they may face some of the same problems that TenneT has had to overcome. A number of recommendations are listed below and are referred to by the obstacles that were established to be present according to the discourse analysis.

**Fear of the unknown**

It is important to set a clear and shared ambition for sustainability which ensures that the vision is consistent with both the company's own goals and government policies. In addition, staff should be trained to understand and support the relevance and benefits of sustainable practices. As with TenneT, it is recommended to share successes to get more support from employees and stakeholders who need to be persuaded to start new practices.

**Narrow market with little competition**

As a client, it is essential to stay in regular contact with government agencies to ensure financial incentives and policy support. This is particularly important for sectors with heavy regulation and public interest. In addition, it is wise to think of ways to support collaborative innovation as this increases the likelihood that parties will join because this way they can share both risks and rewards. However, care must be taken here to make sure the partners contain their distinctive capabilities.

**Difficulty with complying to the partnership approach**

The application of framework agreements can be a means to bind one or more parties to you as a client for a longer period of time and to raise sustainability standards over time. To present this transparently, one must make sustainability efforts concrete, for instance by using the ECI method. By being transparent about this, you can gain the trust of the partner(s) and benchmarking becomes possible. The subsequent move is to use this data to work on continuous improvement, as TenneT is now doing with the CSR roadmap. This keeps one's partners both innovative, adaptable and capable of meeting sustainability challenges. Setting up a special department responsible for implementing and measuring sustainability is positive, but is somewhat akin to



greenwashing if no further effort is made within the company to include sustainability as a core value in the corporate structure.

## 6.4 Recommendations for further research

The case study in this research is currently still in the start-up phase. It will be quite interesting to research the same case again in a few years' time and discover whether this way of setting up a partnership with sustainable objectives also provides the desired results in the implementation phase. This depends not only on whether the approach from TenneT itself was beneficial but also what changes have occurred in the environment in the meantime. Further research is also needed to explore the cultural dynamics within multinational companies (like TenneT). Future studies could examine the specific challenges and opportunities presented by different cultural contexts and how they impact the implementation of sustainable goals.

In addition, one can investigate the perspective of the contractor or consortia when setting up partnerships with sustainable objectives. What objectives, drivers and barriers do they have in common with clients or which not. Gaining insight into how contractors expect this sector to change in the coming years can help clients to anticipate.

Furthermore, it is attractive to research how partnerships with sustainable objectives are set up in other domains of the construction sector. Advice currently prescribed in the literature is very general and not directly applicable to every industry. Whereas the start-up process of these types of partnerships will be broadly the same for several sectors in construction, it is now known that factors such as the dynamics of the market, the background of the client (government-owned or public client) and the size of the programme have a major impact on what decisions are made or can be made on sustainability.

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# 8 Appendixes

## Appendix A : Interview protocol

**Introduction**

- **Who am I, what am I studying**

My name is Selma, I am 25 years old and this year I am graduating on the subject of partnerships and sustainability and specifically the question: How can partnerships in the construction industry enable achieving sustainable objectives? I am doing this for the master CME (Construction Management and Engineering) at TuDelft, in addition to which I am doing a graduation internship at the company Aratis. A number of your colleagues work for TenneT through Aratis and it is therefore through them that I became interested in the 2GW programme.

- **Why is this person here**

This then brings me straight to why we are sitting here today. You are through the department .... Involved in the 2GW project or working with similar projects. Now that the 2GW programme has been launched and they are in the phase where a lot is still open and needs to be determined in terms of integrating sustainability, this is the perfect time for me to gain insight into how TenneT is tackling this.

- **What I will do with your information**

As already communicated over the mail, the interview will be recorded and later transcribed and anonymised. After this, it will be sent back to you so that you can possibly make further comments. Subsequently, anonymised quotes may be used in the thesis.

- **Do you have another meeting after this?**

[Make sure to finish on time]

- **Explanation of the type of questions and the guiding themes of the interview**

During this interview, you will be given a set of open-ended questions. Please answer these mainly using your experience at the 2GW programme or previous similar projects. We will walk together through the start-up phase of a partnership with sustainable objectives up to and including when the roadmaps are completed by the partners.

**Questions**

I would like to spend the next 30-40 minutes asking you some questions about partnerships with sustainable objectives, these are some general questions and some questions about the application in the 2GW project.

Before I start asking you about your views on partnerships with sustainable objectives, I want to start at the beginning:

1. According to the literature, there is a shift in the civil field towards more sustainable construction processes, is this something you recognise in the offshore wind sector and how do you notice it?
2. What do you understand by a partnership?
3. What do you understand by sustainability within TenneT?

I understand there is tension between client and contractors in offshore because of the small market supply, contractors are said to have a lot of power because they are aware that their expertise cannot be missed and there is little competition.

4. Can you confirm this and what concerns does this raise for the client should this indeed be the case?

The 2GW programme involves three major series of projects: the converter station at sea, the DC cables and the land stations. I would like to focus on the first two because this really focuses on offshore. With this kind of series of projects, it is not unusual to award the contracts in a framework (and thus offer a kind of packages with several projects to the same contractor). This is also what TenneT has done in this case. So this creates a desire for long-term cooperation but there is also a desire to give sustainability a bigger role in this programme. This leads me to the following questions:

5. Which drivers are most important, or add the most value to your project, when choosing a partnership with sustainable goals?
6. What are the most common barriers to overcome when considering a partnerships with sustainable goals?

Once the choice has been made to apply a partnership with sustainable goals and the barriers seem manageable, the strategy to prepare for the tender phase should be considered. From what I understand, TenneT's key ambitions are derived from the Triple Bottom Line (people, planet, profit) and the UN SDGs (Climate, Nature, Circular, human rights).

7. How are these key ambitions reflected in the tender, do you notice a difference with projects where this is not included?
8. Tennet uses an ECI (environmental cost indicator) (EXPLANATION) to give a fictional discount on the bid, in the aforementioned area of tension with offshore contractors, how do you ensure that they go the ‘extra mile’ in terms of sustainability?

My final question relates to this sustainability roadmap. TenneT has made funds available for the necessary studies and investments that may have to be made to achieve sustainability targets. The hope is that the combination of long-term cooperation through framework contracts and these funds for sustainability will lower the ECI value for each project and thus the projects will be increasingly sustainable.

9. Does this hypothesis fit with your way of thinking and do you expect this development in sustainable construction to continue even when additional pressure will be put on the delivery of the projects by, for example, the government or society?

**Closing remarks**

These were my questions about the 2GW programme, are there any things you would like to add or is there any important topic I missed?

## Appendix B- Developing an objective from a strategic perspective

Medne and Lapiņa (2019) defined the connection between the organizational process, the key performance indicators and the organization's strategy and collected this data into a figure. When starting with a process, data needs to be collected about accurate measurements and for the indicators that are set, which in their turn lead to the indicators for the KPIs. After that, the KPIs must be formulated and collected into an objective (or objectives) for the Partnership in general. The final interpretation of these objectives are translated into the organization's strategy. An objective has to indicate a benchmark and promote innovative ideas. When the strategy is created, one can focus on the organizational performance, future thinking, continuous development, change management and stakeholder management. And therefore also: the alignment of partners. This process is summarized in **Figure 18**.

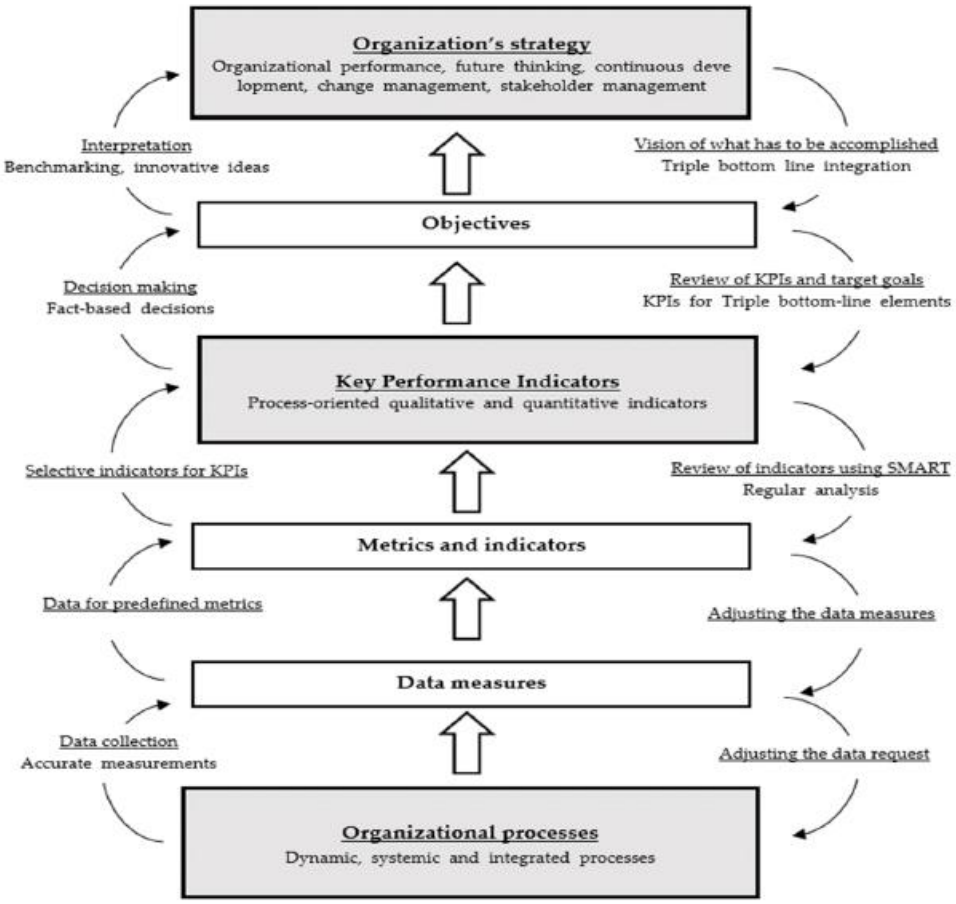


*Figure 18 The linkage between the organization's strategy, key performance indicators (KPIs) and processes (Medne and Lapiņa,2019)*

## Appendix C- TSO and LPO

The Transition System Operator (TSO) of the Netherlands is the company Tennet. As described in the introduction, the Dutch government is 100% shareholder of the Dutch branch of Tennet. However, Tennet also operates in Germany. The Netherlands and Germany have a combined offshore LPO (Large Projects Offshore) and a separate onshore organisation. The asset management department determines what projects need to be executed and assigns these tasks to the LPO. When finished, the LPO hands over the project to the grid field operator.

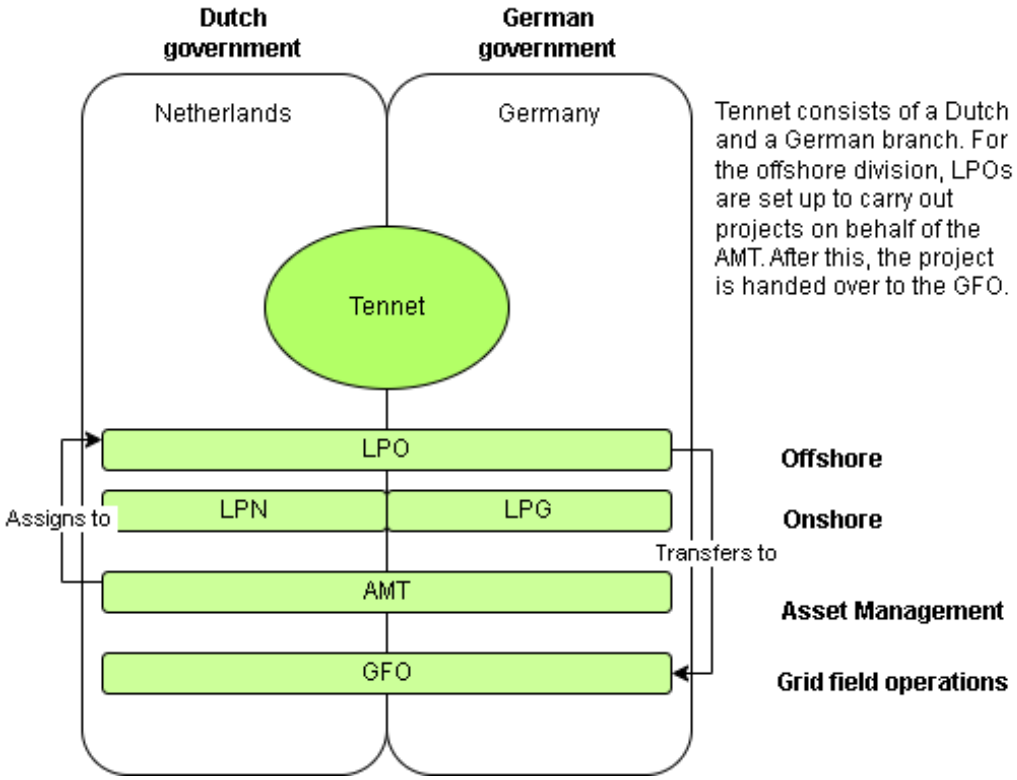


*Figure 19 Internal structure of Tennet (own work)*

## Appendix D- Difference between FIDIC yellow book and silver book

In FIDIC yellow book the Contractor takes total responsibility for the design and execution of the project, with little involvement of the Employer (*Conditions of Contract for EPC/Turnkey Contracts*, 1999). This is one of the points where the Silver Book differs from the Yellow Book, which is specifically for Design and Build projects. In Yellow Book the Employer appoints an Engineer, in Silver Book this role does not exist. In **Figure 20**, the relation between the contract price and the risk for the employer are set out so one can see the difference between the two books. Since the Tennet 2GW project is not 100% a Silver Book contract, the roles for the Yellow Book will still be explained.

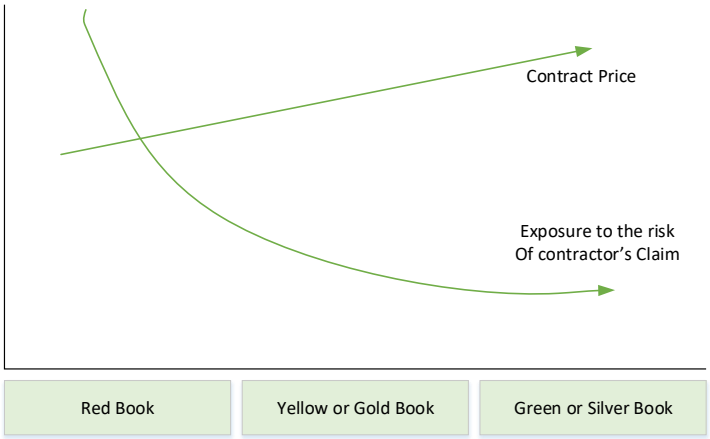


*Figure 20 Contract Price vs Risk (employers perspective) (by: Rozendal & Stoelinga, (2023))*

In Yellow book, there are three roles that can be distinguished: the employer, the contractor and the engineer. The employer is mentioned in chapter 2 of the general conditions of the contract. Here it is stated that he (the contract uses one gender to represent all genders) shall give access to the site within the time stated in the Appendix to Tender and in the manner stated in the Employers Requirements (SC2.1 Right of Access to the Site). The Employers Requirements refers to the document that states the additions and modifications in accordance with the contract. (SC1.1.1.5) Also, the employer is responsible for the Contract Agreement that shall be made after 28 days the contractor received the Letter of Acceptance, unless there is agreed otherwise (SC1.6 Contract Agreement). Other tasks of the employer are the responsibility of the payment as stated in clause 14 , the entitlement of claims (SC2.5 Employer's Claims) and Disputes (Clause 20 Claims, Disputes and Arbitration).

The Engineer is employed and appointed by the Employer and shall carry out the duties assigned to him in the contract. Even though the Engineer gets paid by the Employer, he must be impartial in the communication and when making decisions that affect either or both the Employer and the Contractor. The Employer and the Engineer usually have a monthly progress meeting where there is room for, for example, scope change requests. He also is responsible for the justification for the payment contractor.

The contractor shall design, execute and complete the works in accordance with the contract, and shall remedy any defects in the works (SC4.1 Contractor's general obligations). He will also be responsible for the Performance Security, as will be explained later on (SC4.2 Performance Security). The Contractor can hire subcontractors, but shall not subcontract the whole of the works (SC4.4 Subcontractors). The Engineer is the first point of contact for the Contractor. They have progress meeting in which they discuss the contract, exchange information and certificates. They can also discuss possible variations and claims the Contractor might suggests. The Contractor almost usually only has contact with the

Employer in cases of disputes. But in the beginning they can also communicate about the contract agreement, access to the site, payment and claims of the Employer.

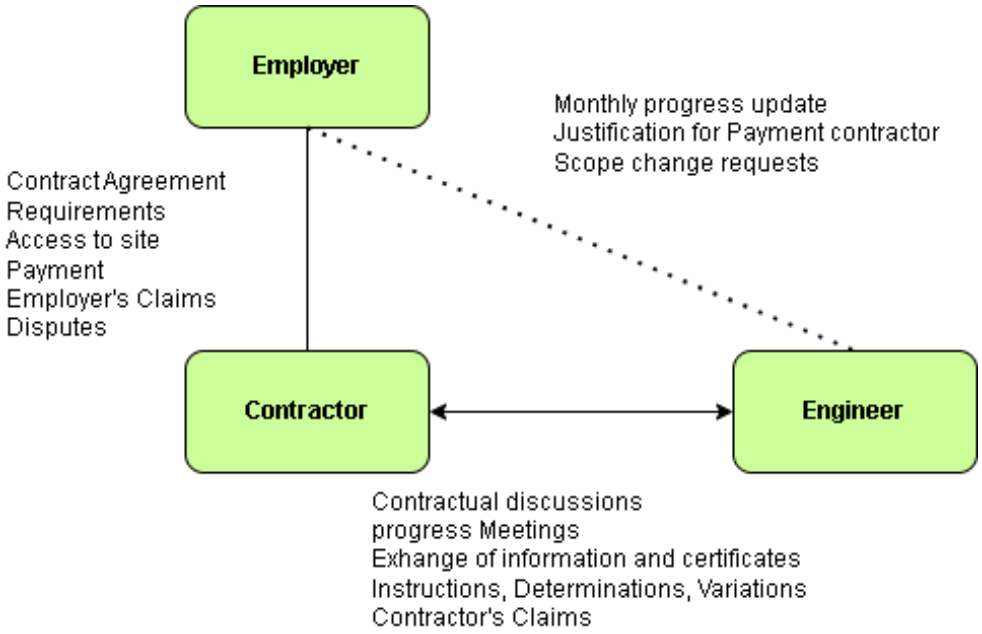


*Figure 21 Roles (Red and Yellow book) (Rozendal and Stoelinga (2023))*