Intrapreneurship: Pre-Seed Selection Criteria for Internal Corporate Accelerators

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Intrapreneurship: Pre-Seed Selection Criteria for Internal Corporate Accelerators

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Acknowledgments

This report presents the results of my Master Thesis research in completion of the Master 'Management of Technology' at the faculty of Technology, Policy, and Management (TPM). The topic of the Master Thesis was selected due to my interest in Corporate Intrapreneurship and aligns with my Master Specialisation in 'Emerging Technology-based Innovation & Entrepreneurship'.

The Master Thesis research is performed at TenneT TSO, a European Electricity Transmission System Operator (TSO), within the intrapreneurship program TenneT POWERLab. With my research, I aim to add value to the intrapreneurship program and thus innovation efforts of TenneT.

I would like to thank TenneT to allow me to perform my Thesis Research within their new intrapreneurship program. In particular, Alexander Visser my external supervisor that supported me throughout a difficult period of working at home with limited face-to-face meetings. Also, I would like to thank the developers of the TenneT POWERLab and other colleagues from the department Strategy & Partnerships that gave valuable insights into the research. Lastly, I would like to thank Zenlin Roosenboom-Kwee and Victor Scholten for their supervision, excellent feedback, and support in writing my thesis.

Executive summary

Most research is done in the field of External Corporate Accelerators (ECA), where external ideas from students, start-ups e.g., enter the accelerator program of a corporate. Limited research is done in the field of Internal Corporate Accelerator (ICA) where ideas from their own employees can enter the accelerator program. Additionally, accelerators are mostly implemented in highly competitive environments. However, accelerator programs are used more and more in less competitive environments like government-owned liability companies because external pressure requires them to change their ways of working more rapidly. This research addresses this gap by studying an accelerator program of the government-owned liability company TenneT TSO that operates in the energy utility sector. TenneT wants to innovate its core business and ways of working with the TenneT POWERLab, which is an ICA where employees can enter the acceleration program. The main goal of the program is to create an ecosystem that enables cultural and creative change within the organization. Hence, the tool ICA in this context is not used to get a competitive advantage by innovation as for most applications that are described in the literature. The research objective is to *develop pre-seed selection criteria for Internal Corporate Accelerators (ICAs) of government-owned liability companies.*

A conceptual framework with pre-seed selection criteria is made from the accelerator literature and startup literature. Additionally, the research introduced three new pre-seed selection criteria that should be included in the research in the context of ICAs of government-owned liability companies, like the POWERLab. These are "Strategic Fit", "Investment Cost", and "Validation efforts". This resulted in a list of 20 pre-seed selection criteria. Accordingly, the pre-seed selection criteria are studied on their relevance and compared to the literature.

Findings are that 9 out of the 20 pre-seed selection criteria are not deemed relevant for TenneT TSO. Examples of not relevant criteria are "Sustainable Advantage", "Timing of Entry" and "Lead Time". This can be explained by the non-competitive nature of government-owned liability companies who follow market needs instead of being a frontrunner of innovation. Highly relevant criteria are "Incoming Team's Willingness to Listen & Adapt", "Idea Solves a Real Problem" and "Investment Cost". These pre-seed selection criteria indicate the importance of the team and the quality of the idea to solve real problems in the organization, leading to the innovation of the core business.

Implications of this research are that ECAs in competitive environments have similarities with ICAs in government-owned liability companies. Both ECAs and ICAs have an accelerator with stage-gates and focus on mentorship. Minor differences are in the duration and intensity of the programs. The pre-seed selection criteria can be used as a starting point for other government-owned liability companies in the energy sector that want to proceed with an ICA that boosts employee development and organizational efficiency to cope with new challenges like renewables. However, future research should determine if ICAs are a good tool for government-owned liability companies to innovate their core business.

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List of Abbreviations

Table 1: List of Abbreviations

BDP	Business Development
CA	Corporate Accelerator
CE	Corporate Entrepreneurship
CV	Corporate Venturing
DFD	Digital and Flex Development
ECA	External Corporate Accelerator
ICA	Internal Corporate Accelerator
MVP	Minimum Viable Product
SPOC	Single Point Of Contact
SQ	Sub Question
STP	Strategy & Partnerships
STR	Strategy (department)
TSO	Transmission System Operators

1 Introduction

In section 1.1 the theoretical context of the research and domain of the literature is introduced. Next, the problem definition is given in section 1.2, including the practical problem for TenneT. Furthermore, section 1.3 states the Research Objective. The Research Setting is explained in section 1.4, including an overview of innovation at TenneT. Consequently, in section 0 the Research Questions are introduced. Lastly, in section 1.6 the scientific contributions are discussed.

1.1 Theoretical Context

Today's markets change rapidly because of globalization and digitalization, challenging large companies due to their path-dependency and low level of agility (Ganguly, Nilchiani, & Farr, 2009). In contrast, startups are very agile and are more successful in these volatile markets, even though they have limited resources compared to large corporations (Weiblen & Chesbrough, 2015). Therefore, corporations are trying to combine entrepreneurial activity from startups with corporate abilities to be more successful in the volatile market. In literature, this falls in the domain of intrapreneurship, also known as Corporate Entrepreneurship (CE), which refers to developing new ventures within existing firms, exploiting new opportunities, and creating economic value (Pinchot, 1985). There are multiple models to implement startup structures into corporations, each with its own characteristics and challenges to maintain a good balance between exploration and exploitation (Weiblen & Chesbrough, 2015). One of the models to stimulate intrapreneurship is a Corporate Accelerator (CA), aiming to bridge the gap between corporations and startups (Kohler, 2016). CAs can be described as:

" [...] company-supported programs of limited duration that support cohorts of startups during the new venture process via mentoring, education, and company-specific resources." (Kohler, 2016, p. 348)

CAs start with an open application process where startups pitch their idea (Kohler, 2016). A rigorous, multi-staged selection process is used to select the most promising startups by a selection committee (Pauwels, Clarysse, Wright, & Van Hove, 2016). Then, the selected startups have the opportunity to develop their idea in 3 to 6 months (Cohen, 2013). In these months startups go through different stages of development and in each stage selection criteria are used to assess if the startup is ready for the next stage (Yin & Luo, 2018). When the startup is successful, the focus shifts to revenue growth.

1.2 Problem Definition

The selection criteria to select an idea startup are crucial for the success of accelerator programs, as 90% of the startups fail (Patel, 2015). Assessing ideas and startups is the most difficult in the very early stage of their development, called the pre-seed phase (Salamzadeh & Kawamorita Kesim, 2015). However, this first step of idea selection is of great importance to increase the success rate of startups. Also, the selection criteria used to assess if a startup is ready for the next stage needs careful consideration. These selection criteria differ across industries, e.g. Venture Capital, and types of accelerators (Pauwels, Clarysse, Wright, & Van Hove, 2016).

Most research is done in the field of External Corporate Accelerators (ECA), where external ideas from students, start-ups e.g., enter the accelerator program of a corporate. Limited research is done in the field of Internal Corporate Accelerator (ICA) where ideas from their own employees can enter the accelerator program. Additionally, accelerators are mostly implemented in highly competitive environments. However, accelerator programs are used more and more in less competitive environments like government-owned liability companies because external pressure requires them to change their ways of working and thus require more innovation. External pressure can come from the government, the society at large or other stakeholders who for example require new practices for digitalization and renewable energy. This research addresses this gap by studying an accelerator program of the government-owned liability company TenneT TSO that operates in the energy utility sector and is owned by the Dutch state.

1.3 Research Objective

The research objective is to *develop pre-seed selection criteria for Internal Corporate Accelerators (ICAs) of government-owned liability companies.*

1.4 Research Settings

The research is performed at TenneT Holding B.V., an electricity system operator in the Netherlands and Germany with 5,700 employees (TenneT TSO, 2020). The company is responsible for designing, building, and maintaining the high-voltage grid. Its mission is to ensure a reliable and uninterrupted supply of electricity in our high-voltage grid for 42 million people (TenneT TSO, 2021). TenneT is a government-owned liability company and falls under strict regulation. Maintaining the security of electricity demand is their core responsibility. In the next decades, TenneT should move the energy transition forward by adapting the grid for renewable energy which requires big changes and new technical challenges in the high-voltage grid. Also, the organization and their employees need to change their old working habits by creating new ideas and ways of working to cope with the challenges that renewables have on the high-voltage grid.

To support both the technical challenges and new ways of working TenneT is launching a new intrapreneurship program, the TenneT POWERLab. The TenneT POWERLab is an Internal Corporate Accelerator (ICA) where employees can enter the acceleration program with their idea and get support with accelerating it in a period of 9 months. The main goal of the program is to enable cultural and creative change within the organization. Additionally, new innovations and networks could be created that help TenneT shaping the future. The set-up of the program, orientation, and goals are explained in more detail in section 1.4.3.

The employees that apply their ideas for the TenneT POWERLab program need to be evaluated by a selection committee. This research does contribute to developing the pre-seed selection criteria that can be used for this early-stage idea evaluation. The context of the POWERLab in the organization and industry has an important role to define those pre-seed selection criteria.

1.4.1 Organogram

TenneT's organizational structure can be characterized as a functional structure where the company is structured by its key function (Ranson, Stewart, Hinings, & Greenwood, 1980). The full organigram of TenneT can be found and Appendix G. The Executive Board is responsible for the management of TenneT and supervises the general conduct of the company's business that needs to comply with strict regulations. Every employee has a single supervisor and works mostly with the same colleagues. Due to this employees rely on their manager to approve to work on new ideas and often this is not possible because an idea might not benefit the respective business unit. This is one of the reasons the POWERLab is steered directly from the board, as illustrated in Figure 1. The POWERLab is managed by a team with an entrepreneurial mindset without relying on business unit managers for approval. Secondly, placing the POWERLab under the direct supervision of the board also represents the need and urgency of an accelerator program that is supported company-wide. Lastly, the core of TenneT can be innovated from all perspectives from the organization without belonging to a dedicated business unit and collaborations beyond business units. In section 1.4.3 more information is given about innovating the core.
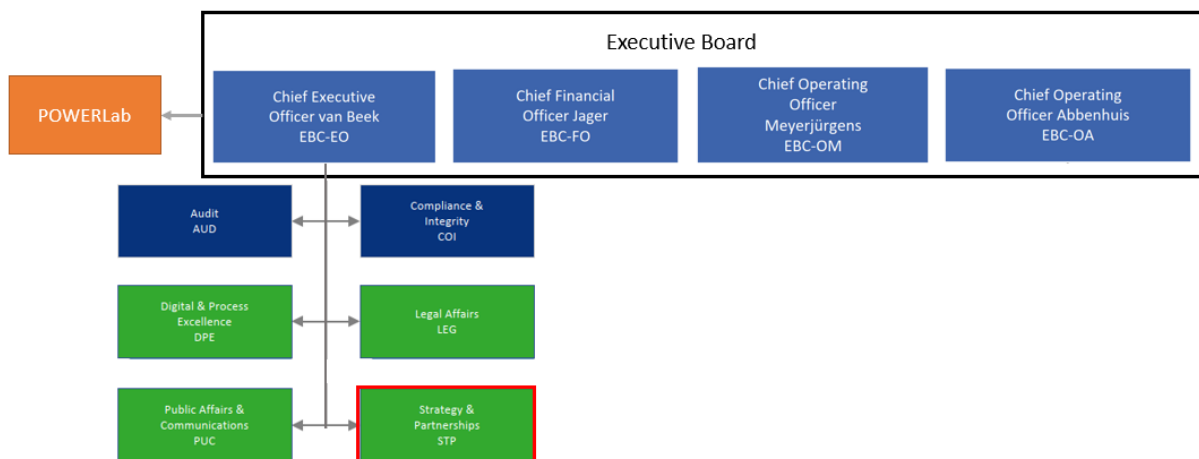
Figure 1: Simplified Organigram TenneT (including TenneT POWERLab)

1.4.2 Strategy of TenneT

Climate change is a thread and requires limiting global warming. Therefore, Europe committed, with the Climate Agreement in 2015, to being climate-neutral by 2050 which requires major changes and investments in all sectors. The energy transition to renewable energies plays a crucial part to achieve the goals of the Climate Agreement. TenneT wants to play a pioneering role in the transition by contributing to affordable, sustainable, and reliable European energy supply (TenneT TSO, 2020). The big climate ambitions in TenneT's investments come with new challenges for the next decades. The high voltage energy grid needs major adaptions to foresee future needs for electricity providers and end-users. The purpose of TenneT is: 'To connect everyone with a brighter energy future' (TenneT TSO, 2020).

The strategy of TenneT supports the changes that are required for the energy system today and tomorrow. The strategic goals of TenneT are described with four strategic pillars (TenneT TSO, 2020).

Energise our people and organization. Providing an inclusive and safe environment where people enjoy their work. Empowering, inspiring, and creating growth opportunities for employees so they can perform best and collaborating efficiently.

Secure supply today and tomorrow. Maintaining the grid to ensure reliability targets and operating the grid to its maximum capability. Designing solutions that ensure grid balance in the future while meeting social objectives and deliver grid projects as promised.

Drive the energy transition. By developing innovative instruments and fulfill a key role in the energy data world.

Safeguard our financial health. A regulatory framework is implemented to support the strategy and delivering a return that meets the expectations of capital providers. Additionally, raising external financing for projects.

The strategy should support to execute of the core tasks of TenneT (TenneT TSO, 2020):

- Ensure a secure and continuous supply of electricity.
- Provide Transmission services by transporting electricity from electricity producers to consumers by transporting electricity with the high voltage grid.
- Provide system services to balance supply and demand which is more and more important with the rise of renewable energy.
- Facilitating a smooth, liquid, and stable electricity market and support the energy transition to renewable energy.

The POWERLab has a strong connection with the strategy of TenneT and focuses mainly on the strategic pillar 'Energise our people and organization'. The program puts employees in the leading role to bring their idea forward and therefore empowering the employee and facilitating growth opportunities.

The POWERLab also enhances the strategic pillars 'Secure supply today and tomorrow' and 'Drive the energy transition' by accelerating the following goals (Developer TenneT POWERLab, 2021):

- From an asset to a data-driven company.
- From business as usual to doubling the output.
- From managing the present to shaping the future.

These goals support innovating the core tasks of TenneT that are required to meet TenneT's obligation to the regulators and the Paris Agreement.

1.4.3   TenneT POWERLab

The TenneT POWERLab has a strong connection with the strategy as mentioned in the previous chapter. The intrapreneurship program supports the innovation of the core business of TenneT and supports both the technical challenges and new ways of working within TenneT. The TenneT POWERLab is an

Internal Corporate Accelerator (ICA) where employees can enter the acceleration program with their idea and equip people with skills and external guidance and mentoring. The main goal of the program is to create an ecosystem that enables cultural and creative change within the organization with the benefit of innovation (Developer TenneT POWERLab, 2021). The POWERLab enables employees to solve existing problems in an entrepreneurial way by giving them responsibility, a non-bureaucratic environment, skills and opportunities, and a good network of internal and external experts. The POWERLab acts as an innovation broker between employees and higher management so that problems and solutions can come together.

The program combines innovation management, people development, new ways of working, and Delivery Capability Expansion (DiCE) as shown in Figure 2. Innovation management consists of early-stage and user-centric testing of ideas that results in proactive problem-solving. Accordingly, these ideas can flow to the existing Innovation Portfolio where the innovations are monitored and further developed. People development is achieved by action-oriented learning that enables employees to take ownership and a collaborative spirit. New ways of working are achieved by the operationalization of new work principles, methods, and tools. The DiCE of TenneT can develop because of the identification of new cases that are relevant to growth.

Figure 2: Intrapreneurship TenneT POWERLab context (TenneT POWERLab, 2021)

The results of the POWERLab can be new business development, new customer, development of high-level opportunities, and exploit radical innovation. (Developer TenneT POWERLab, 2021). Examples of benefits for business units are a rapid validation of ideas, access to networks of experts, a cost-effective way of working, and cross-functional teams with innovation coaches that enable and develop employees.

The TenneT POWERLab has a cycle of 12 months and employees can apply individually or in teams. The program consists of the following four phases, which are illustrated in Figure 3 and are explained in more detail below.

Phase 0: Engagement & Submission. In Phase 0, the POWERLab is actively promoted by digital channels like the POWERLab website, InTenneT, and workshops to get all employees engaged with the program. The focus of Phase 0 is to explore and exploit problem areas that deal with the core business of TenneT and new ways of working. To achieve this several activities are organized like workshops centered around problem thinking and networking with experts. Employees can continuously submit their idea via the POWERLab website throughout the year. Accordingly, each year ideas are selected to enter the acceleration program and continue to Phase 1. More details about the gates of the POWERLab can be found in the next subchapter.

Phase 1: Explore. In Phase 1, proof should be found that the problem exists, is big enough, and can be solved. Additionally, the business model should be 80% completed. The activities in this phase help to help to explore the problem like desk research and customer interviews. Support from the POWERLab consists of coaching to develop a business model that is required for this phase. Additionally, candidates are involved in networking activities to explore their problems. This is done with a format that consists of workshops, the so-called 3-day 'Innovation Camp'. After the camp, candidates need to pitch their ideas to the jury. The duration of Phase 1 is 3 months and after this phase, a new selection is made to continue to Phase 2.

Phase 2: Develop. In Phase 2, proof should be found that the solution solves the problem. The validation methods used are prototyping or experiments. The participants get support from venture architect coaches, technical experts, and networking activities. The duration of Phase 2 is 3 months and after this phase, participants can enter Phase 3 when their idea is proven.

Phase 3: Scale. In Phase 3, candidates scale their solution and implement it within TenneT. In this phase, a minimum viable product should be made and tests should be done among users. That way the business model can be validated and implementation within TenneT can start. The participants get support from venture architect coaches and technical experts. The duration of Phase 3 is 3 months and after this phase, the POWERLab program has ended.

After TenneT POWERLab. When innovations are not fully implemented or more testing is required the idea can go to one of the other Innovation Initiatives of TenneT. In chapter 4.2.4 these initiatives are explained in more detail.

Figure 3: TenneT POWERLab program phases (TenneT POWERLab, 2021)

1.4.3.2 Gates and pre-seed phase TenneT POWERLab

In the POWERLab ideas go through different stages and between the stages there are stage gates. At these stage gates, ideas are evaluated and a selection is made which ideas can go to the next phase. Theoretical background about stage gates can be found in paragraph 3.3.2. At each gate, selection criteria are used to assess the ideas, see Figure 4. The definitions used for the gates are explained in paragraph 4.1.2.

Gate 1: Initial screening. After the Engagement & Submission phase, there is an initial screening of the participants and their ideas based on the submission form. This submission form needs to be filled out by the candidates to apply for the program.

Gate 2: Final selection. The final selection takes place after the Explore phase because a better assessment can be made. This is since the problem exists, is big enough, and can be solved. Additionally, there is also a business plan which makes the assessment more tangible. All these aspects need to be pitched by the candidates in front of a jury after the 'Innovation Camp'.

Gate 3: Selection adjustment. After the Develop phase ideas can only continue to the Scale phase when they are validated by experiments or having a working prototype.

TenneT would like to know which selection criteria should be used for the pre-seed phase. The respective stage gates of the pre-seed phase are Phase 0 and Phase 1, indicated in Figure 4. Thus, the pre-seed phase stops at the stage-gate 'Final selection'. The pre-seed phase is defined as the early stage of idea and start-up development without large investors. The characteristics of the pre-seed phase are

that the Business Model is not completely finished and there might not be a working prototype yet.
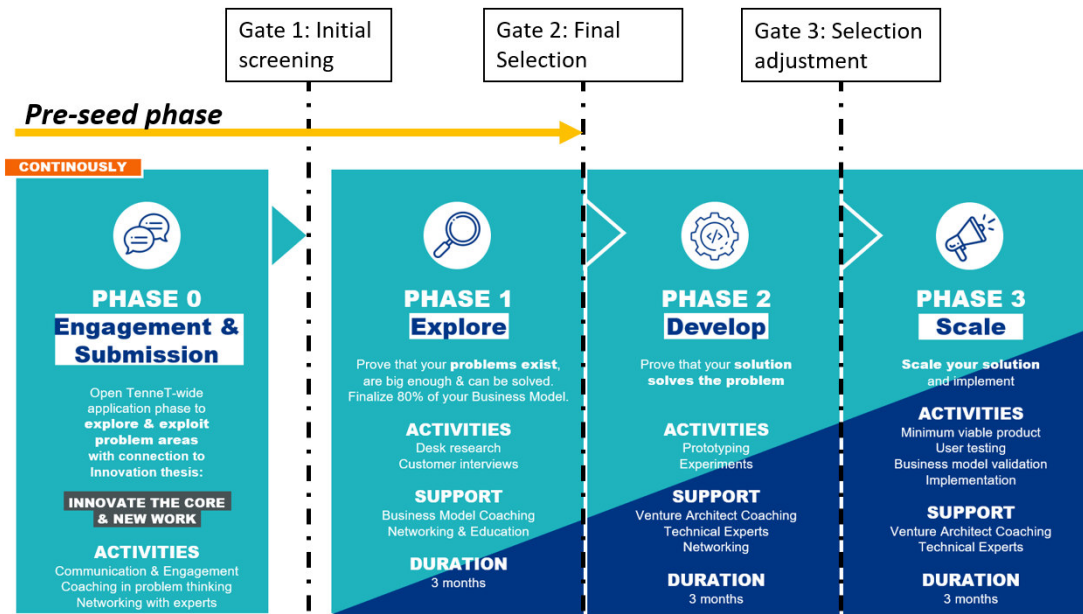
Figure 4: Stage gates TenneT POWERLab

1.5 Research Questions

In order to meet the research objective which is based on the research setting in the TenneT POWERLab, the following research question is derived:

How can pre-seed selection criteria be used for Internal Corporate Accelerators (ICAs)?

To answer the main research question, sub-questions (SQs) are developed. The first subquestion should give insight into the theoretical knowledge of ICAs and the pre-seed selection criteria in the field of innovation and startups. And thus answering how ideas are assessed at a very early stage in those domains. Additionally, the findings of SQ1 are linked to the TenneT POWERLab objectives and their pre-seed phase.

1. *What are Internal Corporate Accelerators (ICAs) and what are the characteristics of the pre-seed phase in the TenneT POWERLab?*

The second subquestion examines pre-seed selection criteria used in the field of innovation and startups from the literature.

2. *Based on the literature review, what selection criteria can be used to evaluate ideas in the pre-seed phase?*

The third subquestion should add and adjust new selection criteria that might be included based on interviews conducted among experts. The list of possible relevant selection criteria of idea selection is used as input to answer SQ3.

3. *Which pre-seed selection criteria should be included in this research?*

The fourth subquestion should validate which pre-seed selection criteria are most relevant for ICAs in the TenneT POWERLab. Thus, not only indicating which selection criteria are relevant for ICAs but also indicating the importance.

4. *How can these pre-seed selection criteria be weighted?*

The fifth subquestion should validate the most relevant criteria by a panel of experts and in what context the selection criteria can be used. Additionally, generalizability to other domains is investigated through the panel of experts.

5. *In what context can these selection criteria be used in practice?*

In order to answer the stated research questions, an exploratory qualitative research approach is used which is described in Chapter 2.

1.6   Scientific Contributions

Literature on Internal Corporate Accelerators is rather new and no research is done on selection criteria used in ICAs. There is some literature available on selection criteria for accelerators and a lot of literature in the field of Venture Capital selection criteria. However, no connection is made on how to implement these selection criteria in ICAs. During the thesis, this knowledge gap is addressed and thus provides new insights into the ICA literature. Additionally, previous research in the field of accelerators, incubators, and Venture Capital mostly has a very competitive environment. In contrast, TenneT is a government-owned liability company and doesn't have that level of competitiveness. Nevertheless, innovation is required to meet the future needs of the high-voltage grid. This research addresses those differences in context and what impact that has on the pre-seed selection criteria used. Moreover, new insights are developed on how stage-gate processes are applied to ICAs and how pre-seed selection criteria change from gate to gate.

The practical relevance for the TenneT POWERLab is that pre-seed selection criteria are developed for the pre-seed phase. With these criteria, incoming ideas can be assessed based on a sound base to minimize bias. Additionally, multiple innovation initiatives are in development that correlates with the TenneT POWERLab. The research will indicate how these innovation initiatives are orientated in the organization and their contextual differences.

2 Methodology

This chapter describes the exploratory qualitative research methodology that is used to meet the objective of this thesis. In paragraph 2.1, the main research approach and phases are discussed with help of the research flow diagram. In paragraphs 2.2, 2.3, 2.4, 2.5, and 2.6 the research approach of each subquestion is explained in more detail. In chapter 2.7 an overview is given of the selected interviewees and survey candidates.

2.1 Main research approach

The TenneT POWERLab team would like to explore which pre-seed selection criteria could be used for the program. The pre-seed selection criteria differ across industries and can be company-specific. Therefore, contextual factors need to be considered in the research. Also, the other innovation initiatives within TenneT can provide good insights for the development of pre-seed selection criteria. It is also important to capture the context of the innovation initiatives to determine if those pre-seed selection criteria can be implemented for the TenneT POWERLab. Due to the importance of contextual factors, a qualitative research approach, using interviews, is most suited. However, the relevance and importance of pre-seed selection criteria are studied with a survey among employees that work for the innovation initiatives. Thus, the context of the answers given is known. However, the sample size is small and cannot be considered a valid qualitative research approach.

The research is divided into five stages as can be seen in Figure 5. Phase 1 is about the research context and is studied by defining the problem, the theoretical context, and the research setting. Defining the problem is done by studying the literature and conducting semi-structured interviews with employees involved in setting up the TenneT POWERLab. The theoretical context is studied from the literature and information about the research setting is gathered from semi-structured interviews with employees from the POWERLab and internal documents. With the gathered information a research objective is set and research questions are developed.

In phase 2, a theory is developed with information from the literature. The theory-building focuses on defining ICA's, the pre-seed phase, and pre-seed selection criteria. By doing so SQ1 and SQ2 can be answered. The outcome of this phase is a conceptual framework that lists pre-seed selection criteria that might be important for ICA's.

In phase 3, data is collected in the form of semi-structured interviews and an online survey. With this data, new selection criteria are added to the existing conceptual framework based on the literature research, answering SQ3. Additionally, the new pre-seed selection criteria and the ones from the literature are tested on their relevance with an online survey, answering SQ4. The outcome of this phase is a definitive framework that lists the relevant pre-seed selection criteria for ICA's in a similar context as the TenneT POWERLab.

In phase 4, the contextual factors are studied and the implications for the TenneT POWERLab are given, answering SQ5.

In phase 5, the last phase, conclusions, and recommendations are given.
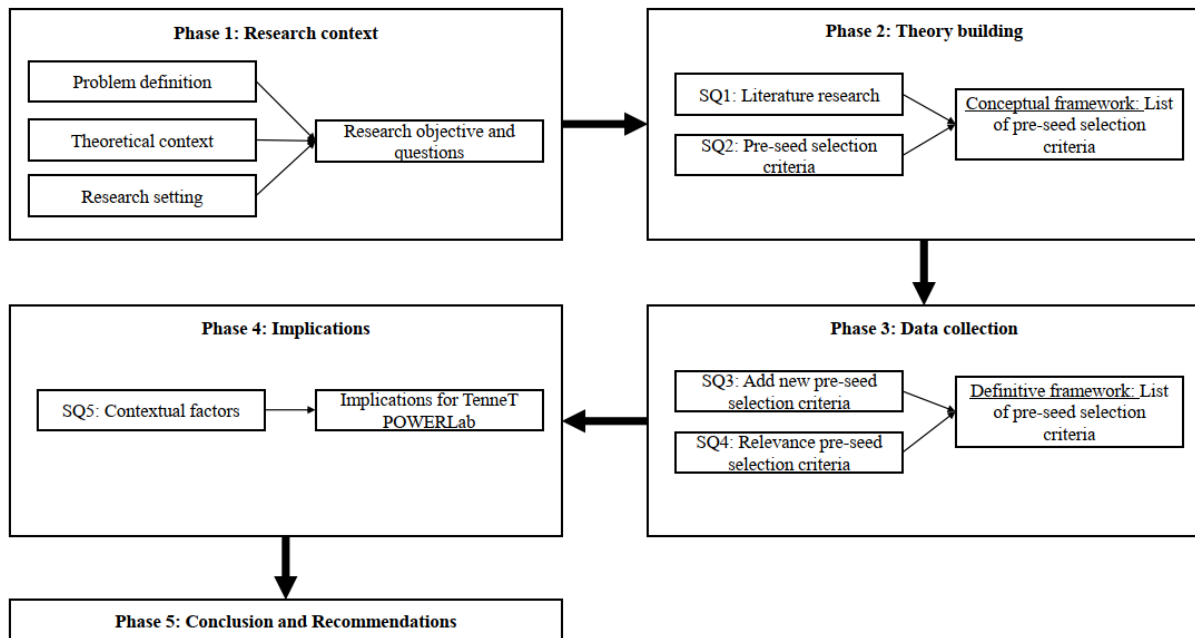
Figure 5: Research Flow Diagram

2.2 Research Approach SQ1

In this paragraph, the research approach of SQ1 is explained in more detail. SQ1 is: "*What are Internal Corporate Accelerators (ICAs) and what are the characteristics of the pre-seed phase in the TenneT POWERLab?*". SQ1 is answered by a literature study and data collection within TenneT. Both methods are described in more detail in the paragraphs below.

2.2.1 Literature review

A literature review is done to gain theoretical knowledge of ICAs and the pre-seed selection criteria in the field of innovation and startups. The literature needs to comply with the requirements stated in paragraph 3.2.1. Next, categories and keywords are made for sound search descriptions and a structured approach. Additionally, internal documents of the TenneT POWERLab are studied to get a good understanding of the research setting and goals of the program. The internal documents and the literature review form the basis for the interview questions regarding SQ1.

2.2.2 Data Collection Method

To get additional insights on the goals and pre-seed phase of the TenneT POWERLab semi-structured interviews are conducted with internal developers of the program. Semi-structured interviews are chosen because new insights could be developed for the other research questions. Additionally, this interview structure allows getting good explanations and details that might be of interest. To answer SQ1 the

TenneT POWERLab needs to be placed into context compared to the literature. Therefore, insight information on the development of the POWERLab is required. For this reason, the two main developers and an external innovation consultant are selected for these interviews. The external innovation consultant also knows the details of the POWERLab and is also able to compare it to other forms of accelerators. They all have a background in intrapreneurship and are familiar with Internal Corporate Accelerator programs. The questions regarding this subquestion are only one part of the interview and are followed up by questions for the other subquestions. There are 10 questions related to SQ1 and the interview protocol can be found in Appendix A.

2.2.3 Data Analysis

The interviews with the developers will be recorded and transcribed. Coding is not done for the answers given related to SQ1 because coherent answers are given and they belong to the same group, namely, "TenneT POWERLab Developers". The statements given are compared to the literature review and internal documents. When there are discrepancies the interviewees are asked to clarify.

The first step of the validation is to triangulate as described above. This is done by comparing the literature, internal documents, and interviews. Additionally, a panel interview is organized with the three developers to discuss the results and context.

2.3 Research Approach SQ2

In this paragraph, the research approach of SQ2 is explained in more detail. SQ2 is: *"Based on literature review, what selection criteria can be used to evaluate ideas in the pre-seed phase?"*. SQ2 is answered by a literature study only.

2.3.1 Literature review

The second research question is answered by studying the literature on pre-seed selection criteria in the field of entrepreneurship and startups. It's required to widen the scope to these fields because the literature on pre-seed selection criteria of ICAs is very limited. If the use of these selection criteria for ICA is valid is studied in SQ3.

2.4 Research Approach SQ3

In this paragraph, the research approach of SQ3 is explained in more detail. SQ3 is: *"Which pre-seed selection criteria should be included in this research?"*. SQ3 is answered by data collection within TenneT. The method used is described in more detail in the paragraphs below.

2.4.1 Data Collection Method

Besides the pre-seed selection criteria from the literature, other criteria might be relevant for ICAs. This is researched by interviewing internal and external developers of the TenneT POWERLab. The external developer is an innovation consultant from WhatAventure that assists in giving a theoretical sound base

for the TenneT POWERLab. Additionally, experts from the Strategy & Partnerships department are interviewed who know about existing internal and external innovation activities. Also, these experts from Strategy & Partnerships (STP) are well aware of the strategy of TenneT. The major innovation initiatives within the STP department that are interviewed in this research are the Digitalization and Flexibility portfolio, the Innovation portfolio, the Acceleration Room, and the Corporate Venturing program. Interviewees are selected when they are closely involved or manage one of the innovation initiatives. Of each innovation initiative, at least one expert is interviewed. For an overview of the selected interviewees see Table 3.

2.4.2 Data Analysis

The personal interviews are recorded and transcribed. Consequently, coding is done to perform the data analysis. For the data analysis, the software ATLAS.ti is used. The coding focuses on selection criteria that are mentioned and in what context they are applied. When selection criteria are mentioned by more than one expert they are added to the list of pre-seed selection criteria from the literature. All these criteria are researched on relevance and level of importance in the online survey of SQ4.

The results are validated by an online survey among experts from the POWERLab and other innovation initiatives, which is described in the next section. Also, a panel interview with the three developers to discuss the results of the new relevant pre-seed selection criteria and context.

2.5 Research Approach SQ4

In this paragraph, the research approach of SQ4 is explained in more detail. SQ4 is: "*How can these pre-seed selection criteria be weighted?".* To indicate the relevance of the pre-seed selection criteria from the literature and the interviews, an online survey among the same experts is organized, that works for the POWERLab and other innovation initiatives from where the context is known. This will indicate differences and similarities of the pre-seed selection used between the POWERLab and other innovation initiatives.

Additionally, the POWERLab developers also got a survey that not only relates to the complete pre-seed phase but also the initial screening only. The initial screening takes place after the submission phase, Gate 1. The relevance and level of importance of might change during the different stages of ICAs and different sets of pre-seed selection criteria might be used for each stage. The surveys are described in more detail in the paragraphs below.

2.5.1 Data Collection Method

To select the most relevant pre-seed selection criteria for ICAs an online survey is conducted with the same group of experts that are selected for SQ3. The survey approach is selected because the pre-seed selection criteria from the literature and criteria mentioned by experts in the personal interviews, can be quickly assessed on their relevance. Also, ranking is made quantitative, making it easier to compare the

different perspectives between the innovation initiatives and the difference between Gate 1 (=initial screening) and Gate 2 (=final selection). An overview of the experts selected for the online survey and the corresponding departments can be found in Table 2.

Table 2: Overview experts and departments

TenneT POWERLab:	Acceleration Room:	Innovation Portfolio:	Digitalisation and Flex	Ventures:
Expert 1: Developer POWERLab	Expert 6: Manager Innovation and CSR	Expert 8: Innovation Portfolio Manager	Expert 9: Business Developer Digital & Flex	Expert 15: Manager Ventures
Expert 2: Developer POWERLab	Expert 7: STP Advisor		Expert 10: Advisor Strategy	
Expert 3: Innovation Consultant			Expert 11: Manager Digital & Flex	
Expert 4: POWERLab core team member			Expert 12: Manager Digital & Flex	
Expert 5: POWERLab core team member			Expert 13: Manager Digital & Flex	
			Expert 14: Manager Digital & Flex	

The survey is conducted in Google Forms because it is free to use and easy to extract data. To indicate the relevance of each pre-seed selection criteria nominal scale is used. Participants need to choose between three answers: "relevant", "possible relevant in the future", and "not relevant". Only when answered "relevant" the participant is asked to indicate the level of importance of that criteria. For the level of importance, an interval scale is used and participants are asked to indicate the level of importance on a scale from 1 (=unimportant) to 5 (=extremely important).

The online survey protocol can be found in Appendix C.

2.5.2   Data Analysis

The online survey is exported from Google Forms and is analyzed by JASP a statistical software program. The relevance of each pre-seed selection criteria is computed and the arithmetic average (=mean). A pre-seed selection criterion is deemed relevant when at least 50% of the participants answer its relevant. The mean is calculated to give an indication of the importance of the relevant criteria.

Unfortunately, the sample size is rather small, and therefore additional validation is important. This is done by a panel interview, where the results are discussed with the three developers. Also, the differences in the context of the other innovation initiatives and the POWERLab are discussed.

2.6   Research Approach SQ5

In this paragraph, the research approach of SQ5 is explained in more detail. SQ5 is: "*In what context can these selection criteria be used in practice?"*. To validate the most relevant criteria and in what

context the selection criteria can be used a panel interview with three experts is organized. The panel interview method is described in more detail in the paragraphs below.

2.6.1 Data Collection Method

The panel interview method is chosen because it gives a deeper understanding of the contexts where the pre-seed selection criteria can be adopted. The experts are selected based on their experience in the field of corporate entrepreneurship both inside and outside TenneT. The selected experts are the two internal developers of the POWERLab and the innovation consultant that has experience in a wide variety of accelerators and industries. These experts might give insights into the generalizability to domains outside the energy utility sector. Additionally, discussed is what narratives might cause the differences in context.

The panel interview protocol can be found in Appendix D.

2.6.2 Data Analysis

The interview is recorded and transcribed. Coding is done for the contextual similarities, contextual differences, and narratives that cause the contextual differences. To validate the outcomes of the panel interview a comparison with the literature is made to see if there is a valid explanation for the results based on the contextual differences.

2.7 Overview of interviewees

Different interviewees are selected for different subquestions. In this section, an overview is given and other remarks that apply to all interviewees are discussed.

Personal interviews are conducted in a single session with a time limit of one hour. During the interviews, questions relate to SQ1 or SQ3 depending on the background of the expert. A panel interview is organized separately to help to answer SQ5. In Table 3 an overview of the interviewees is presented with their employer, department, function, and the sub-question they would answer.

Table 3: Interviewees

	Employer	Department	Function	Role / topic	SQ1	SQ2	SQ3	SQ4	SQ5
Expert 1	TenneT TSO	EB-BOF	Senior Advisor Board Office	Developer POWERLab	X		X		X
Expert 2	TenneT TSO	GFO	Senior Advisor	Developer POWERLab	X		X		X
Expert 3	WhatAVenture	External Partner POWERLab	Innovation Consultant	Project Manager	X	Literature study	X	Online Survey	X
Expert 4	TenneT TSO	Strategy & Partnerships	Advisor Strategy	Strategic challenges			X		
Expert 5	TenneT TSO	Strategy & Partnerships	Manager Innovation and CSR	Acceleration room			X		
Expert 6	TenneT TSO	Strategy & Partnerships	STP Advisor	Acceleration room			X		
Expert 7	TenneT TSO	Strategy & Partnerships	Innovation Portfolio Manager	Innovation Portfolio			X		
Expert 8	TenneT TSO	Strategy & Partnerships	Business Developer Digital & Flex	Digital & Flex Development			X		

The interviewees are selected based on their current roles. Expert 1 to 3 are selected because they are developers of the TenneT POWERLab or are closely involved with organizing the program. Expert 1 and 2 are TenneT employees that work full-time on the development of the program and have experience setting up similar programs. Expert 3 is an external innovation consultant that assists the POWERLab

team in setting up the program. These interviewees are therefore capable of answering questions about the TenneT POWERLab and defining the pre-seed phase. Experts 5 till 8 are selected because they manage other innovation initiatives within TenneT that are described in section 4.2.4. These experts do select ideas that fit their portfolio and their insights on selection criteria can also be useful for the TenneT POWERLab.

The interviews are anonymized so interviewees might feel more comfortable answering certain questions and minimizing bias. The function titles of the interviewees are provided so the relation towards the topic of the interview is clear. All interviewees gave their consent to record the interview. The personal data is handled as described by the TU Delft. The interview transcripts are not included in the appendices and can be requested via the researcher.

3 Literature review

The literature review focuses to answer SQ1 and SQ2 and should therefore cover ICAs, the pre-seed phase, and pre-seed selection criteria. Additionally, the context of the literature should be studied before implications can be suggested for the TenneT POWERLab. The scope of the literature review and location of ICAs in the literature is described in 3.1. In section 3.2 the selection process is explained by defining the keywords and selection criteria. In the next section, 3.3, findings are organized in groups, and strengths and weaknesses are discussed. In section 3.4, flaws or gaps in existing knowledge are given and an outline for future research is provided. Lastly, in section 3.5, a conceptual framework for pre-seed selection criteria for ICAs is presented.

3.1 Scope of review

The research included in this literature review revolves around Internal Corporate Accelerators (ICAs), Accelerator stages, ICAs selection criteria, and selection criteria used to assess startups in the field of CV, excluding ICAs. ICAs are a form of Internal Corporate Venturing (ICV) to stimulate bottom-up innovation through intrapreneurship (Selig, Heinzelmann, Kohlhase, & Baltes, 2019). In ICAs employees of the firm itself can pitch their ideas, and when deemed promising, they are provided with an innovation-supportive work environment to support the intrapreneurial team. In contrast, External Corporate Accelerators (ECAs) focus on startups and ideas outside the organization (Selig, Heinzelmann, Kohlhase, & Baltes, 2019). Figure 6 gives an overview of the location of ICAs in the field of Entrepreneurship.
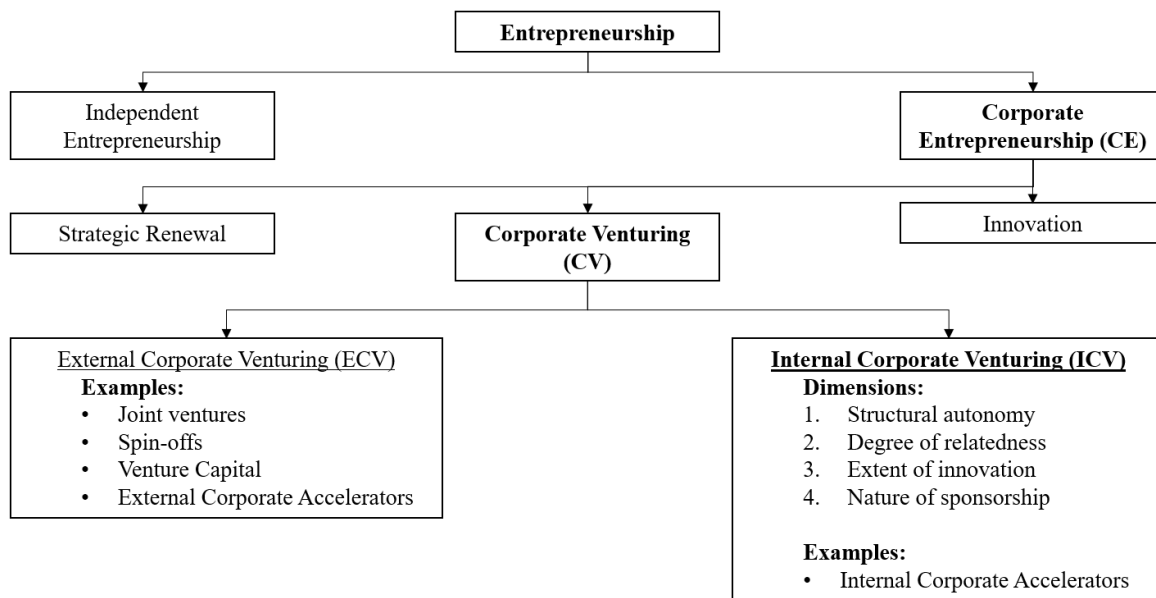

Figure 6: Internal Corporate Venturing (ICV) taxonomy. Adopted from (Sharma P. &., 2007).

3.2   Search Description and Selection Criteria

In the first stage of the research, the topic was investigated with help of roadmap and review papers on Corporate Entrepreneurship (CE) and Intrapreneurship, while being in contact with corporations who were interested in optimizing their ICAs efforts encouraging Intrapreneurship. The database 'Google Scholar' was used for this initial search because of the ease of use. This gave a good understanding of the concept of ICAs and their place in the field of entrepreneurship. Subsequently, the search terms were narrowed down to obtain articles on the selection criteria of innovative ideas within the organization, and selection criteria to evaluate these ideas when they are ready for the next stage of development. After an initial search on selection and selection criteria of ICAs, it soon became clear that limited literature is available and that a structured literature review is required.

To find the right articles for a literature review, four steps are taken. First, literature requirements were developed to ensure high-quality literature and literature databases were expanded to 'Scopus' and 'Web of Science'. Secondly, categories are made to split the scope into manageable parts. Thirdly, keywords are chosen per category to start the search for relevant literature. Lastly, a search description table is added to present how relevant literature is found.

3.2.1   Literature requirements
Literature selected for this literature review must adhere to the following requirements:

- Literature is written in English.
- Literature uses references from existing literature.
- Literature includes an author with a good academic record.
- Literature should be strongly related to the field of CE and business.
- Literature should be recent and preferably after 2000.

There is a strong preference that literature selected for this literature review is peer-reviewed. However, because of the limited literature on ICAs, a compromise is made. In case conference papers are not peer-reviewed, additional checks on the author and referencing are done.

3.2.2   Categories and Keywords
Literature should be within the scope of the literature review to be considered relevant. Therefore, the title, abstract, or keywords must relate to at least one of the following topics.

Internal Corporate Accelerators (ICAs)

Literature related to ICAs within the domain of Corporate Entrepreneurship (CE), Intrapreneurship, and Internal Corporate Venturing (ICV). Here, the focus is on how ICAs are integrated into the corporate structure and how ICAs encourage intrapreneurship. The research aims to answer the following questions:

- How are ICAs integrated into the corporate structure?

- What is the framework of ICAs?
- How do ICAs encourage intrapreneurship?
- What is the difference between ICAs and External Corporate Accelerators?

Keywords: Corporate Entrepreneurship, Intrapreneurship, Internal Corporate Venturing, Internal Corporate Accelerator, Internal Corporate Incubator, Corporate Accelerator structure, Corporate Incubator structure, Corporate Accelerator business model, Corporate Accelerator Intrapreneurship

Accelerator Stages

Literature related to the different stages within accelerators. Here, the focus is on how stages are defined and what the stage of the technology development is in each stage. The research aims to answer the following questions:

- What are the stages of accelerators?
- What are the characteristics of each stage?
- What is the benefit of having different stages?

Keywords: Startup Accelerator stages, Incubator stages, Startup Accelerator phases, Incubator phases, Startup Life Cycle

ICAs Selection criteria

Literature related to the selection criteria used in ICAs. Here, the focus is to find selection criteria for accelerators and selection criteria to determine if innovative ideas are ready for the next stage of development. Also, exploration is done on what methods are used to develop and measure the criteria. Note, that literature should be directly related to ICAs because other fields are reviewed in the next category. The research aims to answer the following questions:

- What selection criteria are used to select ideas in ICAs?
- What selection criteria are used to determine if ideas are ready for the next stage of development in ICAs?
- How are the criteria in ICAs developed and measured?
- What is the effectiveness of the selected criteria used in ICAs?

Keywords: Internal Corporate Accelerator criteria, Internal Corporate Accelerator factors, Internal Corporate Accelerator metrics

Selection criteria used to assess startups in the field of CV, excluding ICAs

Literature related to the selection criteria that are used to assess the potential of startups in other fields, e.g. accelerators, incubators, and Venture Capital (VC), are included. Here, the focus lies on selection criteria to determine if ideas are ready for the next stage of development in those fields. Also, exploration

is done on what methods are used to develop and measure the criteria. The research aims to answer the following questions:

- What selection criteria are used to select ideas in other field related to startups?
- What selection criteria are used to determine if ideas are ready for the next stage of development in other fields related to startups?
- How are the criteria in other fields related to startups developed and measured?
- What is the effectiveness of the selected criteria used in other field related to startups?

Keywords: Startup Accelerator criteria, Incubator criteria, Venture Capital criteria

Defining the pre-seed phase

Here, the focus is on how the pre-seed phase is defined in the field of innovation and entrepreneurship. The research aims to answer the following questions:

- What is the pre-seed phase?
- What are the characteristics of the pre-seed phase?
- What are common definitions of the pre-seed phase?

Keywords: Pre-seed phase entrepreneurship, pre-seed phase characteristics, definition pre-seed phase

3.2.3 Search Descriptions

The databases 'Scopus' and 'Web of Science' are used to find literature. The search description is described in Table 4, including a short description of the results. The search is divided into subsections as described in the previous section. Note that for the keywords created above synonyms might be used to ensure that most literature is included in the search. The chosen synonyms can be found in the 'search query' column.

Table 4: Literature review search descriptions:

Search query	Database	No. of results	Research results	No. used
Internal Corporate Accelerators (ICAs)				
Corporate Entrepreneurship	Scopus	2532	Broad search baseline. Overall to broad.	0
	WoS	3651	Broad search baseline. Overall to broad.	0
Intrapreneurship	Scopus	514	Broad search baseline. Overall to broad.	0
	WoS	492	Broad search baseline. Overall to broad.	0
Internal Corporate Venturing	Scopus	96	Many relevant articles. Two articles on how corporate ventures are evaluated and selected.	2
	WoS	250	Many relevant articles. No additional selected.	0
Internal Corporate Accelerator	Scopus	12	One paper on ICAs including an overview of the available literature. Other two papers are about Internal Venturing.	3
	WoS	8	No new relevant sources among the results.	0

"Internal Corporate Accelerator"	Scholar	10	Expanded the search on Scholar duo to limited results on Scopus and WoS. Found one good and trustworthy article about implementation of ICAs.	1
Internal Corporate Incubator	Scopus	15	Two articles found on the configurations of Corporate Incubators. One includes success factors and phases.	2
	WoS	11	One article on types of corporate incubators combined with the knowledge-based view.	1
Internal Corporate Accelerator structure	Scopus	3	Search too narrow. One article was already selected other two not relevant.	0
	WoS	0	No results. Search too narrow.	0
Corporate Accelerator structure	Scopus	14	One relevant article on different types of corporate accelerators.	1
	WoS	20	No new relevant articles among the results.	0
Corporate Incubator structure	Scopus	16	No new relevant articles on structure among the results.	0
	WoS	17	No new relevant articles on structure among the results.	0
"Corporate Accelerator" AND "Intrapreneurship" OR "Corporate Entrepreneurship"	Scopus	8	One relevant article on different paths adopted by corporate accelerators.	1
	WoS	535	Too many results. No relevant articles on the first pages.	0
Accelerator Stages				
"Startup" AND "Accelerator" AND "stages" OR "phases"	Scopus	59	One relevant article about startups phases, stage-gate and corporate accelerators.	1
Startup Accelerator stages	WoS	18	One relevant article about selection criteria across stages.	1
"startup" AND "Incubator" AND "stages" OR "phases"	Scopus	38	Two relevant articles about the startup development process. One includes differences between incubators and accelerators.	2
	WoS	21	No new relevant articles among the results.	0
"Startup Life Cycle"	Scopus	10	Articles too specific and not relevant.	0
	WoS	4	Articles too specific and not relevant.	0
ICAs Selection criteria				
"Internal Corporate Accelerator" AND "factors" OR "metrics"	Scopus	4	Relevant article on success factors of Corporate Accelerators.	1
	WoS	6	Search too narrow. No new relevant articles.	0
Selection criteria used to assess startups in the field of CV, excluding ICAs				
"Startup" AND "Accelerator" AND "criteria" OR "factors" OR "metrics"	Scopus	42	One relevant article with incubator selection criteria.	1
	WoS	4	Search too narrow. No new relevant articles.	0
"Startup" AND "Incubator" AND "criteria" OR "factors" OR "metrics"	Scopus	51	No relevant articles found.	0
	WoS	9	Search too narrow. No new relevant articles.	0
"Venture Capital" AND "criteria" OR "factors" OR "metrics"	Scopus	981	Search too broad. No relevant articles found.	0
	WoS	254	Search too broad. No relevant articles found.	0

			One relevant article found about funding selection criteria in the venture capital domain.	1
"Venture Capital" AND "selection criteria"	Scopus	21		
	WoS	13	Two relevant articles found. One about the success drivers of crowdfunding, VC and angels investing. One about VC investment selection criteria.	2
Pre-seed phase				
"Pre-seed" AND "Entrepreneurship" OR "Intrapreneurship"	Scopus	6	Two relevant articles found. One about pre-seed funding and the other about pre-seed phase.	2
	WoS	531	Search too broad. No relevant articles found.	0
"Pre-seed" AND "startup" OR "start-up" OR "venture"	Scopus	11	No new relevant articles	0
	WoS	6	No new relevant articles.	0

3.3 Literature insights

In total 22 articles have been selected from the literature search. A breakdown is made in Figure 7, where the subject areas of the selected literature within the field of Entrepreneurship are presented.
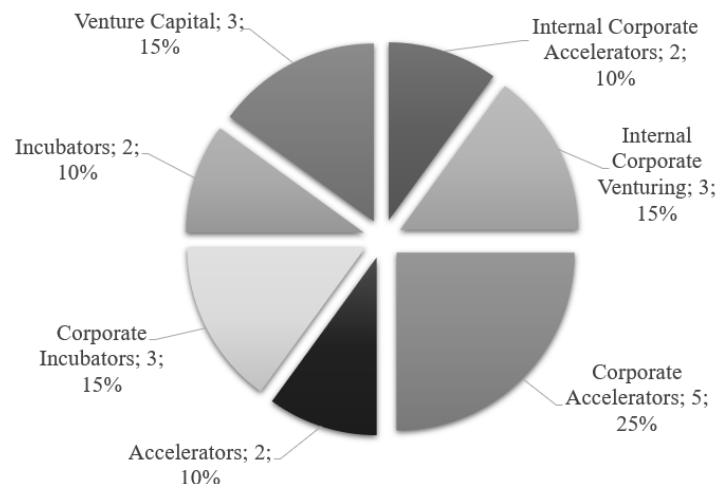

Figure 7: Diagram of subject areas of the selected literature within the field of Entrepreneurship

Three relevant articles are found with a broad orientation about Internal Corporate Venturing (ICV). Unfortunately, only two relevant articles are found directly related to ICAs, because most articles about accelerators have an external orientation. However, the accelerators that are externally orientated are relevant and five articles are selected about Corporate Accelerators and two about accelerators that don't specify a particular form. Additionally, three articles are selected about Corporate Incubators and two articles are selected about incubators that don't specify a particular form. These are useful to describe the differences and similarities between incubators and accelerators. Lastly, three articles are selected in the domain of Venture Capital where research is performed to determine selection criteria to assess potential startups.

More than half of the selected literature is from European institutes and a few stem from the US and Asia. Articles in the field of Venture Capital (VC) all originate from the US that is well known for a

large startup market. All selected literature belongs to the field of Business & Management or more specifically to Entrepreneurship & Innovation. The majority of the selected literature are articles and a few are conference papers or book chapters. Only two relevant articles date from before 2016, indicating that the topic of this literature review is rather new.

To describe the findings in the literature, the selected literature is divided into subsections corresponding with the categories that are used in the literature search.

3.3.1 Internal Corporate Accelerators (ICAs)
In this section, ICAs and their phases are discussed in detail.

3.3.1.1 Internal Corporate Accelerators

Organizations need to adapt to markets that are increasingly volatile due to globalization and digitalization to maintain their market position. Companies must therefore develop new business models, while at the same time optimizing their core business. In other words, an organization needs to explore and exploit what is known as organizational ambidexterity (O'Reilly III & Tushman, 2011). This can especially be difficult for large path-dependent companies, but there are ways this can be accomplished. One of them is Corporate Venturing (CV) and gained popularity among organizations because various studies linked CV attempts to good strategic and financial outcomes (Covin & Miles, 2007). Especially open innovation has become a valuable tool for an organization to strengthen its innovation capabilities (Chesbrough, 2006).

According to Selig, Gasser, and Baltes (2018), there are many organizational CV forms and they can be divided into internal oriented CV, external oriented CV, and cooperative orientation. Examples of internal-oriented CVs are internal startups or intrapreneurship programs. External oriented CV can be investments in start-ups with CV capital funds. One example of a cooperative orientation is a joint venture. These different forms of CV contradict the traditional perspective of Corporate Entrepreneurship (CE) that separates the creation of new businesses and strategic renewal (Ginsberg & Guth, 1990). Recent studies of Selig, Gasser, and Baltes (2018) show that some CV forms do not contribute to the creation of new businesses but do promote strategic renewal.

Selig, Gasser, and Baltes (2018) give with their paper "*How corporate accelerators foster organizational transformation: An internal perspective*" a better understanding of how the internal opening of the innovation process contributes to organizational renewal. Additionally, a systematic literature review is performed to clarify terminology and to give an overview of new organizational forms discussed in the literature. In the literature review, they address the lack of research done on internal oriented CV, something which can be confirmed by this literature review. Most CV efforts are done in the view of open innovations and targeting external orientated CV efforts. Nevertheless, the internal opening of the innovation process also creates new development paths outside the regular R&D environment of organizations (Selig, Gasser, & Baltes, 2018). The organizational forms to achieve this

have different characteristics. These can be formal initiatives vs. informal initiatives or a top-down approach vs. a bottom-up approach (Selig, Gasser, & Baltes, 2018). The forms examined in this literature review are ICAs, Corporate Accelerators, and Corporate Incubators.

The study of Selig, Gasser, and Baltes (2018) reveals that ICAs are new and an underinvestigated organizational form that can be defined as:

"[…] Internal corporate accelerators are cohort-based corporate venturing units which focus on the fast validation of internally developed innovation ideas by releasing employees for a short period of time from their day-to-day business and providing them with entrepreneurial methods and mentoring." (Selig, Gasser, & Baltes, 2018, p. 6)

ICAs are thus, inside-out and support strategic renewal by creating new resources and capabilities for the core of the organization (Selig, Gasser, & Baltes, 2018). In contrast, Internal Corporate Incubators support teams for a long duration, from early-stage until commercialization, which in total can consist of 1 to 2 years (Tripathi & Oivo, 2020). External Corporate Accelerators have a short timeframe and mainly focus on external startups that are in a mature stage (Tripathi & Oivo, 2020).

Selig, Gasser, and Baltes (2019) answer with another paper "*Effects of Internal Corporate Venturing on the Transformation of Established Companies*" how different corporate venturing forms help established companies with strategic renewal. This is done by qualitative research methods consisting of interviews at two German high-tech companies. The research has developed new insights regarding the transformational effects of CV initiatives on the core organization. Additionally, CV forms can be divided into two categories depending on the entrepreneurial level and frequency of execution. Both categories have different transformation effects and are complementing each other (Selig, Gasser, & Baltes, 2019). The first category is *Focused Corporate Venturing Concepts,* initiated to execute one idea which is top-down driven, e.g. internal ventures and joint ventures. They are characterized by a high entrepreneurship level but a low frequency (Selig, Gasser, & Baltes, 2019). The second category is *Broad Corporate Venturing Concepts* that are initiated to achieve increasing innovativeness and are independent ideas, e.g. ICAs. ICAs are characterized by a low degree of entrepreneurship and a high frequency (Selig, Gasser, & Baltes, 2019). The latter changes the core organization and organizational renewal by persuasion and goodwill. Elements in this study have similarities with the concept of contextual ambidexterity approach when looked at the behavior of employees who look for opportunities, are highly cooperative, are building internal networks, and are comfortable in working parallel (Birkinshaw & Gibson, 2004). In ICAs employees need to pitch their idea, partner with others to build a team, allocate resources, and do this parallel to their daily job.

Literature discussed until now is from the authors Selig, Gasser, and Baltes (2019), as no other researchers have done research in the field of ICAs. Also, related studies mainly come from German researchers, and cases studied are in two high-tech companies which might hamper the generalizability.

Therefore, a critical look is required and the perspective is compared with studying literature from Corporate Accelerators and Corporate Incubators to identify differences and similarities among researchers in this field.

According to Urbaniec and Żur (2020), Corporate Accelerators foster innovation through ventures provided by start-ups. This indicates that the researched Corporate Accelerators are external oriented and are not comparable to ICAs. The motives for launching Corporate Accelerators are external push factors, external pull factors, internal push factors, and internal pull factors (Urbaniec & Żur, 2020). The latter, internal pull factors, are characterized by new knowledge for employees, organizational learning, new talent acquisitions, and enhancing organizational competencies (Urbaniec & Żur, 2020). This aligns with the characteristics of ICAs that are specified by Selig, Gasser, and Baltes (2019). Urbaniec and Żur (2020) state that strategic long-term benefits include human capital development, new knowledge acquisition, and organizational learning. This shows similarities with the study of (Selig, Gasser, & Baltes, 2018) on ICAs. However, Urbaniec and Żur (2020) also state that the contribution of strategic renewal was limited which might be the result of the external orientation described by Selig, Gasser, and Baltes (2018). Urbaniec and Żur (2020) also state that the research in the field of Corporate Accelerators remains modest and lacks frameworks and concepts.

Moschner, Fink, Kurpjuweit, Wagner, and Herstatt (2019) indicated four types of Corporate Accelerators each with their targets and fit in the organization. The models are based on the management structure and the number of participants of the accelerator. One of the types is the *In-house Accelerators* and are described as accelerators that tap into external startup knowledge and innovation. Therefore, this has an external orientation and is not the same as an ICA with ideas from employees. This, therefore, confirms the article of Selig, Gasser, and Baltes (2018) where is stated that definitions can be misleading and that most Corporate Accelerators have an external orientation and collaborate with startups. However, one of the forms described, the Hybrid Accelerator combines an outside-in orientation with intrapreneurship, so internal projects are run by their own employees (Moschner, Fink, Kurpjuweit, Wagner, & Herstatt, 2019). Also, fostering intrapreneurship and cultural change is one of the characteristics (Moschner, Fink, Kurpjuweit, Wagner, & Herstatt, 2019), which is in line with the earlier described articles of Selig, Gasser, and Baltes (2018).

Becker & Gassmann (2006) indicates four Corporate Incubator types and are combined with the knowledge-based view of the firm. The so-called, leveraging incubator, increases the utilization of internally developed technologies and brings it into the market (Becker & Gassmann, 2006). The leveraging incubator also has an internal-oriented perspective like ICAs described by Selig, Gasser, and Baltes (2018). The leveraging incubator leverages organizational knowledge and enhances the organizations' core competencies (Becker & Gassmann, 2006), which is in line with what is described

by Selig, Gasser, and Baltes (2018). Becker & Gassmann (2006) also state that Corporate Incubator can enhance entrepreneurial activity and organizational learning in the organization.

3.3.2 Accelerator Stages

Kurpjuweit & Wagner (2020) describe a startup collaboration model used by Corporate Accelerators and Corporate Venture Capital. The firms studied have an external orientation and have the goal to increase competitiveness or the productivity of processes (Kurpjuweit & Wagner, 2020). This is different from the studies on ICAs and models described might not work. However, the startup supplier programs studied share important elements like short-term project duration, mentors, and support throughout the collaboration (Kurpjuweit & Wagner, 2020). Similarities between the programs studied are that they all have stage-gate processes to bring more discipline to the product development and evaluation criteria for each stage (Kurpjuweit & Wagner, 2020). The startup supplier stage-gate process has four stages and three gates. Stage 1 is the identification, stage 2 is internal matchmaking, stage 3 is a pilot project and stage 4 is the transfer into the supply base (Kurpjuweit & Wagner, 2020). Between the stages are the gates that determine if the startup is ready for the next stage. This model helps to determine when to continue investments and it helps to increase the success rate of startups.

Masucci et al. (2020) found that the selection process is done with a stage-gate process, see Figure 8, consisting out of four stages and three gates which is comparable to the outcome of the study of Kurpjuweit and Wagner (2020).
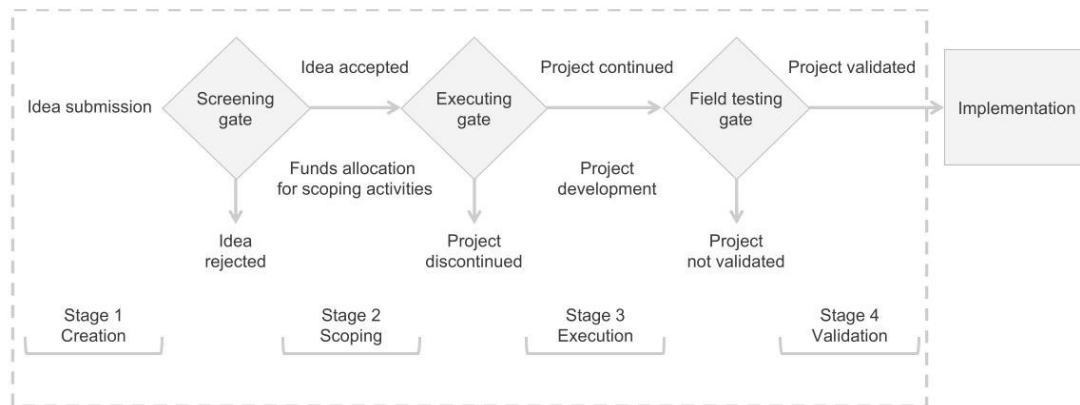

Figure 8: Stage-gate venture evaluation (Masucci, Parker, Brusoni, & Camerani, 2020)

Hirte, Münch, and Drost (2017) identified three stages when analyzing Corporate Incubators in multinational companies and confirmed by theoretical findings. The stages are pre-incubation, incubation, and exit. In the pre-incubation phase, the origin of the idea and the selection criteria should be determined. In the incubation phase resources should be allocated and the incubator program should be adapted to the idea. The exit possibilities after successful product development are different for internal ideas and external startups (Hirte, Münch, & Drost, 2017).

When comparing the stage-gate process of Masucci et al. (2020) in Figure 1Figure 8 with the TenneT POWERLab in Figure 4 the stages and gates show a lot of similarities. Stage 1, creation, of Masucci et al. (2020) can be compared with phase 0, engagement and submission, of the TenneT POWERLab. Gate 1, the screening gate is also similar. Stage 2, the scoping, differs because funds get allocated, this is not the case for the POWERLab in this stage. Instead, the POWERLab focuses on exploring the idea and proving that the problem exists. One could argue that when funds cant be allocated there is no real problem. However, it also indicates the difference in perspective between venture evaluation and idea valuation, the latter that is done in the POWERLab. Gate 2, executing gate, of Masucci et al. (2020) is comparable to gate 2, final selection, of the POWERLab. The following stage 3, execution, is for both stage-gate processes similar because both are about project development. Gate 3, the field testing gate, of Masucci et al. (2020) is comparable to the POWERLab because projects and the minimum valuable product will not be validated with user testing what is done in stage 4. After the last stage implementation takes place according to Masucci et al. (2020). However, for the POWERLab this is still part of the last stage.

3.3.3 ICAs Selection criteria

Kupp, Marval, and Borchers (2017) determined five success factors for Corporate Accelerators by studying the first German Corporate Accelerator. The success factors are independent teams, large external network, transparent and aligned goals, top-management involvement, long-term vision, and performance indicators. One of the performance indicators mentioned is to track the number of collaborative projects. Unfortunately, no selection criteria specific to ICAs are mentioned in this paper or other literature. Therefore, the selection criteria used in other fields to assess startups are investigated.

3.3.4 Selection criteria used to assess startups in the field of CV, excluding ICAs

Accelerators are highly selective in the selection of startups but the selection criteria top accelerator programs use are not known (Yin & Luo, 2018). Yin and Luo (2018) studied accelerators in Southeast Asia to uncover the selection process and latent criteria by comparing selected startups and rejected startups. They discovered that initial screening consisted of 8 criteria and a final screening of 4 criteria. No method or framework was developed to overcome these subconscious preferences. If the outcomes of this study also apply to other accelerators needs further investigation.

In the article of Kelley & Hoffman (2012) accelerator companies in the US are analyzed on the pre-seed selection criteria used. The pre-seed selection criteria are divided into initial screening and final selection.

Masucci et al. (2020) analyzed how Internal Corporate Ventures are evaluated and selected. This is done by a longitudinal dataset compromising 14 years of data and 1,527 venture proposals. The decision-making process and criteria underlying the selection and evaluation are studied. Masucci et al. (2020) selected the selection criteria from interviews and literature; novelty, potential value, strategic fit, stage

of the review process, time to implementation, and deployment routes. The latter, deployment routes, is surprising because this criterion is in literature only used after the validation stage (Masucci, Parker, Brusoni, & Camerani, 2020) indicating that in practice criteria can differ from literature. Another finding from Masucci et al. (2020) is that selection criteria are depending on the stage of venture development, something that is also noted by Yin and Luo (2018). Unfortunately, no research is done about the effectiveness of the criteria, and only a single industry is studied, limiting the generalizability.

Hommel & Bican (2020) analyzed the decision-making criteria in funding Fintechs and indicated that investment decision of Venture Capitalists (VCs) mainly depends on the team of founders, the product, criteria describing the business, the technology, the financial criteria, and the investors. Also, they indicated that the most important decision-making criteria depend on the funding stage, which is similar to the previously analyzed papers. Sharma (2015) did a literature review evaluating VCs investments evaluation criteria and examined that not all VCs have a similar investment decision process for the evaluation of startups. Some VCs value entrepreneurial characteristics, while others find financial and marketing perspectives more important. Also, biases and heuristics affect the judgment of investors but not much attention is given to these aspects in most literature (Sharma A. K., 2015). Lastly, creating better decision-making criteria can increase the success rate of new ventures.

Whether the selection criteria used to assess startups also apply to ICAs needs extended research. However, substantial research is done in the field of VCs which can give a good starting point when certain concepts or stages align with ICAs.

4 Results

In this chapter, the results of the literature review are described in section 4.1. Accordingly, the results of the interviews are described in section 4.2. Lastly, the results of the survey are described in section 4.3.

4.1 Results Literature Review

In this section, the characteristics of ICAs are described in section 4.1.1. Next, a conceptual framework for the selection criteria of ICAs is presented in section 4.1.2.

4.1.1 Internal Corporate Accelerators

Internal Corporate Accelerators (ICAs) are one form to enhance Corporate Entrepreneurship and support strategic renewal by creating new resources and capabilities for the core of the organization (Selig, Gasser, & Baltes, 2018). Enhanced Corporate Entrepreneurship leads to a more ambidextrous organization that is more agile in the current volatile market. This literature review shows that there are no frameworks on how to implement ICAs successfully and the selection process of promising innovative ideas is lacking. Good selection criteria, taking into account the stage of development, can help corporations to increase the success rate of new ventures. Additionally, these decision-making criteria might lead to less bias during the process. Research in the field of Corporate Accelerators, Corporate Incubators, and Venture Capital can help to give a general understanding of accelerator stages or selection criteria but it is important to keep in mind the differences of orientation discussed in this literature review.

The work of Selig, Gasser, and Baltes (2018) provides a good starting point and a general understanding of ICAs. However, some additional research is required to generalize it to other industries. Moreover, the stage-gate evaluation process of Masucci et al. (2020) might be a good structure to adapt to ICAs. However, adapting selection criteria from accelerators or VCs to ICAs is challenging because ICAs have an internal orientation, and accelerators or VCs are externally orientated. Also, the goals of ICAs are strategic renewal by creating new resources and capabilities for the core of the organization, achieved by a bottom-up approach.

The literature on pre-seed selection focussing ICAs is not existing. However, there is literature regarding pre-seed selection criteria for accelerators. In the article of Kelley & Hoffman (2012) accelerator companies in the US are analyzed on the pre-seed selection criteria used. Also, Yin (2018) provides selection criteria and concluded that pre-seed selection criteria differ across stages. Additionally, an old but still relevant article written by Shepherd (1999) about venture assessment by Venture Capitalists is studied in more detail to see if those criteria also might be relevant. Which criteria of these articles are used and how they are filtered, is described in section 4.1.2.

4.1.2 Conceptual Framework ICAs

The conceptual framework follows from the literature review and is used as input for the analysis. The list of pre-seed selection criteria is based on the articles of Kelley & Hoffman (2012), Yin (2018), and Shepherd (1999). The first two sources are from the accelerator domain and had probably the highest correlation with ICAs. The article of Shepherd (1999) about venture assessment in the Venture Capitalists domain is well known but if these criteria can also be applied to ICAs should be studied. The relevance of all these criteria is studied by doing an online survey among employees from the TenneT POWERLab and the other innovation initiatives. The lists of pre-seed criteria used can be found in Table 5. There might be pre-seed selection criteria added based on the interviews. The definitions of each criterion are subtracted from the corresponding articles.

The lists of pre-seed selection criteria in Table 5 are filtered on doubles. Especially between the articles of Kelley & Hoffman (2012) and Yin (2018) some criteria had a high similarity. The reasoning for each of the filtered pre-seed selection criteria can be found in Appendix B.

Table 5: Pre-seed selection criteria from the literature. [1] (Radojevich-Kelley & Hoffman, 2012), [2] (Yin & Luo, 2018), [3] (Shepherd, 1999)

Criteria	Definition	Source
(Accelerator's) Ability to Add Value to Incoming Start-Up	*Accelerators (or other programs) should be able to add value to new ideas and startups. This may result in rejection of good ideas because accelerators (or other programs) do not believe they can assist the new idea/venture.*	[1]
Strong Lead Founder	*Lead founder has experience and knowledge for starting up a business.*	[1]
Technical Expertise	*The team has the technical expertise to develop the product.*	[1]
Working Prototype	*The team has a working prototype that demonstrates the new idea.*	[1]
Incoming Team's Willingness to Listen & Adapt	*The incoming team is open to feedback and is able to adapt accordingly.*	[1]
Idea Solves a Real Problem	*The idea solves a real problem, meeting a demand in a certain market.*	[1]
Customer Affordability	*There is evidence that customers can afford the product.*	[2]
Market Demographics	*There is a market size analysis and demographic analysis.*	[2]
Concept Maturity	*The concept can be realized too product.*	[2]
Sales & Distribution	*There are existing sales and distribution channels.*	[2]
Value Proposition	*There is evidence of tangible or intangible benefits for customers.*	[2]
Sustainable Advantage	*Advantages that are not easily available by competitors.*	[2]
Growth Strategy	*There are strategies and potential for future growth.*	[2]
Key Success Factor Stability	*The change of requirements necessary for success during industry development.*	[3]
Timing of Entry	*Timing of entering the industry's stage of development.*	[3]
Lead Time	*Period of monopoly for the first entrant prior to competitors entering the industry.*	[3]

| Competitive Rivalry | *The amount of competition among industry members during industry development.* | [3] |

4.2 Results interviews

In this section, the results of the interviews are discussed. In section 4.2.1 general characteristics of ICAs are described. In section 4.2.2 new insights about the orientation of the TenneT POWERLab from internal and external developers are presented. In section 4.2.3 the stakeholders of the POWERLab are described. In section 4.2.4, characteristics of other innovation initiatives within TenneT are presented. In section 4.2.5, the insights gained from the developers of the POWERLab and other innovation initiatives are combined for a framework of the innovation funnel of TenneT. Lastly, in section 4.2.6 new pre-seed selection criteria are presented that are added to include in the survey combined with the criteria found in the literature.

All interviews are transcribed and part of the interviews, that are of importance, are coded. The transcribed interviews are not in the appendix and can be requested. Table 6 gives an overview of the code groups used for each interviewee to give an overview of what information is used from each interviewee. Most data is collected from developers of the TenneT POWERLab like the "Reasons for ICA program", "Characteristics POWERLab", "Characteristics pre-seed phase", and "Difference between stage-gates". An overview of the codes used within the code groups can be found in Appendix E. To explain the steps taken to arrive at the results parts of Appendix E are included in the tables of this chapter.

Table 6: Code groups per interviewee

Interviewee	Code Group
Developers TenneT POWERLab	Reasons for ICA program
"	Characteristics POWERLab
"	Characteristics pre-seed phase
"	Differences between stage-gates
Manager Digitalisation & Flexibility	Characteristics Digitalisation & Flexibility portfolio
Manager Innovation Portfolio	Characteristics Innovation Portfolio
Manager Acceleration Room	Characteristics Acceleration Room
All interviewees	Pre-seed selection criteria

4.2.1 General characteristics of ICAs

In this section, general characteristics of ICAs are described. The characteristics don't necessarily belong to the POWERLab. The codes used in this chapter to analyze the transcripts of the POWERLab developers can be found in Table 7.

Table 7: Codes used characteristics ICAs, pre-seed, and stage-gates

Interviewee	Code Group	Code
Developers TenneT POWERLab	Characteristics ICAs	Setup of ICA programs, tailor solution, entrepreneurial environment, employee ownership
"	Characteristics pre-seed phase	Prove problem, market needs defined, problem relevance, idea traction, engagement
"	Differences between stage-gates	Goals, Technology Readiness Level (TRL), leanness, required qualities, KPIs, coaches, weight of criteria, skill sets

The definition of ICAs is described differently by the developers of the POWERLab. However, they have similar important characteristics mentioned. The following definition is preferred by the researcher:

"Internal corporate accelerator is where you make use of the domain-specific knowledge and motivation of your employees to drive innovation" (POWERLab Developer, 2021)

The typical setup of an ICA is not that special but the details do matter (POWERLab Developer, 2021). The details need to fit the company setting that is based on the culture, mindset, data, and goals they have with the program. An ICA program that mainly focuses on innovation requires a different setup than when employee development is more important. The business model of companies influences the aim and the criteria that are important for the program.

"ICAs are always tailored for the company and its employees but the fundamental pillars are the same". (TenneT POWERLab developer, 2021)

The typical duration of an intrapreneurship program is 9 – 18 months. ICA has a duration on the longer end of that spectrum (POWERLab Developer, 2021). Start-up innovation programs tend to be on the shorter end because a more active engagement is preferred.

All developers pointed out that the team or individual is more important than a good idea. The reasoning is that a bad team will kill a good idea if they can't deal with it properly. On the contrary, a good team identifies the problem and pivots and will change and transform the idea. In the end, the idea gets carried by the team and not the other way around (POWERLab Developer, 2021). Especially when ideas are pre-seed it's important to assess the idea holder and implementer.

The multistage selection process is commonly used for ICAs because different skills and qualities are required during the stages of the program (POWERLab Developer, 2021). For example, technical skills can be important early in the development but soft skills can get more important when contact is

made with the first clients and the teams get larger. This can be one of the pitfalls of intrapreneurship programs, that the people who started with the idea, might not be the best to scale it (POWERLab Developer, 2021).

At the beginning of the program, a lean approach with a limited number of pre-seed selection criteria should be used. Later gates should get more tangible and related figures and numbers get more mature because the idea also gets more mature (POWERLab Developer, 2021). An ICA program is can be seen as a short innovation funnel with goals that vary and more mature KPIs at the end of the program. Additionally, also the number of criteria should be limited especially, in the beginning, to remain flexible. Accordingly, criteria could be added when the program and ideas progress.

4.2.2   Characteristics of the TenneT POWERLab

In this section, the focus area of the interview is the reasons to develop an ICA program and the characteristics of the POWERLab. This is done from the perspective of internal developers, which are TenneT employees, and external developers, which are external consultants.

The codes used for the insights gained from interviews in this paragraph can be found in Table 8. The focus is on the mentioned reasons for ICA programs and the characteristics of ICAs.

Table 8: Codes used characteristics TenneT POWERLab

Interviewee	Code Group	Code
Developers TenneT POWERLab	Reasons for ICA program	Corporate inertia, employee development, employee engagement, Ways to innovate, early-stage idea evaluation, cultural change, innovate core business
Developers TenneT POWERLab	Characteristics ICAs	Setup of ICA programs, tailor solution, entrepreneurial environment, employee ownership

The following insights and characteristics relate to the TenneT POWERLab. The first insights relate to the reasons why an ICA program is a solution for TenneT according to the developers of the POWERLab.

Corporate inertia. Employees can have hurdles in their department when they cant accelerate their ideas because of the bureaucracy (POWERLab developer, 2021). TenneT needs to transform as an organization and needs to accelerate its operationalization efforts. Also, the POWERLab program was difficult to implement into the organization because of the same bureaucracy. The attention from the board that indicated the need for the POWERLab program resulted in the enrollment.

Employee development. The current innovation funnel of TenneT is not developing and enabling people (POWERLab developer, 2021). Also after design thinking workshops, employees go back to their day-

to-day work in their department. One of the POWERLab developers described why ICAs are a good tool for employee development:

"ICAs have a lot of positive effects on the people, empowering them and giving them the tools to approach new ways of working, new tasks and get out of their comfort zone". (TenneT POWERLab developer, 2021).

The POWERLab had therefore an action-oriented learning approach based on their ideas and get the support that they need. Employees that want to join the program don't need entrepreneurial expertise because the program develops them into entrepreneurs (POWERLab developer, 2021). Startup coaches that have experience in building startups are the sparring partner of the teams and sometimes be even team members. Employees can also advance their careers with the company by sitting in the driver seat that the POWERLab has to offer because the employee structure is not existing in the POWERLab. So it enables employees that need visibility for their projects and couldn't implement these in their regular role because of lack of resources and time.

Employee engagement. Employees should look further than just their day-to-day work to foster change and innovation within a company (POWERLab developer, 2021). Additionally, companies want to retain their employees and want them to feel engaged with the company. The POWERLab can provide this additional engagement.

Ways to innovate. The POWERLab makes use of domain-specific knowledge to get innovation (POWERLab developer, 2021). The challenges that TenneTs face are not about new product development or diversifying the portfolio, it's about operationalizing the core business differently which is important for the company and to effectively execute their strategy.

Early-stage idea evaluation. The POWERLab focuses on early-stage idea evaluation which is a stage that does not exist in TenneTs innovation funnel (POWERLab developer, 2021). Early-stage testing of ideas could create an idea inflow for the innovation funnel. The POWERLab aims to build a Minimum Viable Product (MVP).

Cultural change. The POWERLab is designed to achieve cultural change (POWERLab developer, 2021). This is achieved by creating an environment where people can fully utilize their potential and can bring this back to their department accordingly.

4.2.3   Stakeholders TenneT POWERLab

The POWERLab has a wide variety of stakeholders because the program stretches across the organization and is for all employees. Also, the program has two main objectives, employee development and fostering innovation which have benefits for multiple departments. The internal and external stakeholders of the program and their connections are explained below to give a better understanding of the research setting.

4.2.3.1 Internal stakeholders

Executive board. The POWERLab is located at the executive board office from an organizational perspective. Additionally, the executive board decided to start the program but does also decide if the program continues after the first year and in what form. The executive board knows organizational change is required, not only on the asset level but also on the employee level. Therefore, the program can be of great benefit for the executive board because better employees can fulfill their tasks more efficiently. On the other hand, the POWERLab needs a sponsor like the executive board to gain traction and for sponsoring the program.

Learning and Development. Managers from leadership education and head of learning and development and change management are important stakeholders because the main goal of the POWERLab program is people development. This is facilitated by allowing employees to be in the driver's seat without bureaucracy from their business unit.

Managers from innovation departments. Those managers can be innovation managers at a variety of departments within TenneT that are involved in innovative projects. The POWERLab is beneficial for them because there is more room for early-stage ideas within TenneT. The validation costs and efforts of early-stage ideas can now also be covered by the POWERLab and not only by the business units. Ideas can accelerate and become more mature in the program so managers can adopt the ideas after the program. On the other hand, having the managers from innovation departments connected to the POWERLab can enhance the output of the POWERLab.

Communication department. The communication department assisted the POWERLab to create new brand visuals and appearance which helps the POWERLab to gain traction. Successful outcomes of ideas can also be used for external communication and marketing.

4.2.3.2 External stakeholders

Corporate accelerator consultant. The POWERLab developer's team gets assistance from the consultancy firm WhatAVenture. WhatAVenture is an innovation consultant and are specialized in setting up a variety of accelerator formats, also within the energy utility sector. WhatAVenture not only helps with the form of the program but is also facilitating the workshops. Additionally, they have a large network of innovation coaches and other experts to maximize the output of the POWERLab.

4.2.4 Characteristics of other Innovation Initiatives

In this section, the focus area of the interviews is the characteristics of the other innovation initiatives of TenneT. The innovation initiatives discussed in this section are the Digitalisation & Flexibility portfolio, the Innovation portfolio, and the Acceleration Room.

The codes used for the insights gained from interviews in this paragraph can be found in Table 9.

Table 9: Codes used Innovation Initiatives

Interviewee	Code Group	Code
Manager Digitalisation & Flexibility	Characteristics Digitalisation & Flexibility portfolio	Strategic impact digital, Strategic impact flex, business plan requirement, portfolio approach, tracking innovation, indicating innovation gaps
Manager Innovation Portfolio	Characteristics Innovation Portfolio	Strategic impact, low entry barrier, portfolio approach, tracking innovation, indicating innovation gaps
Manager Acceleration Room	Characteristics Acceleration Room	Virtual room, strategic fit, knowledge sharing, external partnerships, innovation hub, workshops, support

The TenneT POWERLab is not the only and first innovation initiative within TenneT. Other innovation initiatives coexist and in this chapter, those are discussed to give a complete view of the research setting. The major innovation initiatives within TenneT belong to the unit Strategy & Partnerships (STP). Therefore, in this research only these innovation initiatives are considered. The unit STP is responsible for enabling TenneT's strategy by facilitating innovation. The STP unit consists of several departments which can be seen in Figure 9 and the unit is steered directly from the executive board as is illustrated in Figure 1.
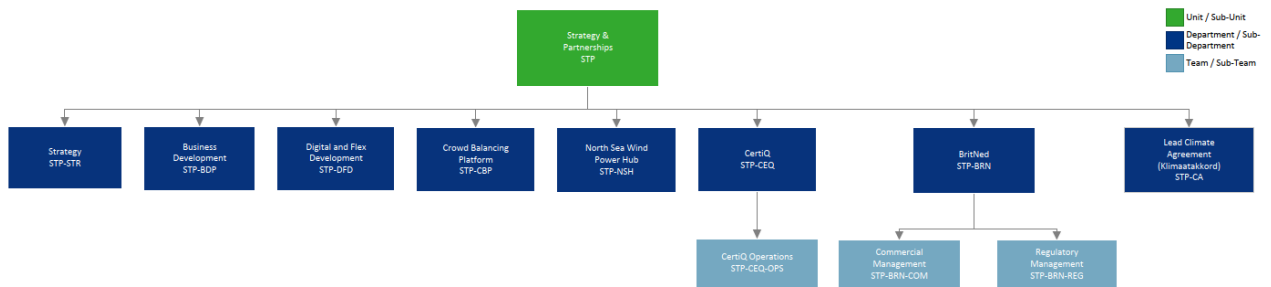

Figure 9: Organogram Strategy and Partnerships (STP)

The major innovation initiatives within the STP departments discussed in this research are the Digitalization and Flexibility portfolio, the Innovation portfolio, the Acceleration Room, and the Corporate Venturing program. The departments that manage the innovation initiative can be found in Table 10.

Table 10: Innovation Initiatives with corresponding departments

Innovation Initiative	Department
Digitalization and Flexibility portfolio	Digital and Flex Development (DFD)
Innovation portfolio	Strategy (STR)
Acceleration Room	STR

Most of the innovation initiatives are still under development. A reorganization a few years ago can be one of the reasons that departments are looking for ways to innovate. Secondly, the transformation of the grid also requires innovations and thus new initiatives.

4.2.4.1   Digitalization and Flexibility portfolio

The Digitalization and Flexibility portfolio keeps track of all projects that relate to digitalization or flexibility and makes sure those can be unlocked by market parties. The goal is to create new data-driven business opportunities and this is facilitated by developing partnerships, participation, and projects. New data-driven business opportunities can be new approaches, tools, or processes relying on data and supporting TenneT's business.

Before technologies can enter the portfolio a checklist is used to assess the initiative support one of the four strategic pillars, focuses on digitalization or flexibility, and if the initiative unlocks new strategic partnerships or projects.

The initiatives or projects in the Digitalization and Flexibility portfolio do have a business plan and can already be in development. With this portfolio, current projects can be tracked and this also indicates innovation gaps in comparison with what is required to follow the strategy. That way innovation efforts can be steered in a favorable direction.

The following insights and characteristics relate to the Digitalisation and Flexibility portfolio:

Strategic impact. The Digitalisation and Flexibility portfolio should cover at least one of the two strategic pillars (Business Developer, Digitalisation & Flexibility Portfolio, 2021).

Business plan requirements. There should be a partial business plan to see the investment required for a certain project (Business Developer, Digitalisation & Flexibility Portfolio, 2021). Most projects are late-stage and at the end of the innovation funnel of TenneT.

Portfolio approach. The digitalisation and flexibility projects are tracked in the portfolio to indicate innovation gaps and thus to steer innovation efforts (Business Developer, Digitalisation & Flexibility Portfolio, 2021).

4.2.4.2   Innovation portfolio

The Innovation portfolio is a rather new portfolio to track initiatives that can't be placed in the Digitalization and Flexibility portfolio because they don't meet the criteria that are described in the previous paragraph. Nevertheless, initiatives might still be aligning with TenneT's strategy. Also, for the Digitalization and Flexibility portfolio, the business plan or validation might be lacking and can therefore first be tracked in the Innovation portfolio. The checklist for the Innovation portfolio checks

if the initiative has a strategic impact or unlocks new ideas, products, or processes that do not primarily belong to flexibility or digitalization.

The following insights and characteristics relate to the Innovation portfolio:

Strategic impact. There should be at least one strategic pillar effected to enter the Innovation portfolio. This can be any strategic pillar and is not limited to one or two and makes the Innovation portfolio accessible for a lot of different projects (Manager Innovation Portfolio, 2021).

Low entry barrier. Not only the strategic entry barriers are lower than the Digitalisation and Flexibility portfolio but also the stage of development of the project can be earlier (Manager Innovation Portfolio, 2021). There is no business plan requirement however some estimates about investments should be made.

Portfolio approach. The innovation should track all other innovations that are valuable for TenneT that do not relate to the Digitalisation and Flexibility portfolio to keep the STP department informed about the running innovation projects (Manager Innovation Portfolio, 2021).

4.2.4.3   Acceleration Room

The Acceleration Room is a virtual room within the Strategy unit of TenneT that is under development. This virtual room hosts different tools to foster innovation at TenneT, illustrated in Figure 10. The goal of the Acceleration Room is to share knowledge between different departments but also with external partners.
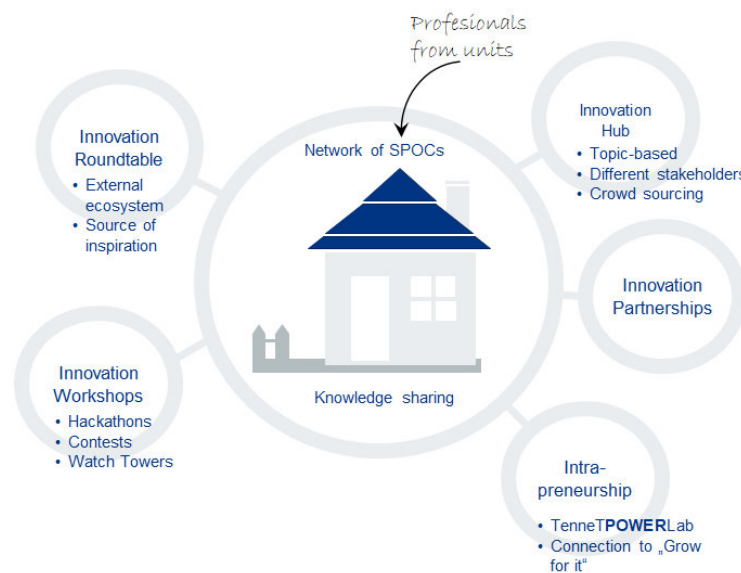

Figure 10: Acceleration Room (TenneT, 2021)

Within TenneT there are Single Point Of Contacts (SPOCs) within each department that can connect with the Acceleration Room. The Acceleration Room consists of a few employees who work for the

Strategy department and can help employees to connect with the right people within TenneT or with external parties to develop an idea. The tools of the Acceleration Room are the innovation roundtable, innovation hub, innovation workshops, innovation partnerships, and intrapreneurship in the form of the TenneT POWERLab that is managed outside the strategy department. The orientation of the Acceleration Room and the TenneT POWERLab are compared in section 4.2.3.

The following insights and characteristics relate to the Acceleration Room.

Virtual room. The Acceleration Room is a virtual room that acts as an innovation hub (Manager Acceleration Room, 2021). The hub organizes workshops, hackathons and gives support to promising ideas that cant fit in one of the portfolios. The main reason these ideas cannot enter one of the portfolios is that the ideas are in an early stage and not validated yet and investment costs are unknown.

Strategic fit. The ideas ideally fit one of the strategic pillars of TenneT but this is not a hard requirement (Manager Acceleration Room, 2021). The purpose is to remain flexible and accessible for employees that want to improve the organization.

Knowledge sharing. Knowledge sharing is important for TenneT and the Acceleration Room can play an important role in that (Manager Acceleration Room, 2021). Knowledge can be shared internally by the events or by small sessions at the innovation roundtable.

External partnerships. The Acceleration Room also has a focus on establishing external partnerships with other companies or universities (Manager Acceleration Room, 2021).

4.2.4.4   Corporate Venture program

The Corporate Venture program of TenneT is to support and secure TenneT's position as a front runner in the energy transition (TenneT, 2021). The program provides TenneT insights into the industry trends from start-up activities and new business cases. Additionally, TenneT could cooperate with promising start-ups and invest in relevant ones. The selected venture funds consist of European technology companies that are related to the energy industry.

4.2.5   Framework Insights Interviews

The characteristics of the POWERLab and other innovation initiatives that are described in the previous paragraphs are visualized in Figure 11. The portfolios are at the end of the innovation funnel of TenneT and are mainly fed by ideas from business units with a relatively high project cost. The project in the portfolios are already in execution and are traced in progress. Early-stage ideas from outside the organization enter the innovation funnel of TenneT via venture funds. For early-stage innovation, both the Acceleration Room and the POWERLab can be candidates. However, for the very early-stage idea, the POWERLab is better suited because in the program time is spend to check if the problem exists. Additionally, the POWERLab focuses on the core business of TenneT and not on filling the portfolios with the right ideas. The Acceleration Room does have a strong connection with the portfolios.
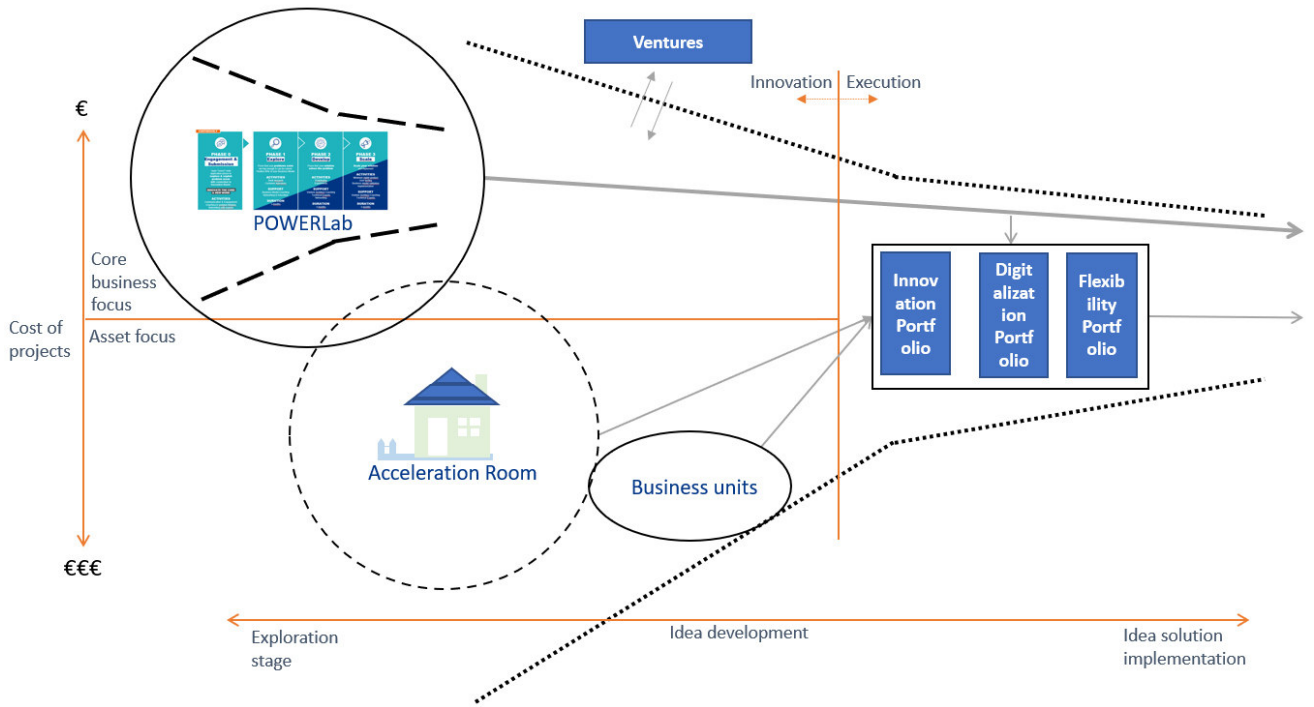
Figure 11: Innovation funnel of TenneT

4.2.6 New pre-seed selection criteria

For the online survey, new pre-seed selection criteria are added from the interviews that were mentioned at least twice by different experts and were not existing in the pre-seed selection criteria list from the literature. The codes in Table 11 are used to analyze the transcripts and each code is a pre-seed selection criterion mentioned by at least one interviewee.

Table 11: Codes for new pre-seed selection criteria

Interviewee	Code Group	Code
All interviewees	Pre-seed selection criteria	Diversity, motivation, desirability, feasibility, viability, relatedness, potential to scale, digitalization, radical innovation, fit scope of program, innovating the core, financial benefit, willingness to learn, breaking path dependency, regulatory fit, strategic fit, capability to learn, stakeholder relevance, problem existence, availability external solutions, market needs, availability project sponsor, validation efforts, time to execution

The three most mentioned pre-seed selection criteria that were not in the literature are Strategic Fit, Investment Cost, and Validation effort. The definition of these criteria can be found in Table 12. For the full list of pre-seed selection criteria used for the survey see Appendix B.

Table 12: Added pre-seed selection criteria from interviews

Pre-seed selection criteria	Definition
Strategic Fit	*The idea should contribute to the strategic pillars of TenneT.*
Investment Cost	*The quantified cost of innovation.*
Validation Effort	*The time and cost it takes to validate the idea.*

4.3 Results Survey

In this chapter, the results of the survey are presented. In section 4.3.1 the difference between the selection criteria between the stage gates is presented. In section 4.3.2 the difference between the POWERLab and other innovation initiatives is presented.

4.3.1 Difference between Stage Gates

The different perceptions of pre-seed selection criteria between Gate 1 (=intial screening) and Gate 2 (=final selection), as described in Figure 4, can be seen in Table 13. The pre-seed selection criteria ratings are marked green when at least 50% of the participants deemed the criteria relevant.

Table 13: Survey results - differences between stage gates

Pre-seed selection criteria	Relevance [%relevant]		Importance 1-5 [mean]	
	GATE 1	GATE 2	GATE 1	GATE 2
(Accelerator's) Ability to Add Value to Incoming Start-Up	33%	33%		
Strong Lead Founder	33%	33%		
Technical Expertise	67%	100%	3,5	2,3
Working Prototype	33%	67%		4,5
Incoming Team's Willingness to Listen & Adapt	100%	100%	5	5
Idea Solves a Real Problem	100%	100%	4,7	5
Customer Affordability	0%	33%		
Market Demographics	67%	67%	4	4
Concept Maturity	0%	67%		3,5
Sales & Distribution	0%	0%		
Value Proposition	67%	67%	5	5
Sustainable Advantage	0%	33%		
Growth Strategy	0%	0%		
Key Success Factor Stability	33%	0%		
Timing of Entry	33%	33%		
Lead Time	0%	0%		
Competitive Rivalry	0%	0%		
Strategic Fit	66%	33%	4,5	
Investment Cost	66%	100%	3,5	4,5
Validation Effort	100%	67%	4	4

The mean of the importance, rated from 1 – 5, gives some indication of importance. However, a comparison is not valid due to the small sample size.

4.3.2 Differences POWERLab and other Innovation Initiatives

The differences between the relevance of pre-seed selection criteria between the POWERLab and other innovation initiatives can be found in Table 14. The pre-seed selection criteria ratings are marked green when at least 50% of the participants deemed the criteria relevant.

Table 14: Survey results - differences between POWERLab and other innovation initiatives

Pre-seed selection criteria	Relevance [%relevant]		Importance 1-5 [mean]	
	Developers TenneT POWERLab	Other innovation initatives	Developers TenneT POWERLab	Other innovation initatives
(Accelerator's) Ability to Add Value to Incoming Start-Up	33%	80%		3,5
Strong Lead Founder	33%	40%		
Technical Expertise	100%	60%	2,3	3,7
Working Prototype	67%	60%	4,5	4
Incoming Team's Willingness to Listen & Adapt	100%	100%	5	4,2
Idea Solves a Real Problem	100%	60%	5	3,7
Customer Affordability	33%	40%		
Market Demographics	67%	20%	4	
Concept Maturity	67%	40%	3,5	
Sales & Distribution	0%	20%		
Value Proposition	67%	100%	5	3,8
Sustainable Advantage	33%	40%		
Growth Strategy	0%	40%		
Key Success Factor Stability	0%	20%		
Timing of Entry	33%	40%		
Lead Time	0%	20%		
Competitive Rivalry	0%	20%		
Strategic Fit	33%	100%		4,2
Investment Cost	100%	60%	4,5	4
Validation Effort	67%	60%	4	3,3

5 Implications

In this chapter, the implications of the results for TenneT are described in section 5.1. Thereafter, the implications of the results for the literature are described in section 5.2.

5.1 Implications for TenneT

The implication for the TenneT that are derived from the interviews and survey are discussed with the POWERLab developers with a panel interview.

5.1.1 Strengthening ICA approach

By aligning TenneT POWERLab with other innovation initiatives like the Acceleration room TenneT can strengthen its intrapreneurship efforts. However, experts indicated that overlap between the programs, the grey areas, are good for innovation as long as employees know where they should go with their idea.

Contextual factors of each Innovation Program within TenneT are to some extent different. However, the research also shows that some important contextual factors are similar between the innovation initiatives of TenneT. For example that TenneT is a government-owned liability company that has a large impact on what is important for all the departments. Similar high-level pre-seed selection criteria as described in this research might be used as a generic framework for multiple innovation initiatives. Also, here it's about the detail and how those criteria are implemented.

Additionally, the weighting of pre-seed selection criteria may change depending on the goals of a certain program. For example, the POWERLab decided to focus mainly on desirability and less on feasibility and viability, rather than having them all the same weight (POWERLab Developer, 2021).

5.1.2 Pre-seed Selection Criteria

This section discusses, which pre-seed selection criteria should be included for the TenneT POWERLab and why.

In Table 15 the final list of relevant pre-seed selection criteria can be found for the POWERLab and other innovation initiatives. The previous list of the literature is reduced from 20 to 11 important criteria for the pre-seed phase in the innovation context of TenneT. Especially the factors described by Shephard (1999) are mostly not relevant in the innovation context of TenneT because there is no real competitiveness for TenneT being a government-owned liability company. Two factors are not relevant for the POWERLab, namely, "(Accelerator's) Ability to Add Value to Incoming Start-Up" and "Strategic Fit". The fact that those score very high within the other innovation initiative of TenneT can be explained because of the different contexts described in section 5.1.3.

Table 15: Final list of relevant pre-seed selection criteria

Pre-seed selection criteria	Relevance [%relevant]	
	Developers TenneT POWERLab	*Other innovation initatives*
(Accelerator's) Ability to Add Value to Incoming Start-Up	33%	80%
Technical Expertise	100%	60%
Working Prototype	67%	60%
Incoming Team's Willingness to Listen & Adapt	100%	100%
Idea Solves a Real Problem	100%	60%
Market Demographics	67%	20%
Concept Maturity	67%	40%
Value Proposition	67%	100%
Strategic Fit	33%	100%
Investment Cost	100%	60%
Validation Effort	67%	60%

Most pre-seed criteria that are deemed relevant for Gate 1 are also relevant for Gate 2, as can be seen in Table 16. A "working prototype" and "concept maturity" are becoming relevant for Gate 2. The pre-seed selection criteria "strategic fit" is not relevant anymore at Gate 2.

Table 16: Difference between stage gates

Pre-seed selection criteria	Relevance [%relevant]	
	GATE 1	*GATE 2*
Technical Expertise	67%	100%
Working Prototype	33%	67%
Incoming Team's Willingness to Listen & Adapt	100%	100%
Idea Solves a Real Problem	100%	100%
Market Demographics	67%	67%
Concept Maturity	0%	67%
Value Proposition	67%	67%
Strategic Fit	66%	33%
Investment Cost	66%	100%
Validation Effort	100%	67%

5.1.3 Contextual differences

The contextual differences between the TenneT POWERLab and other innovation initiatives are explained in this chapter. The differences are based on interviews with experts from the different departments and internal documents.

People development. The POWERLab's main goal is people development and the program supports this by active guidance and mentorship. Other innovation initiatives don't have people development as a primary goal.

Innovating perspective. The POWERLab focuses on innovating the core processes of TenneT. This can range from new innovations to improve TenneT's assets or to make processes in the office more efficient. Other innovation initiatives focus mostly on improving the assets of TenneT.

Portfolio approach. All other innovation initiatives, except the acceleration room, are built around the portfolio approach. This might have an impact on idea selection because the gaps in the portfolio should be filled. STP uses a checklist on aspiration fit for one of the portfolio's filtering ideas that do not fit in one of the portfolios. However, the innovation 'portfolio' does not have certain selection criteria and has a flexible nature.

5.1.4 Contextual similarities

The contextual similarities between the TenneT POWERLab and other innovation initiatives are explained in this chapter. These are based on interviews with experts from the different departments and internal documents. The similarities also explain why the criteria are rated differently within TenneT in comparison to the ICAs in the literature. The objective of TenneT has a high influence on the importance of certain criteria.

Government-owned liability company. TenneT being a government-owned liability company means they need to ensure a reliable and uninterrupted supply of electricity in our high-voltage grid. Being competitive and turn-over-driven is, therefore, less important. For example, entering new markets and creating spin-offs are not important for all innovation initiatives. This is opposite from most companies that initiate with ICAs.

Challenges renewable energy. Renewable energy brings new challenges for the high-voltage grid and requires new ways of working from the employees. Employees need to adapt and be more efficient in their day-to-day work to cope with the growing workscope. This also requires innovation of core business processes and not only new innovations.

Strategy. All innovation initiatives focus on corporate innovation for the same company. All with the same purpose: "To connect everyone with a brighter energy future". To achieve this all innovation initiatives have a strong correlation with the strategic pillars. For example, TenneT wants to have a pioneering role in the energy transition by contributing to affordable, sustainable, and reliable European energy supply. The pioneering role requires more innovation and new solutions. Another strategic pillar is to "Energise people and organization" which holds for the POWERLab but also the other Innovation Initiatives.

Culture. Working for the same company results in similar ways of working between employees. One of the common narratives people work for TenneT is to be part of a more sustainable future and this is achieved by a joint approach towards renewable energy. Therefore, collaboration is key and can explain why people value certain criteria. For example, the criterion "Incoming Team's Willingness to Listen & Adapt".

5.1.5 Future Developments

The goal of the POWERLab can change in the future and thus for the pre-seed selection criteria. Insights derived from the interviews regarding these future developments are discussed in this section.

Collaboration with external parties is considered for ICAs because they can work as a catalyzer for idea generation and people development (POWERLab Developer, 2021). For now, external applicants are secondary for the sake of simplicity to set up the program. Additionally, the team can fully focus to get their own employees engaged with the program. External people, from startups or universities, bring ideas that ofter leaf path dependency and stand for more radical innovation and broader market views (POWERLab Developer, 2021). However, the business case for the POWERLab would be slightly different in that case and does focus less on innovating the core business of TenneT. Additionally, students can bring a technological perspective and combine that with the domain-specific process knowledge of TenneT employees. By also going external the program utilizes different tools but will not lose the intrapreneurship factor (POWERLab Developer, 2021).

5.2 Implications literature

Findings are that 9 out of the 20 pre-seed selection criteria are not deemed relevant for TenneT TSO. Examples of not relevant criteria are "Sustainable Advantage", "Timing of Entry" and "Lead Time". Especially the factors described by Shephard (1999) are mostly not relevant in the innovation context of TenneT. This can be explained by the non-competitive nature of government-owned liability companies who follow market needs instead of being a frontrunner of innovation. Highly relevant criteria are "Incoming Team's Willingness to Listen & Adapt", "Idea Solves a Real Problem" and "Investment Cost". These pre-seed selection criteria indicate the importance of the team and the quality of the idea to solve real problems in the organization, leading to the innovation of the core business.

Other implications of this research are that ECAs in competitive environments have similarities with ICAs in government-owned liability companies. Both ECAs and ICAs have an accelerator with stage-gates and focus on mentorship. Minor differences are in the duration and intensity of the programs.

The existing literature on ICAs cannot be applied to government-owned liability companies due to the uniqueness of the context. The frameworks and models should be adapted to this context. Additionally, more research should be done if ICAs are the right tool to innovate the core business of companies instead of gaining a competitive advantage.

6 Conclusion

6.1 Answering the research questions

To answer the main research question: *How can pre-seed selection criteria be used for Internal Corporate Accelerators (ICAs)?*. The subquestion needs to be answered first.

SQ1: *What are Internal Corporate Accelerators (ICAs) and what are the characteristics of the pre-seed phase in the TenneT POWERLab?* According to the developers of the program, ICAs are where you make use of the domain-specific knowledge and motivation of your employees to drive innovation (POWERLab Developer, 2021). The elements of innovation and employee development are also found in the literature review. The characteristics of the pre-seed phase differ from company to company according to the literature but also the interviews in this research follow that statement. For the developers of the POWERLab pre-seed is when a department sponsor wants to sponsor an idea for validation.

SQ2: *Based on the literature review, what selection criteria can be used to evaluate ideas in the pre-seed phase?* There are selection criteria from the accelerator literature and startup literature that form a conceptual framework that is verified by the online survey.

SQ3: *Which pre-seed selection criteria should be included in this research?* The research introduced three new pre-seed selection criteria that should be included in the research in the context of ICAs and the POWERLab. These are "Strategic Fit", "Investment Cost", and "Validation efforts". All three newly mentioned criteria are also deemed relevant with the online survey for most innovation initiatives.

SQ4: *How can these pre-seed selection criteria be weighted?* This can be done by an online survey as presented in this research. The outcomes of the survey between the POWERLab and other innovation initiatives didn't differ much because important contextual differences are similar. When comparing to the literature a lot of criteria are not relevant for TenneT because they do not operate in a competitive environment. However, a larger sample size is required to make the outcomes viable for quantitative standards.

SQ5: In what context can these selection criteria be used in practice? The pre-seed selection criteria can be used for all innovation initiatives within TenneT because the relevance is similar to most criteria. However, the differences in implementation might result in different outcomes. The results can also be utilized for other government liability companies in the energy sector. The results cant be used for non-government-owned liability companies because this contextual factor heavily influences the outcome of the results. This is because these companies operate in a less competitive environment but highly regulated core business. However, future research should determine if ICAs are a good tool for government-owned liability companies to innovate their core business.

6.2 Discussion & Recommendations

The ICA TenneT POWERLab shows unique characteristics compared to the literature. However, some limitations of this research should be mentioned.

The small sample size of the survey makes it invalid to use valid quantitative methods for data analysis. Also, the different innovation initiatives are grouped and the differences in perception between those innovation initiatives cannot be seen in this research. This is because only one or two employees participated in that innovation initiative.

The research is limited to government-owned liability companies in the energy sector that operate in a non-competitive environment. To generalize the outcomes to government-owned liability companies outside the energy sector, the goal of the program should be similar with a strong focus on employee development. There is no difference between the relevance of criteria between the POWERLab and other innovation initiatives. The pre-seed selection criteria might be too generic and sub-criteria should be developed to see major differences between departments. Additionally, focus on the implementation and how the pre-seed selection criteria are used might also gain new insights between the departments.

For future research, the following questions could be addressed to expand the knowledge on ICAs in government-owned liability companies and less competitive environments:

- Do the pre-seed selection criteria in this research lead to more people development and more innovation of the core business?
- How should the pre-seed selection criteria be quantified with a larger sample size?
- Is ICA the right tool for government-owned liability companies to achieve employee development and innovation of the core business? And what KPIs should be included to measure that?
- Can the pre-seed selection criteria be applied for government-owned liability companies outside the energy sector?
- How should the pre-seed selection criteria be weighted for successful implementation?

The POWERLab and other innovation initiatives are all in development to achieve the transformation of the organization that is required. Some overlap, grey areas, are indicated in this research. These grey areas foster innovation but for employees, it should be clear where they need to go with their idea. Some alignment is therefore required. The pre-seed selection criteria should be constantly reflected. Not only between the different stage gates but also when the goals of the POWERLab change. When the POWERLab shifts focus from employee development to mainly foster innovation this should be reflected in the pre-seed criteria used. Additionally, only benefits are mentioned from partnering with external parties and bring them into the POWERLab. This will bring new opportunities for the program in the future when more radical innovations are required to transform TenneT.

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Appendices

Appendix A: Personal Interview Protocols

Overview of experts and subquestions:

	Employer	Department	Function	Role / topic	SQ1	SQ2	SQ3	SQ4	SQ5
Expert 1	TenneT TSO	EB-BOF	Senior Advisor Board Office	Developer POWERLab	X		X		X
Expert 2	TenneT TSO	GFO	Senior Advisor	Developer POWERLab	X		X		X
Expert 3	WhatAVenture	External Partner POWERLab	Innovation Consultant	Project Manager	X	Literature study	X	Online Survey	X
Expert 4	TenneT TSO	Strategy & Partnerships	Advisor Strategy	Strategic challenges			X		
Expert 5	TenneT TSO	Strategy & Partnerships	Manager Innovation and CSR	Acceleration room			X		
Expert 6	TenneT TSO	Strategy & Partnerships	STP Advisor	Acceleration room			X		
Expert 7	TenneT TSO	Strategy & Partnerships	Innovation Portfolio Manager	Innovation Portfolio			X		
Expert 8	TenneT TSO	Strategy & Partnerships	Business Developer Digital & Flex	Digital & Flex Development			X		

The interview protocols are adapted for the function of the employees.

Questions Expert 1 and 2:

General questions:

1. *What is your background?*
2. *How many years of experience do you have in the field you are working?*
3. *How many years of experience do you have with intrapreneurship?*
4. *What are your experiences with accelerators?*
5. *Can you tell me more about the setting of these accelerators?*

Sub question 1:

1. *What is your role within the TenneT POWERLab team?*
2. *What is the goal of the Tennet POWERLab? And what makes the TenneT POWERLab unique within TenneT compared to other initiatives?*
3. *There are two types of accelerators and my research focuses on ICA. In your opinion, how would you define ICA?*
4. *Why did TenneT choose the Internal Corporate Accelerator approach?*
5. *What are the characteristics of the pre-seed phase of the TenneT POWERLab?*
6. *Why do you prefer this definition of the pre-seed phase?*
7. *Can you explain about the selection committee?*
8. *Who are the members of the selection committee and how is the committee formed?*
9. *Who are the stakeholders of the TenneT POWERLab?*
10. *When is the program deemed successful?*

Sub question 3:

1. *What selection criteria are used to assess ideas of entrepreneurs in the pre-seed phase of the TenneT POWERLab? (Or how would you assess the entrepreneurs?)*
2. *Why do you think these selection criteria are relevant for the Tennet POWERLab and how are the selection criteria developed?*
3. *Are there potential criteria that might be important to consider in the near future?*

Questions Expert 5 till 10:

General questions:

1. *What is your background?*

2. *How many years of experience do you have in the field you are working?*

3. *What are your experiences with innovation programs?*

4. *Can you tell me more about the setting of these programs?*

5. *Did you hear about the TenneT POWERLab program?*

Questions about [innovation initiative]:

1. *Are you involved in innovation initiatives or portfolios of TenneT?*

2. *Which ones and what is your role?*

3. *Can you describe what this [innovation initiative] is?*

4. *What is the goal of the [innovation initiative]? And what makes the [innovation initiative] unique within TenneT compared to other initiatives?*

5. *Are the innovations for the [innovation initiative] internal or external ideas?*

6. *What is the stage of the innovations entering the [innovation initiative]?*

7. *Can you give some examples of innovation entering the [innovation initiative]?*

8. *Who are the main stakeholders of the [innovation initiative]?*

9. *What does strategic fit means for TenneT in the context of innovations?*

Sub question 3:

1. *What pre-seed selection criteria are used to assess ideas or innovations for the innovation initiative you are working on? Or how would you assess the ideas or innovations?*

2. *Why do you think these selection criteria are of importance?*

3. *Are there other factors that might be important to consider?*

Questions Expert 11

General questions:

1. *What is your background?*
2. *How many years of experience do you have in the field you are working?*
3. *How many years of experience do you have with intrapreneurship?*
4. *What are your experiences with accelerators?*
5. *Can you tell me more about the setting of these accelerators?*
6. *Do you have experiences with Internal Corporate Accelerator?*

Sub question 1:

1. *What is your role for the TenneT POWERLab team?*
2. *There are two types of accelerators and my research focuses on ICA. In your opinion, how would you define ICA?*
3. *Why do companies and thus also TenneT choose the Internal Corporate Accelerator approach?*
4. *What are the characteristics of the pre-seed phase in ICAs?*
5. *Why do you prefer this definition of the pre-seed phase?*
6. *Can you explain how a selection committee is formed?*
7. *Who are the members of the selection committee and how is the committee formed?*
8. *When is the TenneT POWERLab project successful for WhatAVenture?*

Sub question 3:

1. *What selection criteria are used to assess ideas of entrepreneurs in the pre-seed phase of the TenneT POWERLab? (Or how would you assess the entrepreneurs?)*
2. *Why do you think these selection criteria are relevant for the Tennet POWERLab and how are the selection criteria developed?*
3. *Are there potential criteria that might be important to consider in the near future?*

Questions Expert 12 (Strategy)

General questions:

1.   *Can you briefly describe what your current role is within TenneT?*

Sub question 1:

1.   *What is in your opinion the difference between the strategic pillars and the challenges of TenneT?*

2.   *How does TenneT keep track of the challenges and why is it important to do so?*

3.   *What are the most important internal challenges of TenneT?*

4.   *What are the most important external challenges for TenneT?*

5.   *How will the challenges be tackled both the internal and external challenges?*

6.   *Do you think some challenges can be tackled by internal employees only? Or is collaboration with external parties required for all of them?*

7.   *Which challenges can be tackled internally?*

Appendix B: Selection criteria from the literature

Criteria	Definition	Source
(Accelerator's) Ability to Add Value to Incoming Start-Up	*Accelerators (or other programs) should be able to add value to new ideas and startups. This may result in rejection of good ideas because accelerators (or other programs) do not believe they can assist the new idea/venture.*	[1]
Strong Lead Founder	*Lead founder has experience and knowledge for starting up a business.*	[1]
Technical Expertise	*The team has the technical expertise to develop the product.*	[1]
Working Prototype	*The team has a working prototype that demonstrates the new idea.*	[1]
Incoming Team's Willingness to Listen & Adapt	*The incoming team is open to feedback and is able to adapt accordingly.*	[1]
Idea Solves a Real Problem	*The idea solves a real problem, meeting a demand in a certain market.*	[1]
~~Demand Validation~~	*~~There is a voice-of-customer type of evidence or demand validation.~~*	[2]
Reason for exclusion: Part of 'Idea Solves a Real problem'.		
Customer Affordability	*There is evidence that customers can afford the product.*	[2]
Market Demographics	*There is a market size analysis and demographic analysis.*	[2]
Concept Maturity	*The concept can be realized too product.*	[2]
Sales & Distribution	*There are existing sales and distribution channels.*	[2]
~~Product Maturity~~	*~~There is evidence of the functional feasibility of the product.~~*	[2]
Reason for exclusion: 'Working prototype is part of product maturity'		
Value Proposition	*There is evidence of tangible or intangible benefits for customers.*	[2]
~~Technology Expertise~~	*~~There is a product development skill set in the startup team.~~*	[2]
Reason for exclusion: Similar to 'Technical Expertise'		
Sustainable Advantage	*Advantages that are not easily available by competitors.*	[2]
~~Prior Startup Experience~~	*~~There is prior entrepreneurship experience in the startup team.~~*	[2]
Reason for exclusion: 'Strong Lead Founder' is part of 'Prior startup experience'.		
~~Feedback Mechanism~~	*~~The teams ability to listen en respond to customers.~~*	[2]
Reason for exclusion: Similar to 'Incoming Team's willingness to listen and adapt'.		
Growth Strategy	*There are strategies and potential for future growth.*	[2]
Key Success Factor Stability	*The change of requirements necessary for success during industry development.*	[3]
Timing of Entry	*Timing of entering the industry's stage of development.*	[3]
Lead Time	*Period of monopoly for the first entrant prior to competitors entering the industry.*	[3]
Competitive Rivalry	*The amount of competition among industry members during industry development.*	[3]
~~Educational Capability~~	*~~The amount of resources and skills available to overcome market ignorance through education.~~*	[3]

Reason for exclusion: Similar to 'Incoming Team's willingness to listen and adapt'.		
~~Industry Related Competence~~	*Experience and knowledge with the industry being entered on a related industry.*	[3]
Reason for exclusion: Part of 'Strong Lead Founder' and 'prior start-up experience'.		
Strategic Fit	*The idea should contribute to the strategic pillars of TenneT.*	[4]
Investment Cost	*The quantified cost of innovation.*	[4]
Validation Effort	*The time and cost it takes to validate the idea.*	[4]

References

[1] Radojevich-Kelley, N., & Hoffman, D. L. (2012). Analysis of accelerator companies: An exploratory case study of their programs, processes, and early results. Small Business Institute Journal, 8(2), 54-70.

[2] Yin, B., & Luo, J. (2018). How do accelerators select startups? Shifting selection criteria across stages. IEEE Transactions on Engineering Management, 65(4), 574-589.

[3] Shepherd, D. A. (1999). Venture capitalists' assessment of new venture survival. Management science, 45(5), 621-632.

[4] From interviews

Appendix C: Online survey protocol

Overview of invited experts for online survey:

TenneT POWERLab:	Acceleration Room:	Innovation Portfolio:	Digitalisation and Flex	Ventures:
Expert 1: Developer POWERLab	Expert 6: Manager Innovation and CSR	Expert 8: Innovation Portfolio Manager	Expert 9: Business Developer Digital & Flex	Expert 15: Manager Ventures
Expert 2: Developer POWERLab	Expert 7: STP Advisor		Expert 10: Advisor Strategy	
Expert 3: Innovation Consultant			Expert 11: Manager Digital & Flex	
Expert 4: POWERLab core team member			Expert 12: Manager Digital & Flex	
Expert 5: POWERLab core team member			Expert 13: Manager Digital & Flex	
			Expert 14: Manager Digital & Flex	

Introduction text: Thank you for participating in this survey. The goal of this survey is to know which pre-seed selection criteria are of importance for the 'innovation initiative' or portfolio you are managing within TenneT.

The pre-seed phase is defined as the very early stage of idea and start-up development without large investors and the start-up team is working to gain traction.

Part 1: General questions:

1. *The 'innovation initiative' or portfolio I manage within TenneT is:*

    1. *TenneT POWERLab*

    2. *Acceleration Room*

    3. *Innovation Portfolio*

    4. *Digitalization Portfolio*

    5. *Flexibility Portfolio*

    6. *Ventures*

    7. *Other, namely: ...*

Part 2: Selection criteria relevance:

1. *The pre-seed selection criteria [**Ability to Add Value to Incoming Start-Up**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: Accelerators should be able to add value to new ideas and startups. This may result in rejection of good ideas because accelerators do not believe the can assist the new idea/venture.

2. *The pre-seed selection criteria [**Strong Lead Founder**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: Lead founder has experience and knowledge for starting up a business.

3. *The pre-seed selection criteria [**Technical Expertise**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: The team has the technical expertise to develop the product.

4. *The pre-seed selection criteria [**Working Prototype**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: The team has a working prototype that demonstrates the new idea.

5. *The pre-seed selection criteria [**Incoming Team's Willingness to Listen & Adapt**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: The incoming team is open to feedback and is able to adapt accordingly.

6. *The pre-seed selection criteria [**Idea Solves a Real Problem**] is for pre-seed innovation selection:*

    1. *relevant*

2. *possibly relevant in the future*

3. *irrelevant*

Definition of criteria: The idea solves a real problem for a certain market.

7. *The pre-seed selection criteria [**Demand Validation**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: There is a voice-of-customer type evidence or demand validation.

8. *The pre-seed selection criteria [**Customer Affordability**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: There is evidence that customers can afford the product.

9. *The pre-seed selection criteria [**Market Demographics**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: There is a market size analysis and demographic analysis.

10. *The pre-seed selection criteria [**Concept Maturity**] is for pre-seed innovation selection:*

    1. *relevant*

    2. *possibly relevant in the future*

    3. *irrelevant*

Definition of criteria: The concept can be realized too product.

11. *The pre-seed selection criteria [**Sales & Distribution**] is for pre-seed innovation selection:*

1. *relevant*
2. *possibly relevant in the future*
3. *irrelevant*

Definition of criteria: There are existing sales and distribution channels.

12. *The pre-seed selection criteria [**Product Maturity**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: There is evidence of the functional feasibility of the product.

13. *The pre-seed selection criteria [**Value Proposition**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: There is evidence of tangible or intangible benefits for customers.

14. *The pre-seed selection criteria [**Technology Expertise**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: There is a product development skill set in the startup team.

15. *The pre-seed selection criteria [**Sustainable Advantage**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: Advantages that are not easily available by competitors.

16. *The pre-seed selection criteria [**Prior Startup Experience**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: There is prior entrepreneurship experience in the startup team.

17. *The pre-seed selection criteria [**Feedback Mechanism**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: The teams ability to listen en respond to customers.

18. *The pre-seed selection criteria [**Growth Strategy**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: There are strategies and potential for future growth.

19. *The pre-seed selection criteria [**Key Success Factor Stability**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: The change of requirements necessary for success during industry development.

20. *The pre-seed selection criteria [**Timing of Entry**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: Timing of entering the industry's stage of development.

21. *The pre-seed selection criteria [**Lead Time**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: Period of monopoly for the first entrant prior to competitors entering the industry.

22. *The pre-seed selection criteria [**Competitive Rivalry**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: The amount of competition among industry members during industry development.

23. *The pre-seed selection criteria [**Educational Capability**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: The amount of resources and skills available to overcome market ignorance through education.

24. *The pre-seed selection criteria [**Industry Related Competence**] is for pre-seed innovation selection:*

    1. *relevant*
    2. *possibly relevant in the future*
    3. *irrelevant*

Definition of criteria: Experience and knowledge with the industry being entered on a related industry.

Part 3: Selection criteria importance:

25. *Please indicate the level of importance of the pre-seed selection criteria on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.*

	(1) unimportant	(2) somewhat important	(3) quite important	(4) very important	(5) extremely important
(Accelerator's) Ability to Add Value to Incoming Start-Up	☐	☐	☐	☐	☐
Strong Lead Founder	☐	☐	☐	☐	☐
Technical Expertise	☐	☐	☐	☐	☐
Working Prototype	☐	☐	☐	☐	☐
Incoming Team's Willingness to Listen & Adapt	☐	☐	☐	☐	☐
Idea Solves a Real Problem	☐	☐	☐	☐	☐
Demand Validation	☐	☐	☐	☐	☐
Customer Affordability	☐	☐	☐	☐	☐
Market Demographics	☐	☐	☐	☐	☐
Concept Maturity	☐	☐	☐	☐	☐
Sales & Distribution	☐	☐	☐	☐	☐
Product Maturity	☐	☐	☐	☐	☐
Value Proposition	☐	☐	☐	☐	☐
Technology Expertise	☐	☐	☐	☐	☐
Sustainable Advantage	☐	☐	☐	☐	☐
Prior Startup Experience	☐	☐	☐	☐	☐
Feedback Mechanism	☐	☐	☐	☐	☐
Growth Strategy	☐	☐	☐	☐	☐
Key Success Factor Stability	☐	☐	☐	☐	☐
Timing of Entry	☐	☐	☐	☐	☐
Lead Time	☐	☐	☐	☐	☐
Competitive Rivalry	☐	☐	☐	☐	☐
Educational Capability	☐	☐	☐	☐	☐
Industry Related Competence	☐	☐	☐	☐	☐

Note: Definitions will be added with an information symbol at each criteria in the online format.

Appendix D: Panel Interview Protocol

Sub question 5:

Questions ICAs and pre-seed phase:

1. *What are the conditions to include external collaborations into ICA programs?*
2. *Will ICAs remain ICAs when external collaborations are included? And will that strengthen the main goals of ICAs, both employee development and idea generation?*
3. *What determines the length of pre-seed phase? Is that the first major funding or first customer? And is the length of the pre-seed phase ICA specific and different for each company?*
4. *Is the amount of gates in the pre-seed phase company specific between different ICAs?*

Questions pre-seed selection criteria:

1. *Do you agree with the statement: ''Each gate requires a different set of selection criteria not only for idea evaluation but also for team evaluation''*
2. *What are contextual factors that determine the selection criteria for each gate? Mentioned in the interviews was setup of the program. Can you please elaborate on that?*
3. *Different expertise is required in each stage. What team evaluation criteria are important for GATE 1 'initial screening'?*
4. *What team evaluation criteria are important for GATE 2 'final selection'?*
5. *Do most ICA programs start lean with their selection process? Is that also the case for ECAs?*
6. *Based on the interviews three criteria were added to the list from the literature on ICAs and Corporate Accelerators. Namely, strategic fit, investment cost and validation effort. Why are these important for TenneT employees?*
7. *Why do you think the criteria ''(accelerators) ability to add value to incoming start-up'' is not relevant according to most respondents?*
8. *Why do you think the criteria ''strong lead founder'' is not relevant according to the respondents?*
9. *Why do you think the criteria ''incomings teams willingness to listen & adapt'' is highly relevant for both stages?*
10. *Why do you think the criteria ''idea solves real problem'' is highly relevant according to the respondents?*
11. *What do you think of the differences and similarities between GATE 1 and GATE 2?*
12. *Do you think the results would differ much for other ICAs?*
13. *Why do you think there are so many similarities in relevance of pre-seed selection criteria between TenneT POWERLab developers and other innovation initiatives?*

14. *Do you think a universal framework can be used or adapted to other programs within TenneT? Would you please elaborate in which context?*

15. *Do you think the presented framework can be used or adapted to other organizations in the energy or infrastructure domain? Why or why not? Would you please elaborate in which context?*

16. *What do you think would be the main limitations?*

Appendix E: Coding of the interviews

| Interviewee	Code Group	Code
Developers TenneT POWERLab	Reasons for ICA program	Corporate inertia, employee development, Ways to innovate, early-stage idea development, validation, cultural change, innovate core business
"	Characteristics POWERLab	Setup of ICA programs, tailor solution, entrepreneurial environment, employee ownership
"	Characteristics pre-seed phase	Prove problem, market needs defined, problem relevance, idea traction, engagement
"	Differences between stage-gates	Goals, Technology Readiness Level (TRL), leanness, required qualities, KPIs, coaches, weight of criteria, skill sets
Manager Digitalisation & Flexibility	Characteristics Digitalisation & Flexibility portfolio	Strategic impact digital, Strategic impact flex, business plan requirement, portfolio approach, tracking innovation, indicating innovation gaps
Manager Innovation Portfolio	Characteristics Innovation Portfolio	Strategic impact, low entry barrier, portfolio approach, tracking innovation, indicating innovation gaps
Manager Acceleration Room	Characteristics Acceleration Room	Virtual room, strategic fit, knowledge sharing, external partnerships, innovation hub, workshops, support
All interviewees	Pre-seed selection criteria	Diversity, motivation, desirability, feasibility, viability, relatedness, potential to scale, digitalization, radical innovation, fit scope of the program, innovating the core, financial benefit, willingness to learn, breaking path dependency, regulatory fit, strategic fit, capability to learn, stakeholder relevance, problem existence, availability external solutions, market needs, availability project sponsor, validation efforts, time to execution

Appendix F: Organogram TenneT
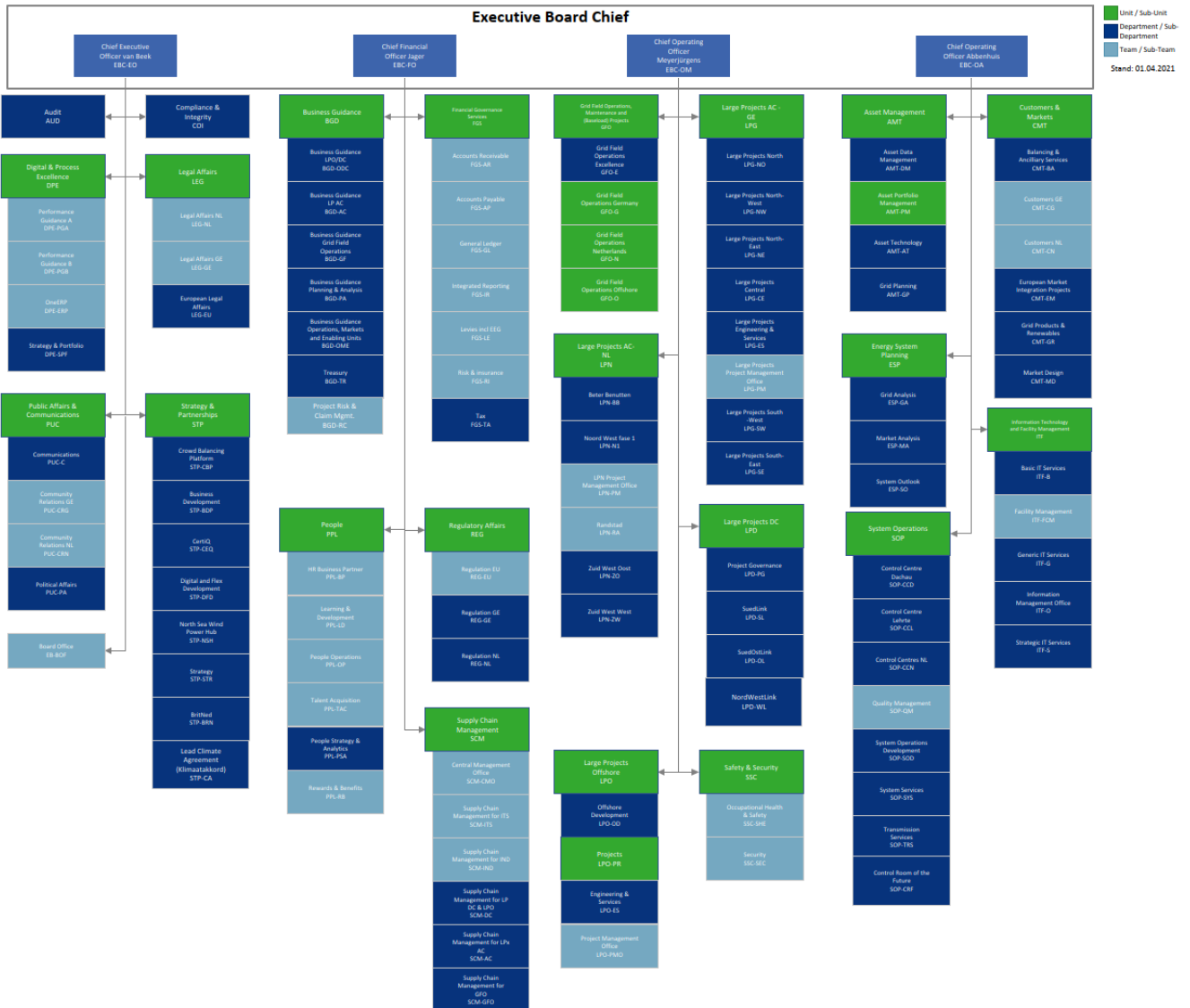
Appendix G: Internal documents

Intrapreneurship@TenneT

Jannis Kuhrt, Kristin Kerwitz, Dr. Melih Kurt, Melanie Vasold, Alexander Visser

TenneT **POWER** Lab
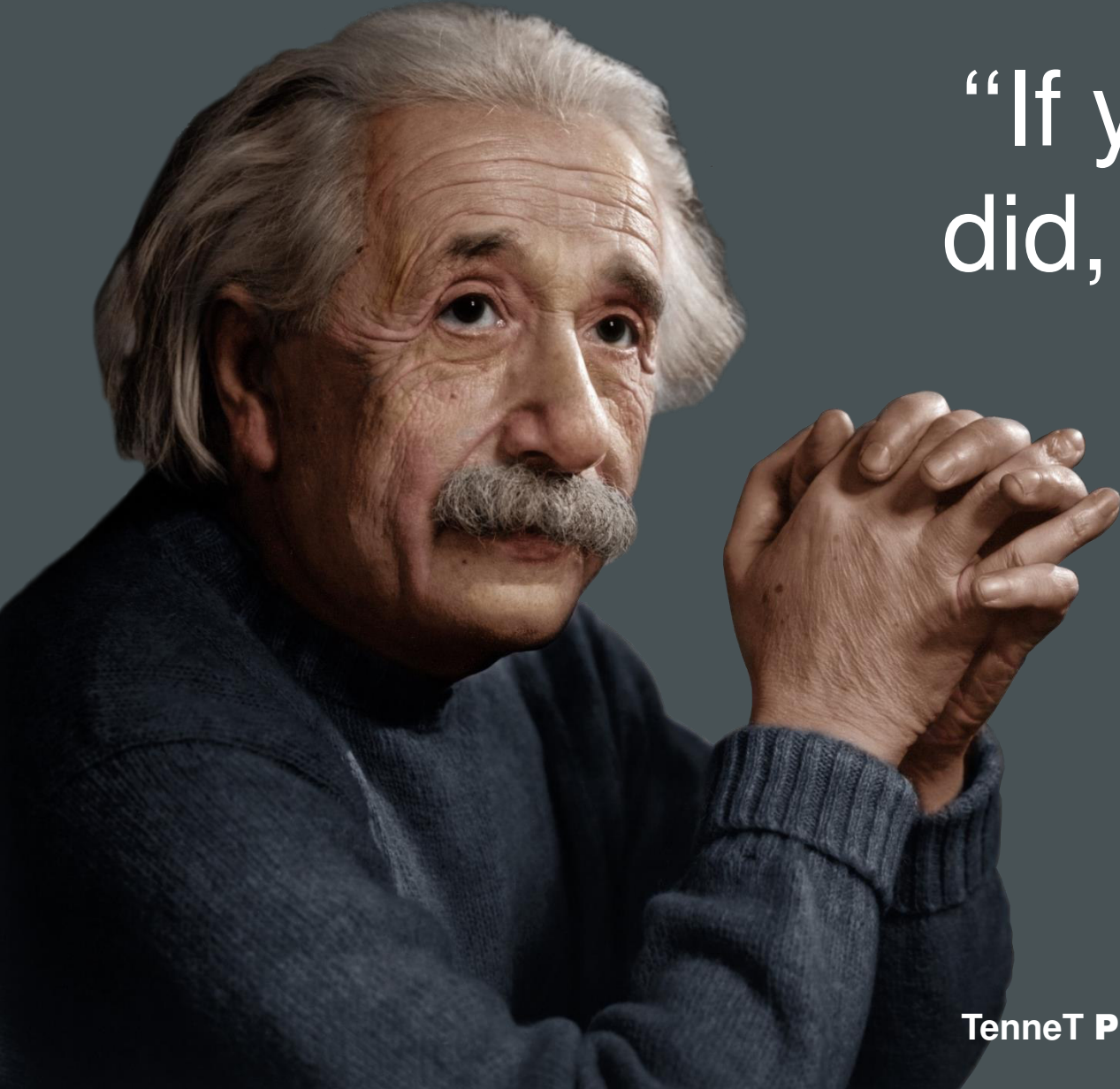
"If you do what you ever did, you will get what you always got"

Albert Einstein

TenneT **POWER** Lab

WHAT **IS THE CHALLENGE?**

"TenneT is not facing a life threatening situation (yet) but **needs to master change.** Enlarging our focus

from an asset to a **data driven company,** from business as usual to **doubling the output,** from managing the present to **shaping the future,**

We therefore see Intrapreneurship as one vehicle to **enable cultural & creative change** with the benefit of innovation"

Jannis Kuhrt

TenneT POWER Lab

WHY **INTRAPRENEURSHIP?**

"It's the operationalization of what we anyway need to do:
to '**Energise our people and organisation**'

Gerrit Jan-Kappers
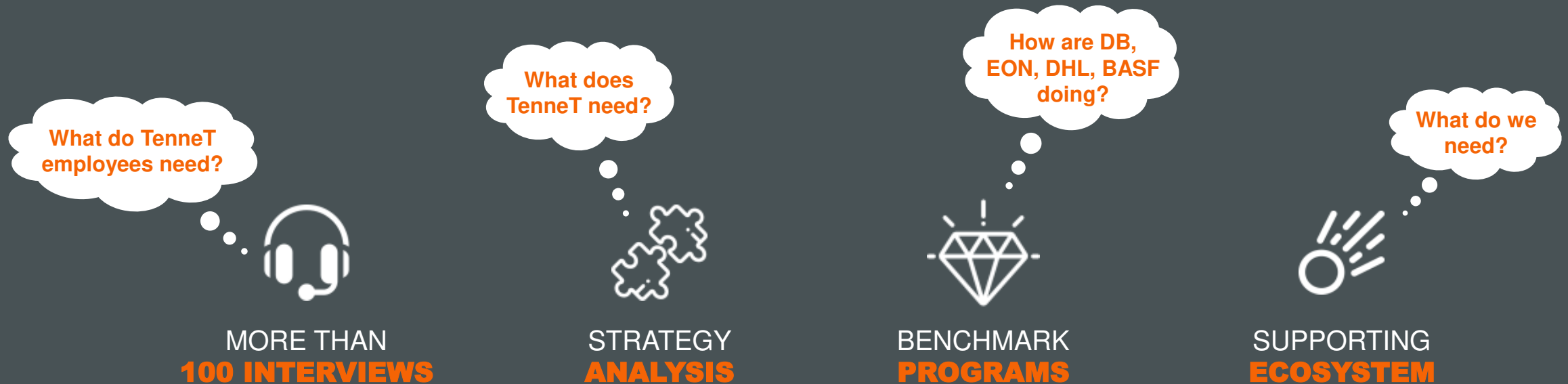
TenneT POWER Lab

HOW **WE MAKE IT HAPPEN?**

With the **TenneT POWER Lab**,
we **enable** our employees to **solve existing problems**
in an **entrepreneurial way** by

Providing the chance to **take responsibility** and **be visible**
Creating a **creative and non-bureaucratic environment**
Supporting a **boost in skillset & opportunities**
Fostering **self-determined working**
Strengthen **networking**

TenneT POWER Lab

PHASE 0
Engagement & Submission

Open TenneT-wide application phase to **explore & exploit problem areas** with connection to Innovation thesis:

INNOVATE THE CORE & NEW WORK

ACTIVITIES
Communication & Engagement
Coaching in problem thinking
Networking with experts

PHASE 1
Explore

Prove that your **problems exist**, are big enough & can be solved. Finalize 80% of your Business Model.

ACTIVITIES
Desk research
Customer interviews

SUPPORT
Business Model Coaching
Networking & Education

DURATION
3 months

PHASE 2
Develop

Prove that your **solution solves the problem**

ACTIVITIES
Prototyping
Experiments

SUPPORT
Venture Architect Coaching
Technical Experts
Networking

DURATION
3 months

PHASE 3
Scale

Scale your solution and implement

ACTIVITIES
Minimum viable product
User testing
Business model validation
Implementation

SUPPORT
Venture Architect Coaching
Technical Experts

DURATION
3 months

TenneT

BENEFITS FOR BUSINESS UNITS

Rapid validation of ideas and solutions through user-centric testing

Access to network within TenneT and to outside entrepreneurship and new work experts

Cost-efficient way of working through agile and iterative processes in startup-like structures

Possibility to tackle challenges with **cross-functional teams** guided by experienced **innovation coaches**

Employee enablement and development in agile methods (Design Thinking, Lean Startup…) and into entrepreneurial behavior

Validated concept that guarantees **compliance with corporate policies**

TenneT **POWER** Lab

INTRAPRENEURSHIP IN CONTEXT

INNOVATION MANAGEMENT + Early-stage and user-centric testing of ideas, deal flow for Innovation Portfolio

Operationalization of New Work principles, methods and tools + **NEW WORK**

PEOPLE DEVELOPMENT + Implementation of action-oriented learning approach

Identification of cases relevant to growth + **DiCE**

TenneT **POWER** Lab

SUPPORTING ECOSYSTEM

Götz Görgen

Jan-Paul Dijckmans

Dennis Stufkens

Johannes Böhner

Margriet Rouhof

Jeroen Dicker

Ingo Schmidt

Carina Krastel-Hoek

Laurens Groenhuizen

Edsart Krijger

Gerrit Jan Kappers

Jan van der Lee

Axel Kießling

Florian Dotzler

Christine Schneider

Jan Nico Blauw

Yvonne Visser-Stam

CEO **CFO**

COO **COO**

Robert Kuik

Florian Martin

Thijs Schuring

Alan Croes

Carsten Pflanz

Laurent Perraut

Marcus Rohleder

Helmut Sailer

Johannes von Schkopp

Frank Wester

Melanie Bunke

Burim Salihu

Bas Wismans

Markus Glatfeld

Derk Folkers

Benjamin Hühnerbein

Dominique Ernst

Kathrin Ballerstein

Loek Bakker

Menno van Oostveen

Madeleine Dollmantel

Stefan Bönig

Susana de Graaff

Thorsten Dietz

Samuel Glisman

TenneT POWER Lab

What are our NEXT STEPS?

Finalization of **internal staffing** and support (alignment of resources with DiCE & STP) **until end of Feb**

Selection of **external partners** (e.g. WhatAVenture, Founderslane, WhatIf) **until end of Feb**

Specification of detailed program description **until end of March**

Set up **internal Communication** Strategy **until end of April**

Communication of program **until end of May**

Start Engagement Phase June 2021

Collaboration Generation Funnel

Jorinde Bettink

Ariette Franke-Sluijk

Bas Swinkels

TenneT

Agenda

01 Overview on tools to capture new ideas

02 Collaboration Generation Funnel

03 Details awareness & evaluation phase

04 STP Cafe

TenneT
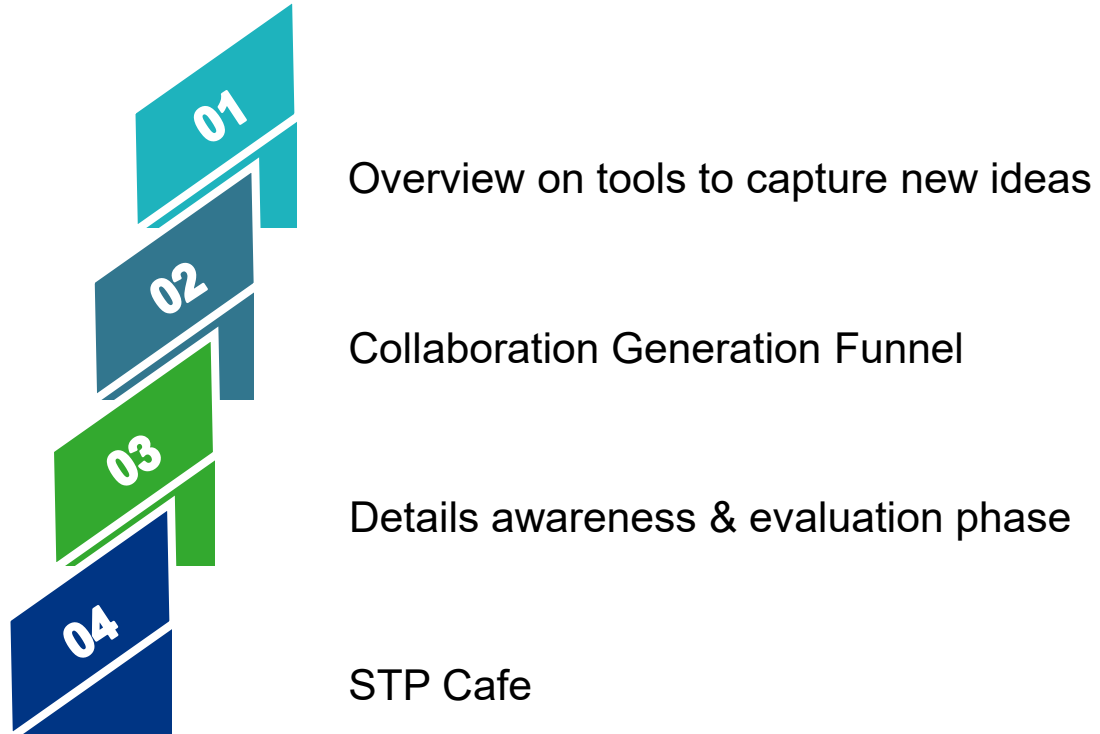
Overview of initiatives to capture and drive new innovation

Initiatives	Description	Dept.
TenneT POWER Lab	A tailored-made intrapreneurship program for TenneT. This initiative will provide a learning traject for bringing internal ideas further and tackle challenges that are relevant for the core business.	EB-BOF
Acceleration room	Accelerate innovation within TenneT and external. This includes also initiatives as the watch towers, roundtable and crowd sourcing initiatives.	STP-STR
"Digital Data Days"	A returning webinar, organised by TenneT, with the main aim to support TenneT's Flex, Digital and Innovation portfolio. The conferences ultimately support the closing of the gaps of the three portfolio's.	STP-DFD
Start-Up Program	Start-ups will be invited to pitch their ideas on various TenneT challenges. The selected start-ups will be mentored by TenneT to make sure the start-up does understand the challenges from TenneT and therefore, a concrete pilot project can be set-up.	STP-BDP
"Subsidiary search"	Search for interesting companies which can support and secure TenneT's position as a front runner in the energy transition. Invest in the company and become . This option is between start-up fund and an own Corporate Venture fund.	
TenneT Corporate Venture Fund	Set-up a own corporate venture fund, in which other TSO's (or banks) can join as LP's. The main aim is to increase tailored information for TenneT derived from this fund.	
Corporate Venture Program	TenneT is investing in Corporate Ventures (CV): Westly fund III and SET Venture fund II and III. The main aim is to provide insight into industry trends from start-up activities, new business cases, offering opportunities for TenneT to cooperate.	

Internal focus ↕

External focus ↕

Legend: Existing · Work in progress · Under Investigation

TenneT

Insights on TenneT Corporate Venture Program

TenneT Corporate Venture Program

The aim of TenneT's Corporate Venture Program is to support and secure TenneT's position as a front runner in the energy transition, equipped with cutting-edge technology, information, and skills. The Corporate Venture Program provides TenneT insight into industry trends from start-up activities, including offering opportunities for TenneT to cooperate with and potentially invest in relevant start-up companies.
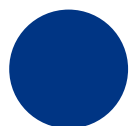
SET Ventures Fund II

European technology companies that impact the energy industry and are active in the sustainable generation, distribution/storage and/or use of energy. Fund II is focused on smart energy.

EUR 5.0 million
March 2017- 2027

SET Ventures Fund III

Focuses on innovative energy generation, distribution, storage and energy efficiency.

EUR 4.6 million
Dec 2019 - 2029

Westley Fund III

The Westly Group is a Silicon Vally based venture capitalist with a focus on energy, utility and sustainability in North America. Westly Fund III invest 60-70% in energy related companies.

EUR 5.0 million
Dec 2017 - 2027
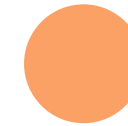
Westley Fund IV

Group Fund IV will focus on Smart energy, smart mobility, smart buildings / cities / industry 4.0.

~EUR 5.0 million
Pending

Collaboration Generation Funnel

Units

Funnel

Description

Tools

STP			

Awareness

Broad range of input for **Inspiration** on **market developments** and **potential companies of interest** to TenneT

Venture Capital	Watch Towers	Start-up Program	Round-table

STP + SPOC			

Interest

Core group to **evaluate potential leads**, **collect ideas** and maintain internal **level playing field**

Start-up Program	Hackaton	Contest	TenneT Powerlab	Crowd Sourcing

Consideration

Dedicated meetings with potential company follow after pre-selection by core group with internal SPOCs

Spocs

STP + unit			

Evaluation

Internal evaluation, incl. company check, to be translated in **recommendation**

Criteria

Intent

Express **intent to start collaboration** and discuss collaboration format. Internal process

Partner-Ship	Accel. Room

Partnership Commitment

Awareness: Information dissemination

For CVs, but also useful for other external scouting sources

External Input

- *Gather Information:* latest market trends, new technologies, insight in newest start-ups and new business cases, interviews
- *How*: e.g. data bases, meetings, strategy sharing

Input Corporate Ventures

- *Gather Information:* latest market trends, new technologies, insight in newest start-ups and new business cases, interviews
- *How:* e.g. research articles, meetings, strategy sharing, acceleration room

Input external scouting sources

Internal Input

- *Information:* Stay up-to-date of what other departments are looking
- *How:* using Portfolio Management (flex gaps, Digital value pools, innovation
- *Connection:* stay in close with departments (e.g. STP-Café)

Upcoming challenges TenneT

Combine external and internal knowledge & start disseminating information within TenneT

1. **Short-list input from CV, start-ups, etc**. by checking new trends / technologies on among others business cases, regulation, technical specification and applications
2. **Keep TenneT departments up to date** of the newest trends by inviting them for strategy sessions, share department specific information and the STP trend report. Make use of SPOCS.
3. **Match** the challenges of the departments with possible solutions offered by corporate ventures
4. **Assist** in setting-up of new partnerships for joint projects within TenneT

Evaluation template

Assessing new technologies & initiatives

Evaluation Form

Note: Aligned with input document Flex
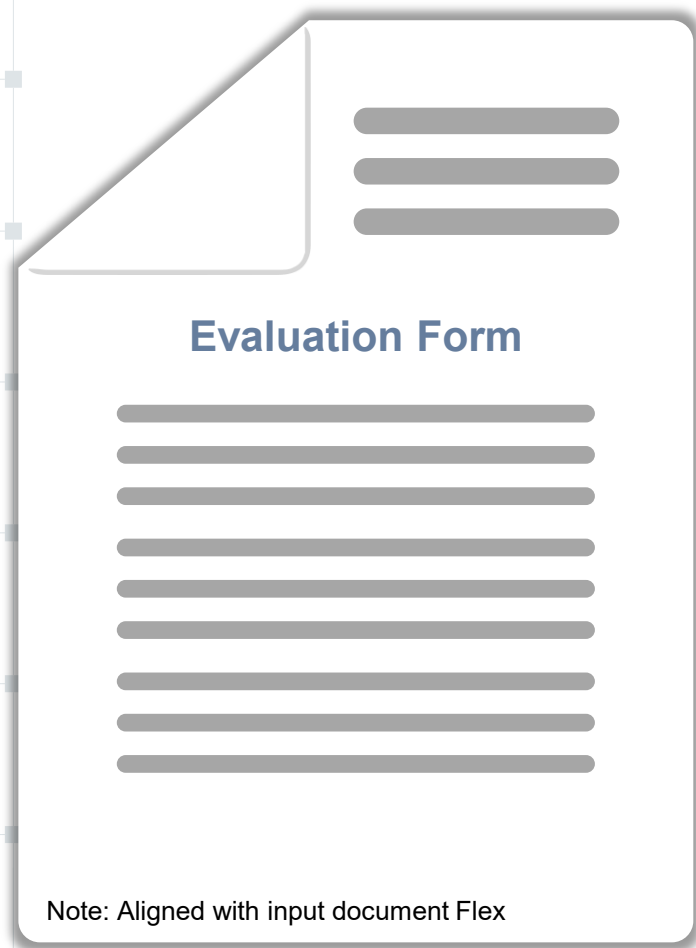
Evaluation Criteria for assessing new technologies / initiatives

- General Company info
    - Who owns the company
    - What partner and vendor dependencies exist
    - Financial Valuation

- Technology
    - How it works
    - Technology Readiness Level (TRL)
    - Application (for TenneT)
    - Alternatives for this technology

- Fit to TenneT
    - Contribution to strategic goals of TenneT
    - Gap closure/value pool realisation
    - New value proposition / New trends that may influence the current strategy of TenneT
    - Potential risks

- Strategic partnerships
    - What could our (past) relation to this company?
    - Win-win situation?
    - Potential hidden agenda's

TenneT

STP sharing knowledge proposal

Collaboration Generation

STP-only

- BDP
Business Development

- DFD
Digital & Flex Development

- STR
Innovation

Weekly Alignment

STP café

For all STP colleagues

- Share knowledge;
- Collaborate more;
- Get inspired by bringing the outside in

Every Six Weeks

Inspiration session

Engage TenneT

Internal or external speaker about challenging subject related to the strategy
.

4x per year

STP cafe – 1,5h virtual meeting

1. Presentation on e.g. a concrete project STP is working on or trend report
2. Requesting for thoughts about a topic (present some background information about topic)
3. Open discussion & knowledge sharing

TenneT

Innovation@TenneT

STP-STR

16 June 2021

Agenda

- **1. Introduction Innovation@TenneT**

- 2. Acceleration Room

- 3. Portfolio Approach

- 4. Overview Programs

Introduction Innovation@TenneT

The successful exploration and exploitation of new ideas to create value for the company and society

~5200 Innovators at TenneT

Crucial for successful reach of TenneT's strategy & challenges of the future

STP
Facilitate
Support
Connect

16 June 2021

Overview: Innovation Process
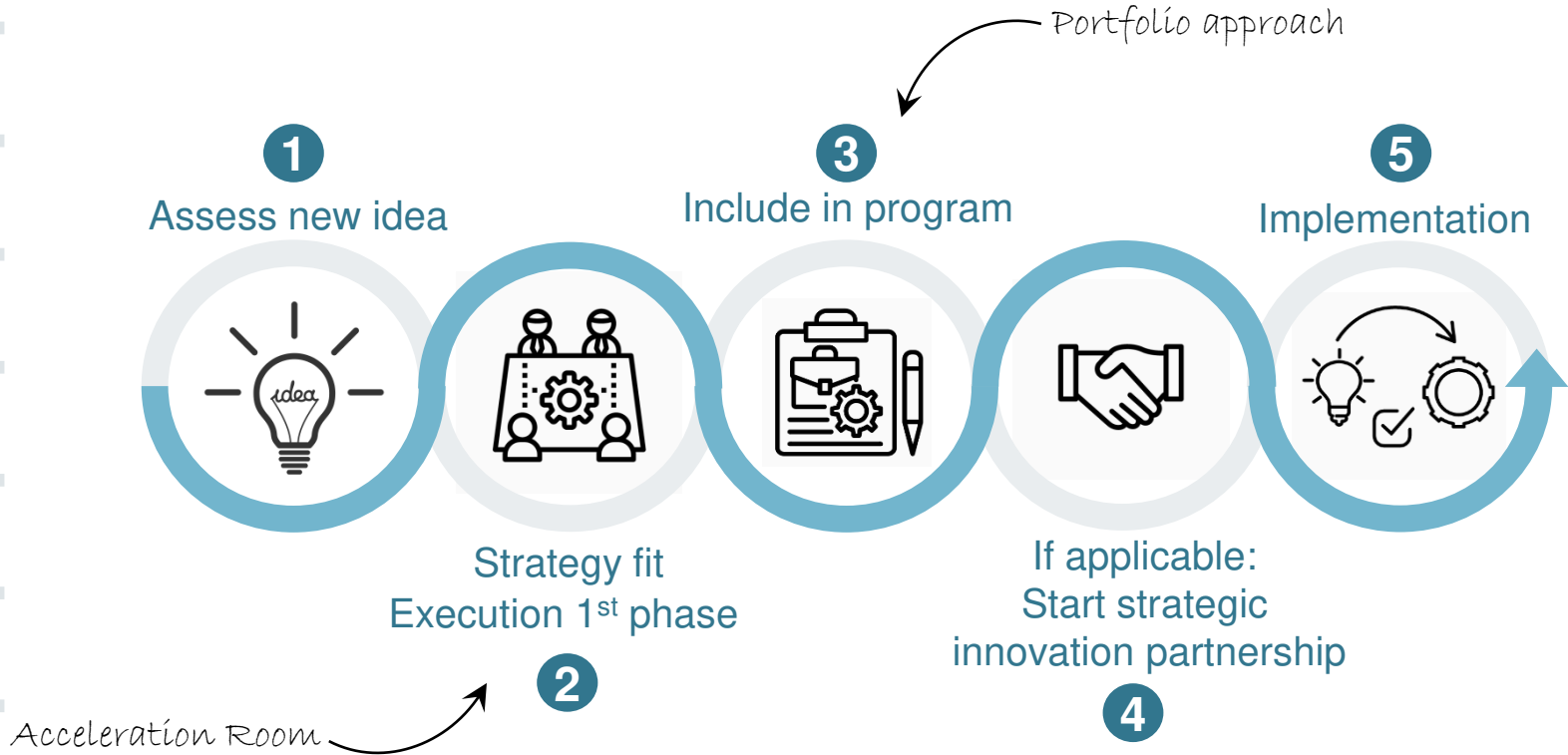
Portfolio approach

1 Assess new idea

3 Include in program

5 Implementation

Strategy fit
Execution 1st phase

2

If applicable:
Start strategic
innovation partnership

4

Acceleration Room

Agenda

- 1. Introduction Innovation@TenneT

- **2. Acceleration Room**

- 3. Portfolio Approach

- 4. Overview Programs

Acceleration Room

Why?

Not all ideas can be facilitated
by the units:
- Ideas out of daily scope are not fostered
- Lacking experience/knowledge/ connections
- Strategic advantage is not clear yet (needs to be studied/ researched)

What?

- Speed up/enrich ideas
- Find optimal process forward
- Create breakthrough
- Create environment for people to faster develop their idea

How?

Connect: internal, external
→ Strategic innovation partnerships
→ Innovation hub
Learn: from each other
Develop: creating next steps
Enable: deliver right conditions
Share: increase effectiveness

Acceleration Room for Innovation
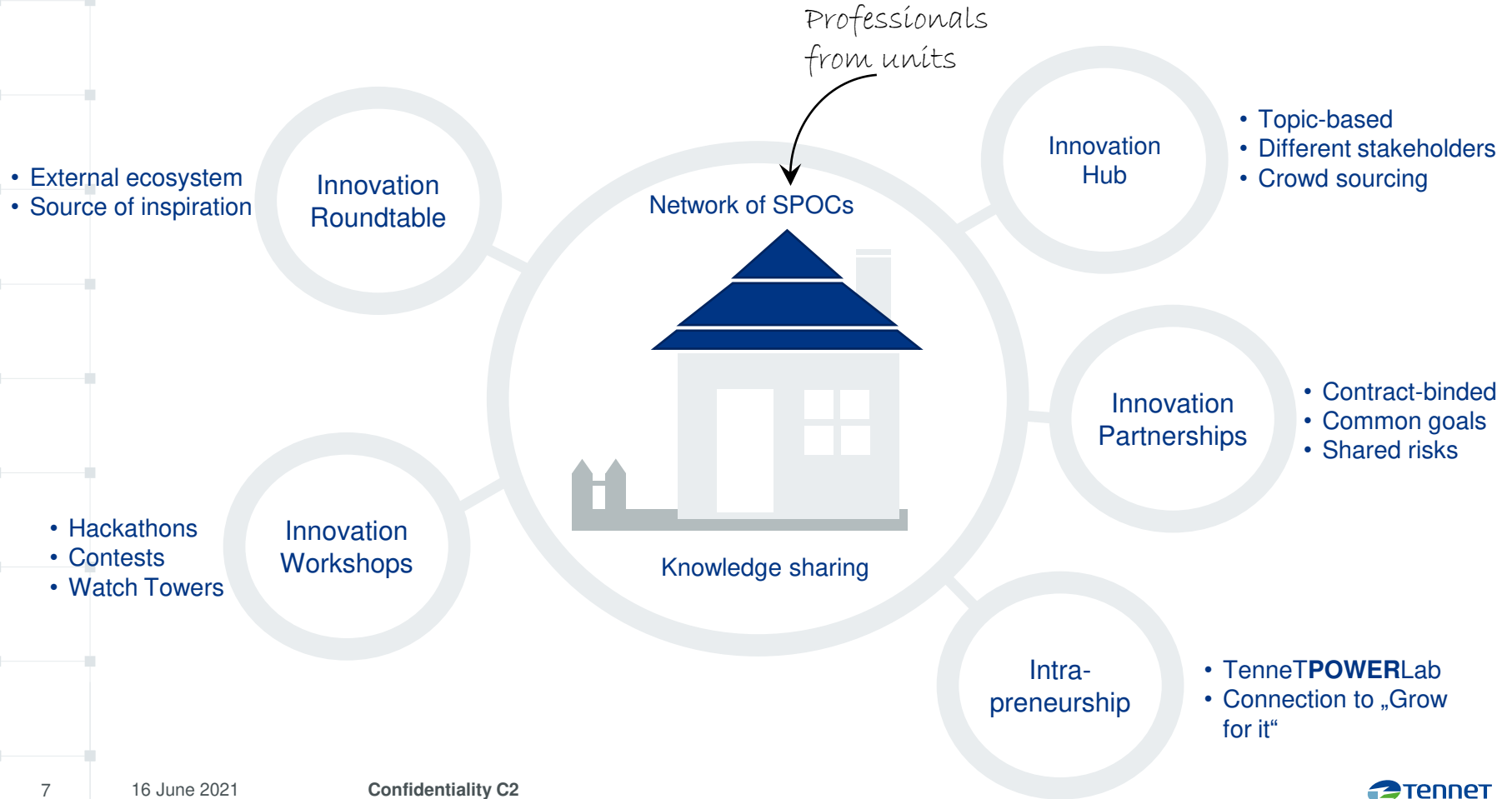
Professionals from units

• External ecosystem
• Source of inspiration

Innovation Roundtable

Network of SPOCs

Innovation Hub

• Topic-based
• Different stakeholders
• Crowd sourcing

Innovation Partnerships

• Contract-binded
• Common goals
• Shared risks

• Hackathons
• Contests
• Watch Towers

Innovation Workshops

Knowledge sharing

Intra-preneurship

• TenneT**POWER**Lab
• Connection to „Grow for it"

Agenda

● 1. Introduction Innovation@TenneT

● 2. Acceleration Room

● 3. Portfolio Approach

● 4. Overview Programs

Steering different types of innovation
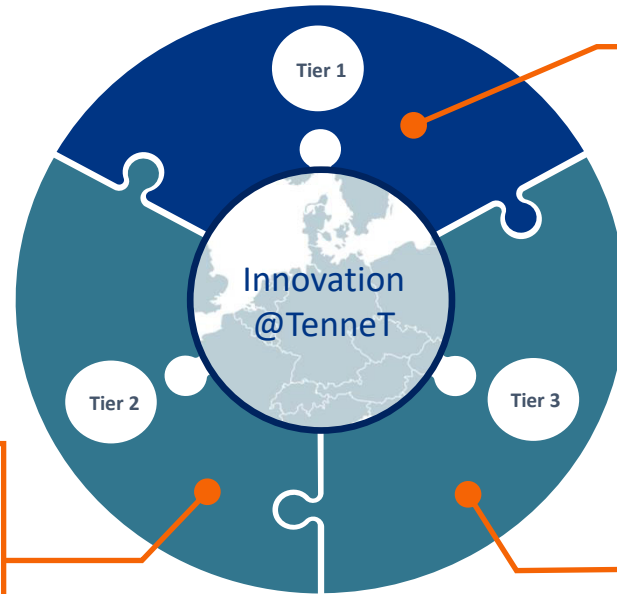
- Activities and Innovations with direct impact on our strategic pillars
- Central coordination
- Funding centrally assigned by Strategy & Partnership
- Decision on contribution to strategy via Future Design Committee

Portfolio Steering

Tier 1

Tier 2

Tier 3

Innovation
@TenneT

- Innovation with two or more units involved
- Decentralized coordination and report by units
- Funding on unit level via IPP
- Executing innovation

Unit Steering

- Innovation within one unit
- Steering by heads
- Individual innovation and ideas
- For example: Continuous Improvement, „Just-do-it"-projects

People Steering

Steering in a hybrid innovation organization
(Portfolio and Units)

Tier 1

Tier 2&3

Responsibility

Strategy and Partnerships	Tier 1 Innovation Portfolio
Future Design Committee	Innovation Program 1 · Innovation Program 2 · Innovation Program 3
Program steering group	Innovation Project 1.1 · Innovation Project 1.2 · Innovation Project 2.1 · Innovation Project 3.1 · Innovation Project 3.2

Unit budgets assigned as a result of an activity based approach, taking into account:
- Continuous improvements
- Tier 2 and 3 innovation
- Initiatives

Agenda

- 1. Introduction Innovation@TenneT

- 2. Acceleration Room

- 3. Portfolio Approach

- 4. Overview Programs
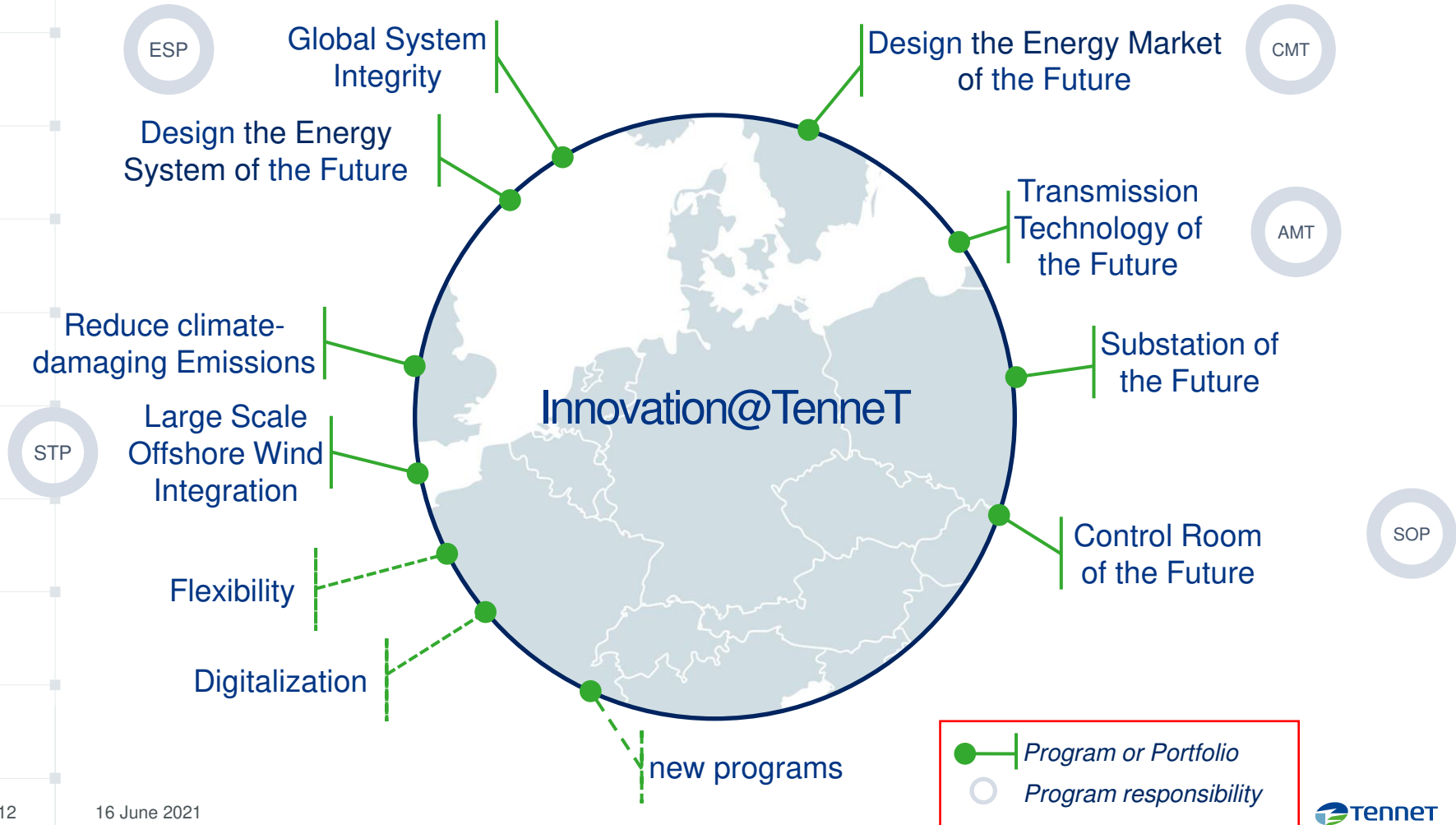
Control Room of the Future

Objectives

+ Develop technologies and data solutions to increase grid utilisation and automation
+ Reshape system operation principles to allow higher grid utilisation and better management of the grid
+ Drive harmonisation and integration of system operations and markets across
+ Design a system for operators to handle existing and new emerging challenges in the future (human aspect/make higher workload feasible)

Projects (update with new Roadmap)

o (AI and the avatar operator)
o Control Centre of the future
o WAMS based operator training module
o Real time simulation N-1
o Software controlled serial switching support in control room
o Validation D-2, D-1 prognoses wind and solar

Related Programs & Projects

o InnoSys2030
o Kopernikus Ensure

Energise our people and organisation

Secure supply today and tomorrow

F6: Enhance control centers operation and interoperability

CP Cyber-Physical System

SOP ITF STP

SOP

Global System Integrity

Objectives

+ Provide electrical system design of extendable multi-vendor, multi-terminal, multi-purpose HVDC grids for the integration of large offshore wind in North Sea to the TenneT network and the development of onshore long distance bulk transmission onshore
+ Reduce the risks of interoperability in multi-vendor HVDC grids in the basic design phase of the projects
+ Support the development of correct functional requirements and standard interfaces for multi-vendor HVDC grids in order to make future projects risk free and cost effective

Projects

o Under development: ENTSO-E interoperability workstream sets up the roadmap for ensuring MVMTMP HVDC grids (with regards to Horizon2020)
o InterOpera
o DemAnDs projects
o OFfshore mUlti-energy hub To sUppoRt powEr SYSTEM stability (FUTURESYSTEM)

Related Programs & Projects

o Large Scale Offshore Wind Integration
o IJmuiden Ver
o Embedded HVDC projects (i.e. Südlink)
o Entso-e RDIC

Secure supply today and tomorrow

LC-GD-2-1-2020: Innovative land-based and offshore renewable energy technologies and their integration into the energy system

F4: Enable large-scale offshore wind energy into the grid;
F5: Secure operation of widespread hybrid AC/DC grid

ESP

16 June 2021

Reduce climate-damaging emissions
„Lead as a green grid operator"

Objectives

+ Reduce direct and indirect CO2-equivalent emissions
+ Procure green electricity to cover grid losses and electricity consumption
+ Compensate remaining environmental impact to meet at least governmental goals

Projects

o CO2-Pricing (Internal and External)
o Alternative Gas Instead of SF6 in 420 kV H-GIS
o Bio-Cooling-Oil
o Procure green electricity to cover grid losses and electricity consumption
o DolWin5 alternative gases

Related Programs

o CSR

Energise our people and organisation

Drive the energy transition

Goal 13: Take urgent action to combat climate change and its impacts

CMT   AMT
STP   GFO

STP

15

16 June 2021

TenneT
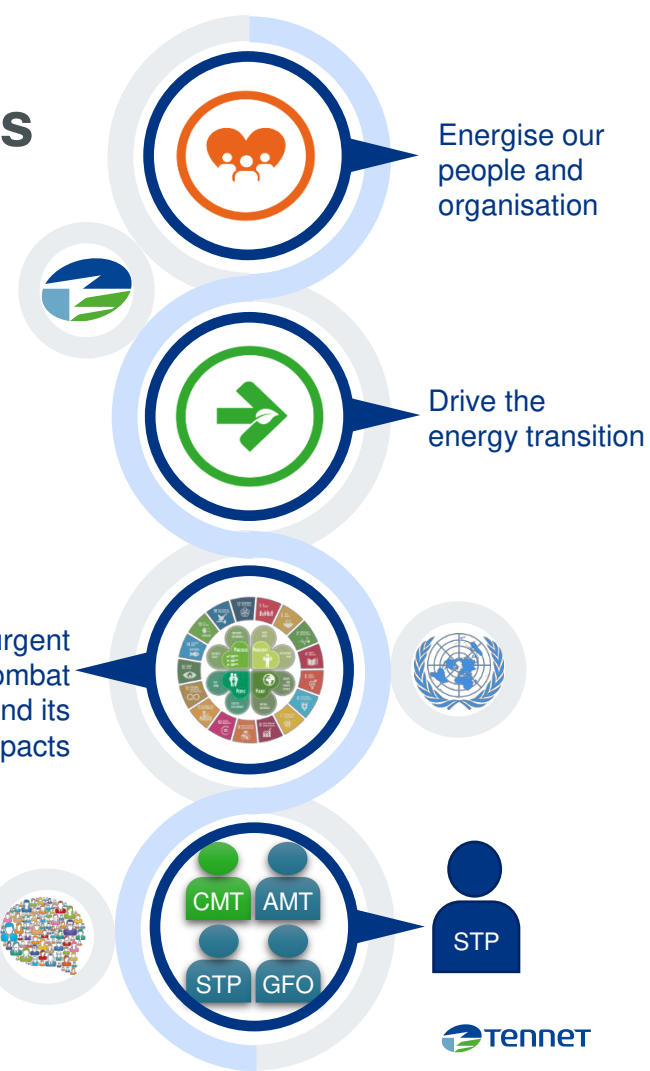
Design the Energy Market of the Future

Objectives

+ Enable market mechanisms that ensure the most efficient safeguarding of the power supply for our increasingly weather-dependent system
+ Bridge the gap between the market outcome and the physical capabilities of the grid, ensuring a safe system operation based on economic efficiency
+ Ensuring the steady improvement of the TSO products' design

Projects

o MarGrET
o Co-optimization between SDAC and balancing capacity
o XB procurement of balancing capacity
o GOPACS

Related Programs & Projects

o Design the Energy System of the Future

Drive the energy transition

Secure supply today and tomorrow

Safeguard our financial health

CMT ESP
STP SOP/AMT

CMT

TenneT

tbd ☺
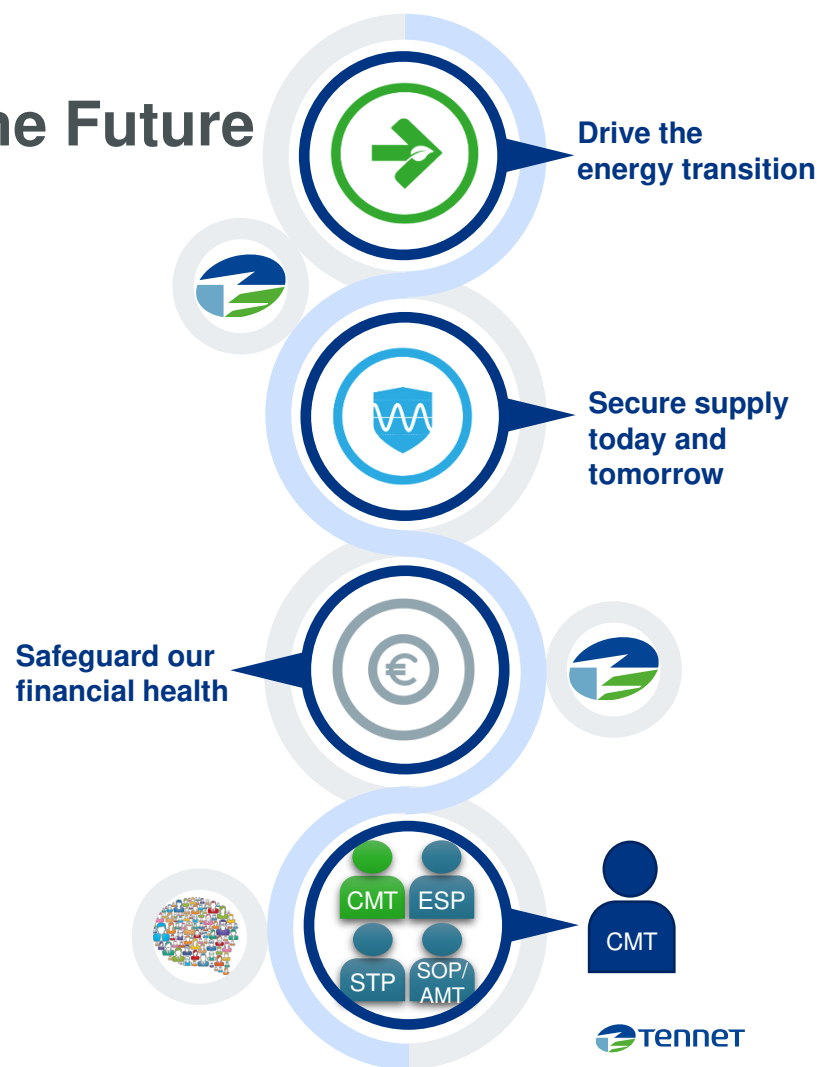
Enable Large Scale Integration of Offshore Wind Energy

Objectives
+ Meet regulatory requirements
+ drive the energy transition

Projects
o PROMOTioN (Offshore), finalized
o Plug in converter
o Wind Connector
o North Sea Offshore Network II (NSON II)
o Control Interaction Studies and Tools for MMC-HVDC converter stations
o Power hub ships for connecting offshore wind parks
o NSWPH

Related Programs
o 2GW-Program

Drive the energy transition

F4: Enable large scale offshore wind energy into the grid

CP Cyber-Physical System

Goal 13: Take urgent action to combat climate change and its impacts

STP   AMT
ESP   GFO

STP

TenneT

Appendix H: Survey data

To limit the file size the file "TenneT POWERLab Thesis Survey - Pre-seed selection criteria (for developers)" can be requested. This file is used to make a comparison between Gate 1 and Gate 2 of the TenneT POWERLab.

The attached data displays the data of the regular survey.

Vragen   **Antwoorden** 5

5 antwoorden

Accepteert antwoorden

Overzicht   Vraag   Individueel

Instructions survey

General Questions

The 'innovation initiative' or portfolio I'm mostly involved in within TenneT is:

5 antwoorden

- ● TenneT POWERLab
- ● Acceleration Room
- ● Innovation Portfolio
- ● Digitalization & Flex Portfolio
- ● Ventures
- ● Corporate venturing
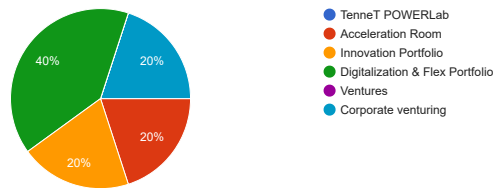
Relevance: Ability to Add Value to Incoming Start-Up (1 out 20)

The pre-seed selection criteria [Ability to Add Value to Incoming Start-Up] is for pre-seed innovation selection:

5 antwoorden

- ● relevant
- ● possibly relevant in the future
- ● irrelevant
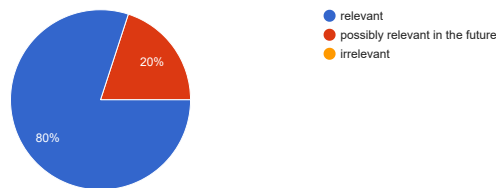
Relevance: Strong Lead Founder (2 out 20)

The pre-seed selection criteria [Strong Lead Founder] is for pre-seed innovation selection:

5 antwoorden

- ● relevant
- ● possibly relevant in the future
- ● irrelevant
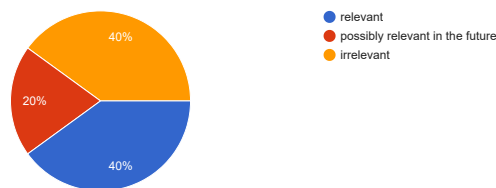
Relevance: Technical Expertise (3 out 20)

The pre-seed selection criteria [Technical Expertise] is for pre-seed innovation selection:

5 antwoorden

- ● relevant
- ● possibly relevant in the future
- ● irrelevant
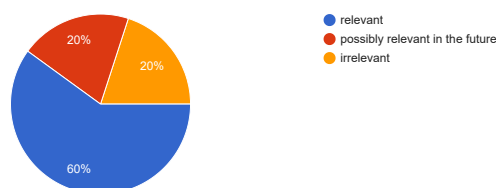
Relevance: Working Prototype (4 out 20)

20%

60%

20%

- relevant
- possibly relevant in the future
- irrelevant
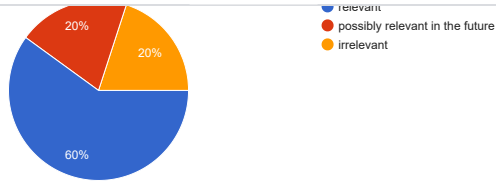
Relevance: Incoming Team's Willingness to Listen & Adapt (5 out 20)

The pre-seed selection criteria [Incoming Team's Willingness to Listen & Adapt] is for pre-seed innovation selection:

5 antwoorden

100%

- relevant
- possibly relevant in the future
- irrelevant
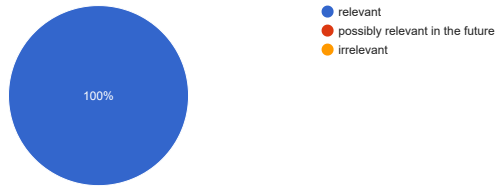
Relevance: Idea Solves a Real Problem (6 out 20)

The pre-seed selection criteria [Idea Solves a Real Problem] is for pre-seed innovation selection:

5 antwoorden

40%

60%

- relevant
- possibly relevant in the future
- irrelevant
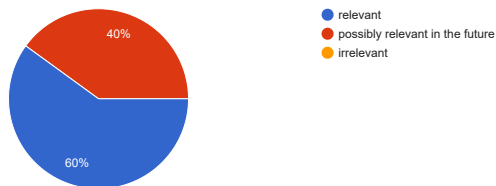
Relevance: Strategic Fit (7 out 20)

The pre-seed selection criteria [Strategic Fit] is for pre-seed innovation selection:

5 antwoorden

100%

- relevant
- possibly relevant in the future
- irrelevant
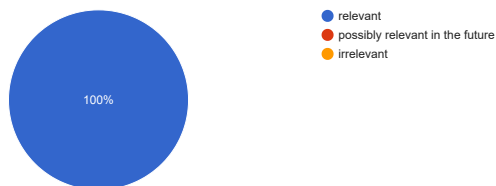
Relevance: Customer Affordability (8 out 20)

The pre-seed selection criteria [Customer Affordability] is for pre-seed innovation selection:

5 antwoorden

40%

40%

20%

- relevant
- possibly relevant in the future
- irrelevant
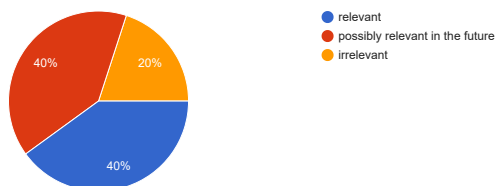
Relevance: Market Demographics (9 out 20)

relevant
possibly relevant in the future
irrelevant

60%

20%

20%
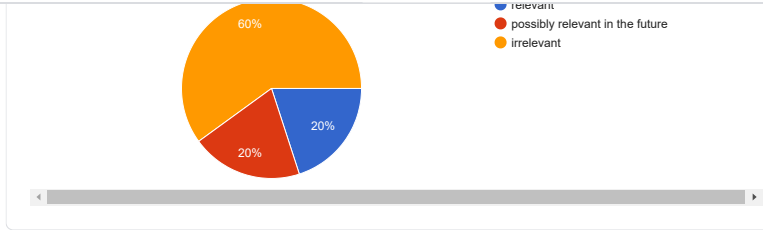
Relevance: Concept Maturity (10 out 20)

The pre-seed selection criteria [Concept Maturity] is for pre-seed innovation selection:

5 antwoorden

- relevant
- possibly relevant in the future
- irrelevant

60%

40%
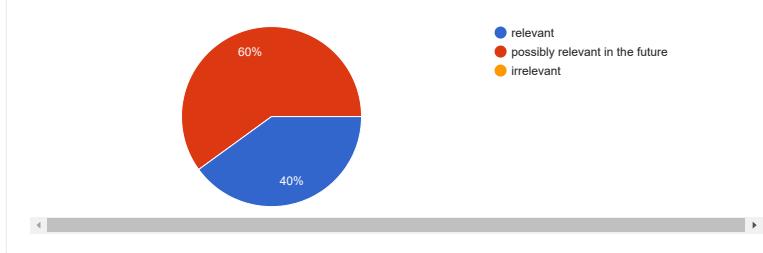
Relevance: Sales & Distribution (11 out 20)

The pre-seed selection criteria [Sales & Distribution] is for pre-seed innovation selection:

5 antwoorden

- relevant
- possibly relevant in the future
- irrelevant

60%

20%

20%
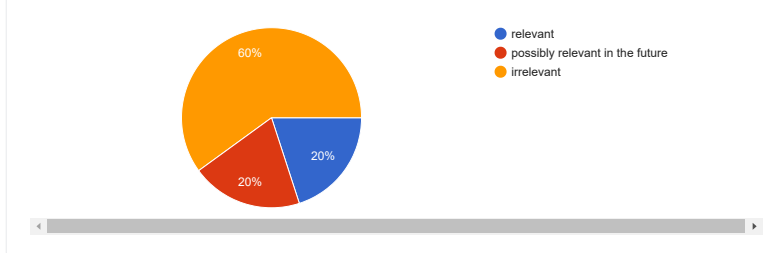
Relevance: Investment Cost (12 out 20)

The pre-seed selection criteria [Investment Cost] is for pre-seed innovation selection:

5 antwoorden

- relevant
- possibly relevant in the future
- irrelevant

40%

60%
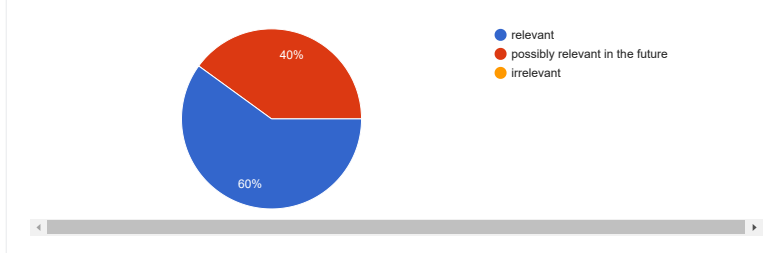
Relevance: Value Proposition (13 out 20)

The pre-seed selection criteria [Value Proposition] is for pre-seed innovation selection:

5 antwoorden

- relevant
- possibly relevant in the future
- irrelevant

100%
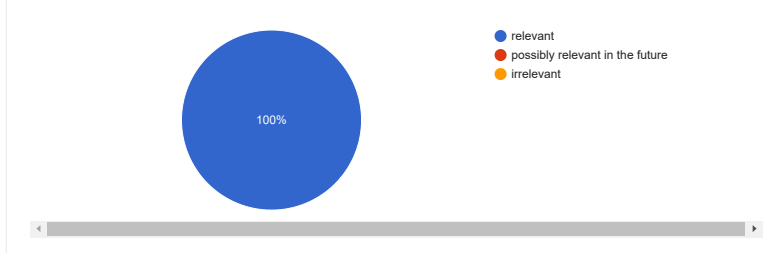
Relevance: Validation Effort (14 out 20)

● relevant
● possibly relevant in the future
● irrelevant
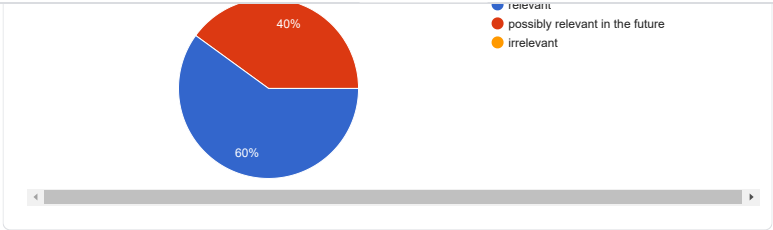
Relevance: Sustainable Advantage (15 out 20)

The pre-seed selection criteria [Sustainable Advantage] is for pre-seed innovation selection:

5 antwoorden

● relevant
● possibly relevant in the future
● irrelevant
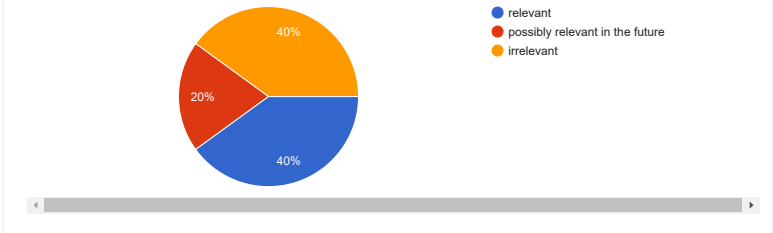
Relevance: Growth Strategy (16 out 20)

The pre-seed selection criteria [Growth Strategy] is for pre-seed innovation selection:

5 antwoorden

● relevant
● possibly relevant in the future
● irrelevant
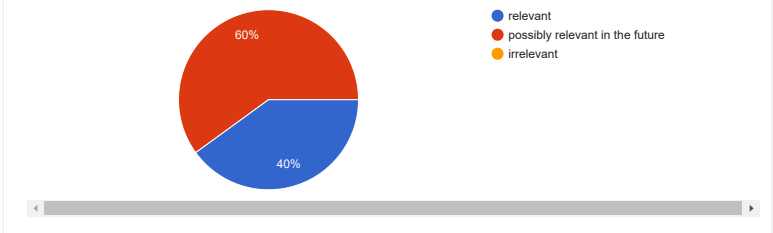
Relevance: Key Success Factor Stability (17 out 20)

The pre-seed selection criteria [Key Success Factor Stability] is for pre-seed innovation selection:

5 antwoorden

● relevant
● possibly relevant in the future
● irrelevant
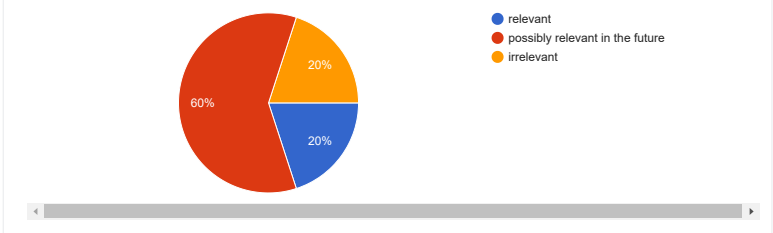
Relevance: Timing of Entry (18 out 20)

The pre-seed selection criteria [Timing of Entry] is for pre-seed innovation selection:

5 antwoorden

● relevant
● possibly relevant in the future
● irrelevant
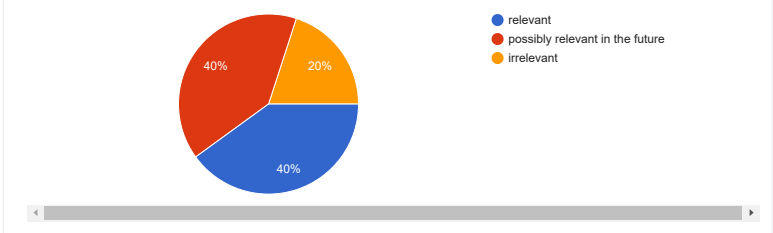
Relevance: Lead Time (19 out 20)

Alle wijzigingen zijn
opgeslagen in Drive

Verzenden

relevant
possibly relevant in the future
irrelevant

60%

20%

20%
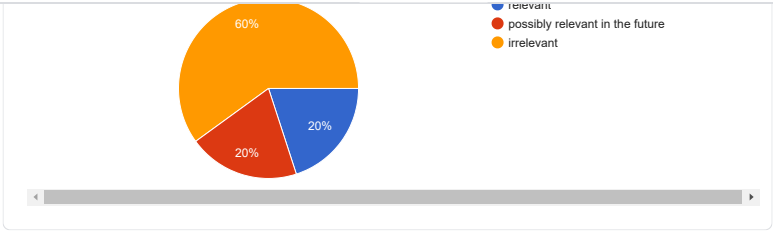
Relevance: Competitive Rivalry (20 out 20)

The pre-seed selection criteria [Competitive Rivalry] is for pre-seed innovation selection:

5 antwoorden

- relevant
- possibly relevant in the future
- irrelevant

40%

40%

20%
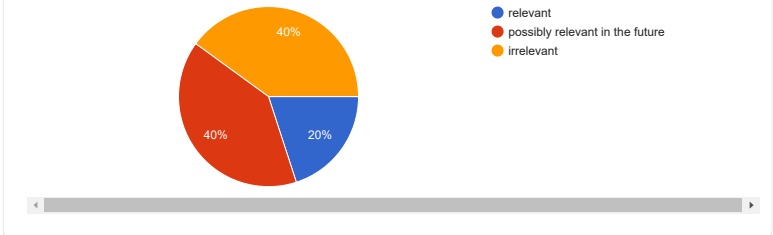
Importance: Ability to Add Value to Incoming Start-Up

Please indicate the level of importance of the pre-seed selection criteria [Ability to Add Value to Incoming Start-Up] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
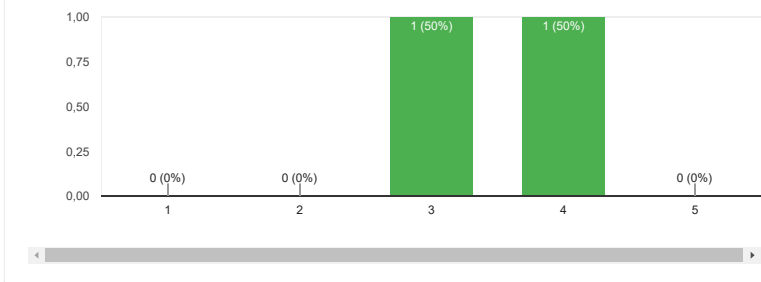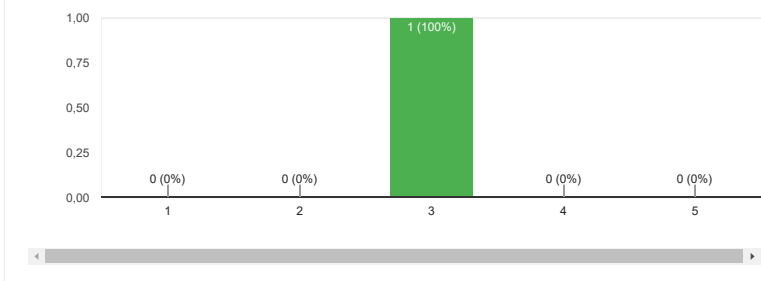
4 antwoorden
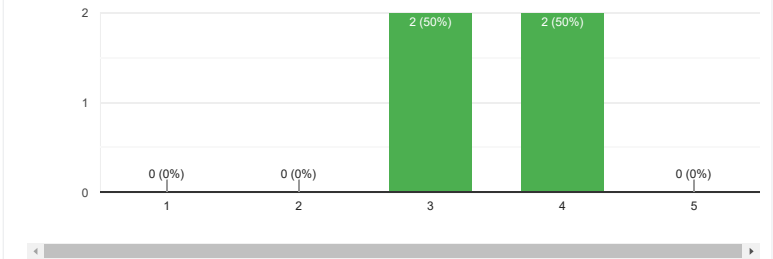
Importance: Strong Lead Founder

Please indicate the level of importance of the pre-seed selection criteria [Strong Lead Founder] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
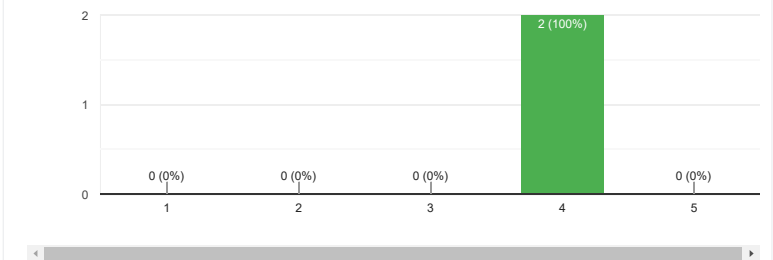
2 antwoorden

Importance: Technical Expertise

3 antwoorden
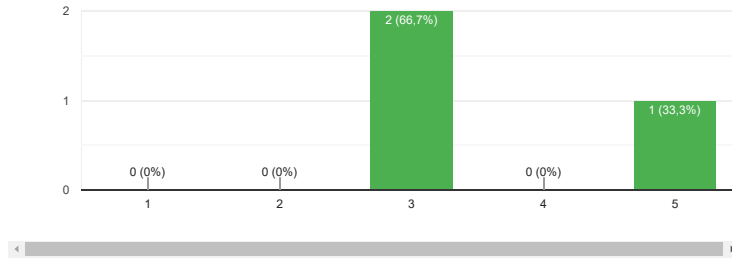
Importance: Working Prototype

Please indicate the level of importance of the pre-seed selection criteria [Working Prototype] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

3 antwoorden
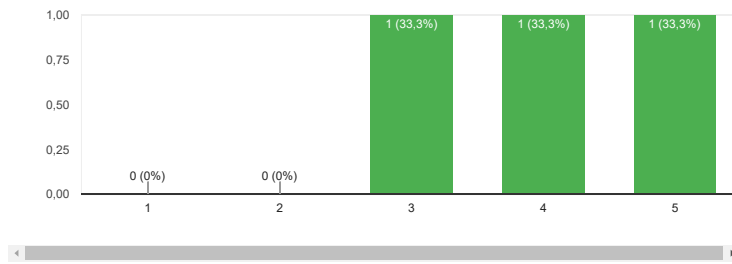

Importance: Incoming Team's Willingness to Listen & Adapt

Please indicate the level of importance of the pre-seed selection criteria [Incoming Team's Willingness to Listen & Adapt] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

5 antwoorden
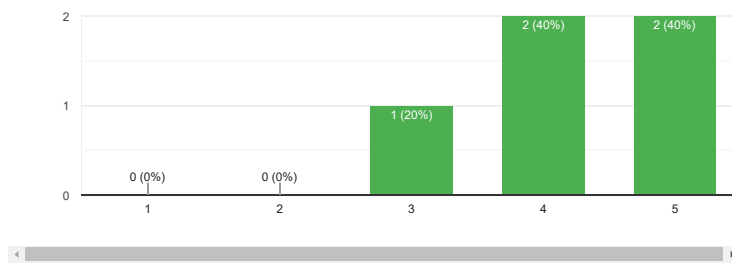
Importance: Idea Solves a Real Problem

Please indicate the level of importance of the pre-seed selection criteria [Idea Solves a Real Problem] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
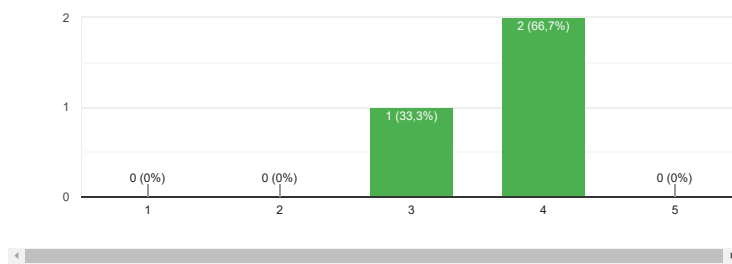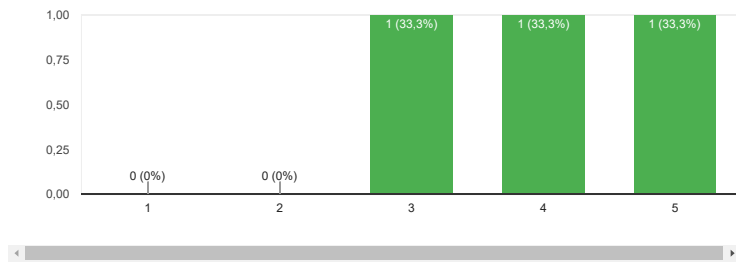
3 antwoorden

Importance: Strategic Fit

5 antwoorden
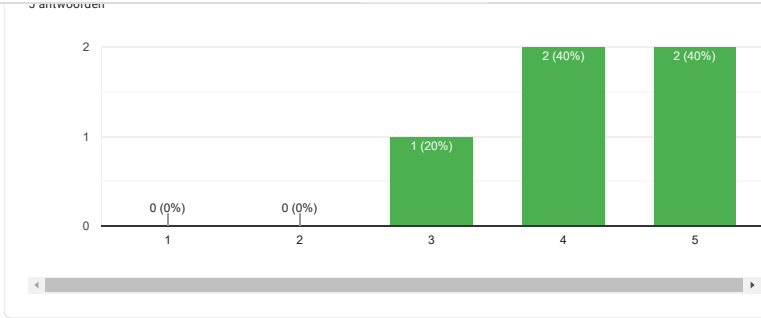
Importance: Customer Affordability

Please indicate the level of importance of the pre-seed selection criteria [Customer Affordability] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

2 antwoorden

Importance: Market Demographics

Please indicate the level of importance of the pre-seed selection criteria [Market Demographics] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

1 antwoord

Importance: Concept Maturity

Please indicate the level of importance of the pre-seed selection criteria [Concept Maturity] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

2 antwoorden
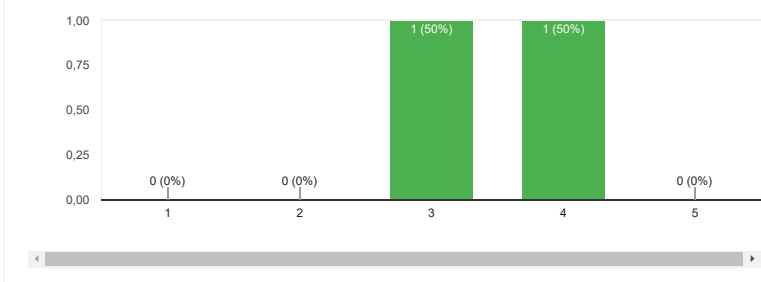
Importance: Sales & Distribution

1 antwoord
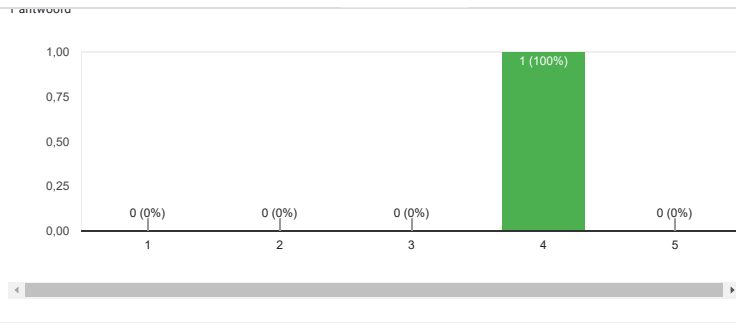
Importance: Investment Cost

Please indicate the level of importance of the pre-seed selection criteria [Investment Cost] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
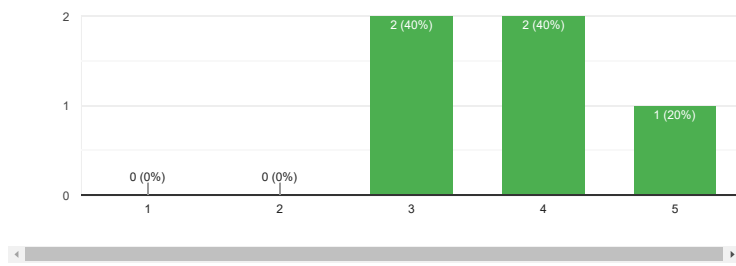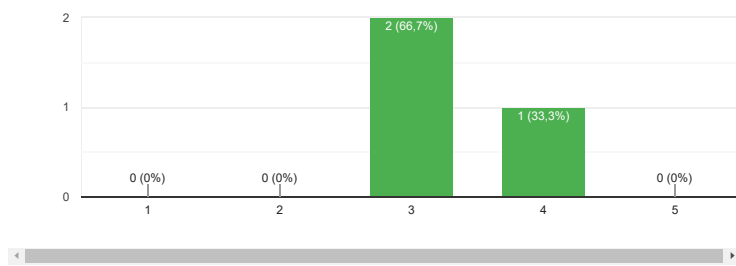
3 antwoorden

Importance: Value Proposition

Please indicate the level of importance of the pre-seed selection criteria [Value Proposition] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

5 antwoorden

Importance: Validation Effort

Please indicate the level of importance of the pre-seed selection criteria [Validation Effort] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
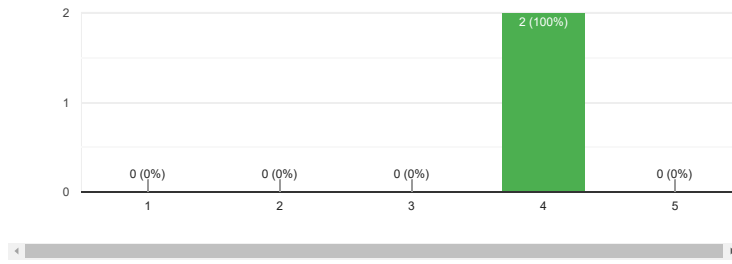
3 antwoorden

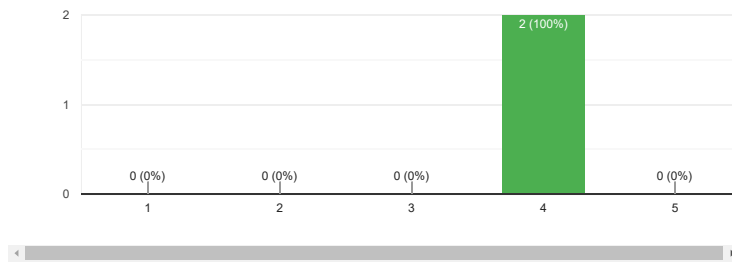## Importance: Sustainable Advantage

2 antwoorden

Importance: Growth Strategy

Please indicate the level of importance of the pre-seed selection criteria [Growth Strategy] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
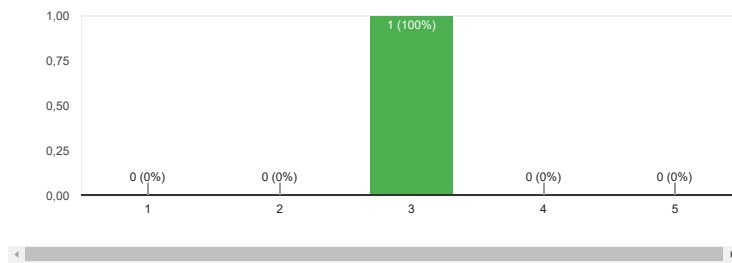
2 antwoorden

Importance: Key Success Factor Stability

Please indicate the level of importance of the pre-seed selection criteria [Key Success Factor Stability] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
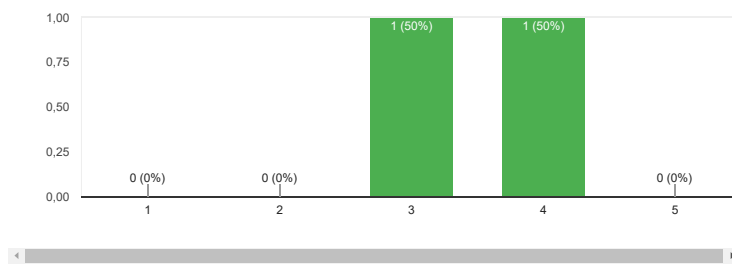
1 antwoord

Importance: Timing of Entry

Please indicate the level of importance of the pre-seed selection criteria [Timing of Entry] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.
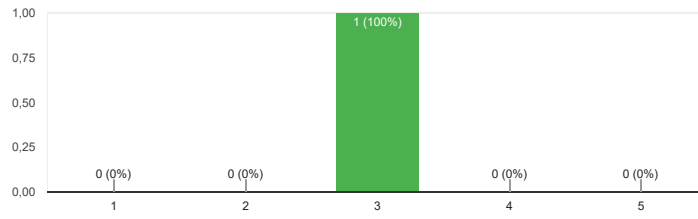
2 antwoorden

Importance: Lead Time

1 antwoord

Importance: Competitive Rivalry

Please indicate the level of importance of the pre-seed selection criteria [Competitive Rivalry] on a scale from 1 (unimportant) to 5 (extremely important) for the 'innovation initiative' or portfolio you are managing within TenneT.

1 antwoord