Understanding the societal impact of intermediaries in the energy transition

C. Teunissen

Master's Thesis for the Environment and Society Studies programme

December 2020

Radboud University

Nijmegen School of Management

Understanding the societal impact of intermediaries in the energy transition

Author: Carl Teunissen

Student number: S4598229

Supervisor Radboud University: Duncan Liefferink

Supervisor *diep*: Petra Hofman

Radboud University Nijmegen

Faculty: School of Management

MSc Environment and Society Studies

Date: December 2020

Radboud University

Summary

Transitions have become the desired approach to solve contemporary environmental problems. This approach is characterised by its complex nature due to diverse stakeholders and objectives. Academics designate intermediaries capable of understanding and reacting appropriately to complex transitions contexts. Their skill has made intermediaries indispensable in the advancement of sustainability transitions. However, the impact of intermediaries remains vague, an impression shared by *diep*, an intermediary in the Dutch context, interested in their societal impact and the initiator of this research.

Intermediation does not have a universal form and fulfilment is dependent on the orientation of the intermediary in question. In order to address this flexible nature, public value (PV) was chosen as the measurement framework. Vital is PV's precondition of contact with the public, this excluded other sustainability transitions and left the energy transition (ET) in which participation is central. In addition, research revealed decentralised governments (i.e., municipalities) tend to illustrate intermediary characteristics in the ET, to verify whether these findings apply to the Dutch context, cases with municipalities were chosen: Omgevingsvisie *Raalte*, Klimaattafels *Renkum* and Energieloket *Apeldoorn*.

This qualitative two-step multiple case study research combines insights from literature on sustainability transitions, transition intermediaries and PV, to understand *diep's* intermediation and how they generate PV in the chosen cases. The first step involved interviewing and observing *diep*-employees, to understand their interpretation on intermediation in transitions. The second step involved interviewing public servants connected to the cases, to understand how the process was organised and what results were achieved.

The analysis of the interviews demonstrated *diep*-employees aim to incorporate all important contextual elements to create a more holistic portrayal of the problem at hand and avoid narrow-mindedness in finding the right solution. In line, *diep* has a normative outlook towards involving the public. Correspondingly, the public played a big role in the three cases. Public servants remarked extensive participation is uncommon as there are many uncertainties, but *diep* displayed trust in the all-embracing process, which encouraged the municipalities to persevere.

Moreover, municipalities illustrated intermediary characteristics but lack workforce, expertise and neutrality to properly fulfil this role. The absence of experience results in municipalities inviting intermediary parties (i.e., *diep*) into their context, to aid in breaking down the complexity and comprehensiveness. Nevertheless, the outsourcing of work by municipalities to intermediaries also leads to tensions and challenges in the intermediation process.

The cases illustrated that the presence of an intermediary (*diep)* was highly valued and essential for the reached outcomes. *Diep's* functioning as counterbalance led to better connections

with the public: municipalities listened to citizens and did not dominate the narrative; different forms of information on the ET became available to citizens; and the municipal ETs attained identities which brought citizens closer to one another and the objectives.

Diep's holistic approach impacted the municipalities' viewpoint of involving the public and their respective publics. The intermediation process increased the reach of municipal ETs and generated social, cultural and political values. Both public servants and citizens better understand and envision how the ET can benefit their respective environments. Over time this cooperative foundation will lead to new economic and ecological values connected to the ET.

Acknowledgement

This thesis signifies the finalisation of my master studies at the Radboud University Nijmegen. One year ago, I became a full-fledged commuter and sat 3 hours a (school) day in the train from Amsterdam to Nijmegen and back. My world broadened both a little and a lot, geographically and intellectually.

After 4 months, I swapped Nijmegen for Apeldoorn, initiating a chapter of becoming an intern and learning about the craft of consultancy. *Diep* was my first work experience and made a big impression. It is a shame that COVID-19 hindered real-life contact. Nevertheless, the team was more connected than ever, as we faced newly arrived uncertainties together. I would like to thank my *diep* supervisor Petra for repeatedly giving me new insights and guidance on both the thesis and practicalities. Thanks to the rest of the team: Barbara, Kim, Hanneke, Gino and Sabine. The team atmosphere was very comforting and made me feel welcome and undoubtedly contributed to the success of this thesis.

I would also like to thank Duncan for his endless help and explicit remarks when I needed to improve. It definitely helped me to be stricter to myself. I enjoyed and appreciated the process and contact.

Finally, I would like to thank my parents and Merijn. Thank you for being a pillar I could lean on when I was feeling less motivated or weary. Ben, thank you for being a critical reader of my piece. Inge, thank you for always checking in to see if I was doing alright. Merijn, thank you for making me happy and keeping me sharp, you were critical of my behaviour and forced me to give it my all. Mega bedankt allemaal.

Carl Teunissen

Amsterdam, 1st of December 2020

Table of contents

1. Introduction

Fossil fuel energy sources are one of the primary building blocks of our world; yet they harbour such a destructive capacity. The best adjective to describe its application is paradoxical. On the one hand, we have surpassed previous generations across many fields, but, on the other hand, this success has led to more frequent and severe climate problems. The basis of this threat is irresponsible and excessive use of fossil fuel energy sources. Massive amounts of CO_2 pollute our atmosphere and enhance the greenhouse effect, in turn increasing the global temperature and ultimately affecting all life forms on earth (Rockström et al., 2009).

Countries are hesitant to take action because fossil fuels help stimulate economic growth (Asafu-Adjaye et al., 2016); for that reason, they are reluctant to jeopardise their financial position and stall development. Nevertheless, various international agreements (e.g., the Paris Agreement) have initiated a global movement to reduce CO_2-emissions (Singh et al., 2019). This goal can be primarily achieved through the reduction of fossil fuel energy source usage and replacing them with renewable energy sources (Ros & Schure, 2016).

In order to effectively lower CO_2-emissions, a structural transformation or transition is needed (Loorbach & Rotmans, 2006). This energy transition is predicated on a more sustainable society. Thus, meeting the needs of the present without compromising the ability of future generations to meet their individual needs (Imperatives, 1987), which will make it easier for countries to reduce their CO_2-emissions and control their economic future.

Transitions are complicated and take into account the values, ambitions and goals of a multitude of stakeholders rooted in technology, politics, business and civil society. As such, new governance structures must be formed to pursue their objectives (Geels, 2011). Within these structures, mediating parties known as transition intermediaries are often present to instigate collaboration by fulfilling a multitude of roles (Backhaus, 2010; Kivimaa et al., 2019a). A transition intermediary functions as a catalyst, quickening the process and often enhancing the outcome, thereby making the presence of intermediaries in sustainability transitions indispensable (Backhaus, 2010, Kivimaa et al., 2019b).

The task at hand—lowering CO_2-emissions through energy decarbonisation—leaves much room for personal interpretation. The liberty in execution, combined with different actors and new governance structures, gives rise to various outcomes. Therefore, actors affix personal sub-goals to the primary goal, which, in turn, stimulates general acceptance towards renewable energy sources. Altogether, these contributions and goals are beneficial to the public. This research examines how

intermediaries play a part in the generation of public value—a measurement for societal impact, which is the result of interactions between different stakeholders.

1.1 Problem statement, research objective and research questions

Although intermediaries are crucial in sustainability transitions, it remains difficult to grasp the scope of the impact of intermediaries as they shift between roles, stakeholders and interests (Kivimaa et al., 2019a). Moreover, the precise contribution of intermediaries to different projects on both processes as end-results can be indistinct. Public value (PV) is a measurement for societal impact—the effect on people and communities as a result of an action or process, that evaluates the contribution of intermediaries in the energy transition. Intermediaries, similar to other stakeholders, have a unique composition—roles, goals and ethics—that defines them (Kanda et al., 2020). However, we have yet to precisely map their actual impact.

This thesis explores how transition intermediaries function within projects, to understand how they generate public value within the context of the Dutch energy transition. The main objectives of this thesis are to:

- understand the process of intermediation in sustainability transitions, both theoretical and practical;
- understand the relationship between municipalities and the Dutch energy transition;
- understand how intermediaries generate public value through energy transition projects.

In order to reach the objectives mentioned above, the following main research question and sub-questions were formulated:

What is the role of transition intermediaries, and how do they stimulate PV generation in the context of the Dutch energy transition?

Sub-questions**:**

- What does the role of transition intermediaries entail according to the scientific literature?
- What insights are needed to generate public value?
- What is the outlook of the intermediary on intermediation in sustainability transitions?
- How is intermediation present in projects?
- How are the different facets of PV stimulated by the intermediary in question?

1.2 Societal & scientific relevance of the research

The three main concepts—sustainability transition, transition intermediary and public value—have been extensively explored and discussed in the scholarly world. However, in practice, these concepts have only started to gain popularity and still exist relatively separate from each other. Hence this research should be seen as explorative.

The first two concepts are interlinked; Backhaus (2010) and Mourik et al. (2009), for instance, both write about the critical role transition intermediaries fulfil in sustainability transitions, namely understanding context as multi-layered, thereby identifying threats and opportunities at different moments of the process. Moreover, transitions have become the desired approach to solving contemporary environmental problems (Geels, 2011; Kant & Kanda, 2019). At the same time, the ability to fulfil an intermediary role has become a craft in its own right, due to complexity, tensions and ambiguity (Manders, Wieczorek & Verbong, 2020). The interaction, theoretically, between the two concepts is evident; intermediaries seem essential in (current and future) transitions. However, in practice the necessity of intermediation and its process continue to be challenging to perceive and fuels the need for it to be manifest.

Public value is a suitable framework for societal impact, that can serve as a narrative for the intermediary in question (Alford & O'Flynn, 2009). PV functions as a frame, which elucidates how certain processes led to certain results. Through dissecting and analysing motives and results, this research aims to make this link with societal impact more palpable. In so doing, this research sheds light on the context an intermediary navigates in, how goals are realised and what goals are reached regarding public value generation. The purpose of connecting intermediation and public value has not been explored before in the scientific literature, and this thesis can therefore pave the way for additional research.

The Netherlands has numerous (transition) intermediaries focussed on sustainability transitions; *diep* is one of them, consists of 5 employees, situated in Apeldoorn and has been around for 5 years. Their primary focus lies on the energy transition (decarbonisation of the current energy system), climate adaptation (improvement of the responsiveness of the built environment to climatic factors) and circular economy (moving to an economic system that values waste and continual use of resources). *Diep* wants to better understand their reach and societal impact. As previously discussed, this research will solely focus on the energy transition, for reasons explained in chapter 3. Through this research, their theory of change or ability to initiate change will be overviewed.

Although *diep* is the starting point for understanding how intermediaries bring about results on regime level, it is known that different types of intermediaries work together in solving contemporary transition problems (Kivimaa et al., 2019b). It is therefore not surprising if other actors,

e.g., municipalities, demonstrate similar (transition) intermediary qualities (Gustafsson & Mignon, 2020). This research aims to determine whether this is present in the chosen cases and the Dutch context and seeks to better understand the ambiguity of the transition intermediary concept.

2. Theoretical framework

This chapter overviews the theoretical framework of this thesis. Moreover, some connections between theories and *diep* are made to indicate the importance and use of introduced theories. The division of this chapter is as follows: context, process and results.

It is essential to understand how transitions work (2.1) in order to understand the motives of intermediaries and the results they effectuate; in what sort of context they navigate and the details of the Dutch energy transition. As the approach per intermediary differs, it is necessary to overview the types of actions they can perform (2.2). The transition context also brought about different types of transition intermediaries that will be introduced. Understanding the context and role will provide an overall idea of the limits of their capabilities. Finally, introduce the theoretical foundation to make public value tangible and measurable (2.3). In so doing, the link can be made with intermediaries their contribution to society and the advancement of transitions.

2.1 Sustainability transition

To better understand the impact of transition intermediaries, such as *diep*, it is necessary to consider the circumstances of their creation. The current view on transitions in both political debates and in the scientific community is that of the 'pursuit of sustainability'—the progression of a world in which both humanity and the earth can thrive—hence being designated sustainability transition (Hölscher et al., 2018). Nonetheless, both 'transition' and 'sustainability transition' are used synonymously throughout this thesis.

Transitions are generally approached in a singular manner. At its root, a transition is the change in an equilibrium—more evolution than revolution (Rotmans, Kemp & van Asselt, 2001). It is the result of multiple interconnected developments in different domains, i.e., markets, science, culture, technology, policy and industry (Geels & Schot, 2007; Rotmans, Kemp & van Asselt, 2001). It is, in essence, the cultivation of a fundamental socio-technical change in society or a subsystem of society (Loorbach & Rotmans 2006; Meadowcraft, 2009). Accordingly, the goal of sustainability differs per subsystem, e.g., mobility, energy, water or circularity.

Political endeavours drive sustainability transitions, and even though they are predicated on goal-oriented change, the notion of sustainable development in transitions cannot be directly controlled (Loorbach & Rotmans 2006; Meadowcraft, 2009). It can, however, be steered by transition management, a governance approach to navigate towards specific sustainable results (et ibid.) as such actors can induce social change within the limits of their agency (Loorbach, 2010; Smith et al., 2005).

Transition management, as opposed to existing governance approaches, utilises a two-pronged strategy: to *improve* in the short term and *innovate* in the long term (Loorbach & Rotmans, 2006). In order to achieve this, an atmosphere of sharing and collective decision-making is created to strive for consensus (Kenis, Bono & Mathijs, 2016). Loorbach (2010) adds that transition management is a reflexive process of analysing, evaluating and experimenting. Hence, a pathway towards a specific future is better imagined.

2.1.1 The multi-level perspective

Sustainability transitions centre around the introduction of innovations to achieve socio-technical change (Loorbach, Frantzeskaki & Avelino, 2017). Expanding upon this further, Kemp, Rip and Schot (2001) created the multi-layered system, which was later elaborated by Geels (2002) into the multi-level-perspective (MLP). The MLP illustrates how innovations move within the sociological structures of our world, explaining how and why certain innovations prevail and others fail.

The MLP consists of two dimensions: the first is the multi-level model, or transition arena, and the second is the multiphase concept, or socio-technical regime change over time (Geels, 2002). The MLP contains a detailed understanding of underlying patterns and mechanisms, thanks to these spatial and temporal dimensions. Figure 1 portrays the MLP adopted from Loorbach, et al. (2017), which shows the three levels of structuration and stability of the transition arena: landscape, regimes and niches. The landscape level represents the dominant view, that is, what society deems proper and wrong, of the energy transition (e.g., fossil fuels are outdated, or climate change is a severe problem). The regime level represents the prevailing socio-technical structures in place; an example of this is how our economy (e.g., energy consumption) is fuelled by and equipped for fossil fuels. The niche level encompasses innovations that are still unpopular and small. These innovations include, for instance, renewable energy technologies. These three levels constitute the playfield in which a transition takes place; moreover, according to Geels (2002), they have a nested character, whereby each lower level is embedded in the one above it and, therefore, is able to influence that level.

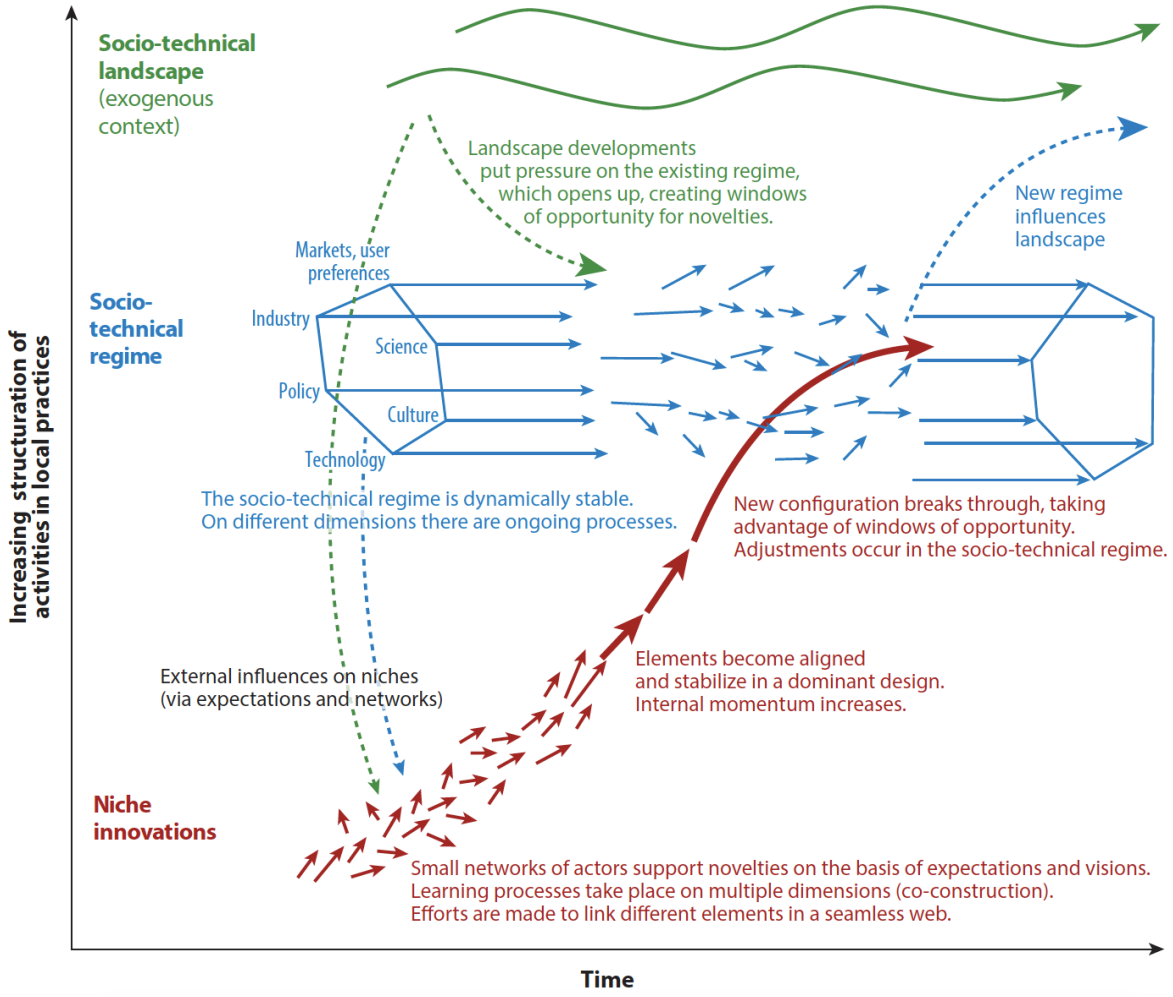

Figure 1. The MLP on transitions (Loorbach, Frantzeskaki & Avelino, 2017).

The multiphase concept covers the temporal axis of the transition. A transition typically spans a period of 25–50 years (1–2 generations) and is characterised by four phases (Geels & Schot, 2007; Loorbach & Rotmans, 2006):

- **Predevelopment phase.** There is no visible change in the regime, but at the niche level, innovation starts to attain support from other actors.
- **Take-off phase.** Change starts to build up, and the landscape alters, placing pressure on the existing regime, thereby creating a window for innovations.
- **Breakthrough phase.** The accumulation of structural changes in several domains on the regime level creates a window of opportunity for niche innovations. This window enables niche innovations to become implemented on regime scale in all domains—co-evolution, indirectly influencing the landscape level.

- **Stabilisation phase.** Societal change decreases and a new equilibrium is reached, this means earlier niche innovations have become part of the regime and landscape.

Grin, Rotmans and Schot (2010) classified the MLP as a process theory. A process theory focusses on events, instead of fixed causal relations, that together form narratives, aiming to find typical patterns (Abbott, 1992). Grin et al. (2010) gave five reasons as to why the MLP suffices as a process theory:

1. Transitions are enacted by different social groups.
2. Actors change their perceptions of interests, preferences and identity during transitions.
3. The timing of events and multi-level linkages is essential, influencing the type of transition pathway. Transitions can also end less favourably, i.e., lock-in, backlash, system breakdown.
4. Explanations in the MLP are layered and involve the tracing of twists and turns and alignments of event sequences and trajectories.
5. The MLP has generality because it is versatile and maintains its basic character in different case studies and transition pathways.

Specifically, the MLP can analyse the complex dynamics of transitions that can differ each time while continuing to offer a level of clarity, through its narrative (four phases) (Figure 1). The first four reasons also substantiate how unpredictable and complex the transition environment is.

The MLP has also faced criticism by scholars. Hodson and Marvin (2010), for example, note that because of the lack of spatial scale, the transition arena does not indicate the type of urban context in which the transition takes place. Within scientific sources, there is often an implicit emphasis on national scale contexts. Moreover, these national scale contexts require additional historical, institutional and policy knowledge not included in the MLP (et ibid.). In the case of regions, municipalities or cities, additional mechanisms are present that can steer transitions.

The second critique is in line with the first; Kenis et al. (2016) has commented that the MLP has frequently been called a post-political economic model, leaving no room for political or democratic adversity. The critique of Kenis et al. (2016) also critiques transition management, which is defined as consensus-driven governance, neglecting possible societal disaccord. In addition, the MLP does not politically display citizens; instead, they are depicted as consumers, granting them less agency (Kenis et al., 2016).

Both critiques are widely known. Grin et al. (2010) comment that they could turn it around; the MLP is a global theory able to analyse long-term change processes. Therefore, it should retain its versatile character and broadening features (reason 5), as such, applying it in practice requires the use

of complementary local theories to create a more complete picture of the system and social context in place.

2.1.2 Diving into the energy transition

Societies are always in some form of energy transition (Singh et al., 2019), such as transitions from primitive energies (animals, water, wind and firewood) to coal, and from coal to crude oil and natural gas. These earlier transitions elapse(d) gradually, in contrast to the current energy transition. Transitioning to renewable energy sources has never been more urgent, and a first in requiring large-scale socio-technical change. Whereas the speed at which measurable progress of this energy transition manifests—CO_2 reduction, decisive is for the earth's flora and fauna.

Sovacool (2016) defined energy transition based on five definitions from different writers (Hirsh & Jones, 2014; Miller et al., 2015; O'Connor, 2010; Fouquet & Pearson, 2012; Smil, 2010):

> *'An energy transition most broadly involves a change in an energy system, usually to a particular fuel source, technology, or prime mover (a device that converts energy into useful services, such as an automobile or television)'.*

Frequently, the emphasis of the energy transition is solely on changing fuel sources, which is often critiqued as a narrow view (Laird, 2013). Limited technological choices virtually embody underlying social and political dimensions that uphold old ways of reasoning (et ibid.). This type of framing can impede progress—diminishing technological development in its broadest sense.

According to the Social and Economic Council (SER), an advisory body that helped with the formation of the Dutch Energy Agreement for Sustainable Growth in 2013, both energy-reducing measures and shifting to renewable energy sources are part of the Dutch energy transition. It is evident that innovations are situated on the intersection of new technologies and smart applications, in which some innovations are part of multiple subsystems (e.g., mobility). The Dutch energy transition can be defined as a mixture of various innovations intended to become operational on the regime level. Therefore, apart from developing innovations lies a massive task in aligning different actors from the public, private and civil society spheres (transition management). The alignment of different actors is needed to arrange how these various niche technologies will come to be in the real world (SER, n.d.; Singh et al., 2019). The Energy Agreement was later refined into the Climate Agreement, subdividing the energy transition into five sectors accompanied by ambitions: built environment, mobility, industry, agriculture and land use, and electricity.

Perceptions of sustainability in the energy transition

While sustainable alternatives to fossil fuels are growing in popularity, they were previously dismissed as too costly or less attractive than fossil fuels. In addition, various actors use fuzzy descriptions for their interpretation of a sustainable alternative (or -innovations), resulting in a lack of definition. Some actors allude to renewable energy generation, while others suggest smart energy usage or specific combinations of the two. The introduction of CO_2-reduction goals was meant to provide clear end-goals for all actors involved in the energy transition (Climate Agreement, 2019).

The Dutch government, however, is unlikely to meet their 2030 goal, a 49% reduction in CO_2-emissions compared to 1990, as they are not on par with the planned trajectories. While CO_2-goals are clear, the CO_2-goals do not depict how the action is undertaken, partially undermining the task at hand—a common pitfall. Urgenda, an activist environmental organisation, sued the state in 2015 for not honouring their promise. They won the case and compelled the state to reduce emissions by 40% or, at the very least, by 25% in 2020 (Hoge Raad, 2019; Schoots & Hammingh, 2019). Fixed CO_2-reduction goals enabled others to hold the government accountable for their promises.

The Urgenda-case also stimulated the formation of the new Climate Law and Climate Agreement (Rijksoverheid, 2019). The Climate Law encompasses the binding reduction goals of -49% by 2030 and -95% by 2050, compared to 1990, and contained the signatures of 100+ organisations committed to its contents. The law and agreement went into effect in the summer of 2019 and stimulated a legal and cooperative context for future energy-related developments (Schoots & Hammingh, 2019; Rijksoverheid, 2019). Nevertheless, success depends on the players involved in the energy transition.

Interpreting the context

Scientists are aware that the energy transition is complicated, especially when local theories that cover historical, institutional and policy knowledge are included. Mourik et al. (2009) introduce a framework (Figure 2) that aids in simplifying this vast context. This approach also helps identify at which point in the context intermediation is more present (et ibid.).

Figure 2 shows the framework (ETlayers) that assumes context can be divided into layers. These contextual layers zoom in, moving from large to small and cause to effect (Mourik et al., 2009). Similar to the MLP, this model uses identical logic; both models perceive 'context' as a representation of a socio-technical system in which new projects and innovations are embedded (Backhaus, 2010; Loorbach & Rotmans, 2006). Nonetheless, Mourik et al. (2009) avoid the use of MLP-notions to explain this model, even though landscape, regime and niche are represented in his theory.

In contrast to the MLP, ETlayers focusses on individual projects instead of the large-scale transition towards a new regime, incorporating an analysing step in its display (moving from broad context to process to implemented innovations). This analysis step, the categorisation of contextual layers within energy projects, also introduces structure.

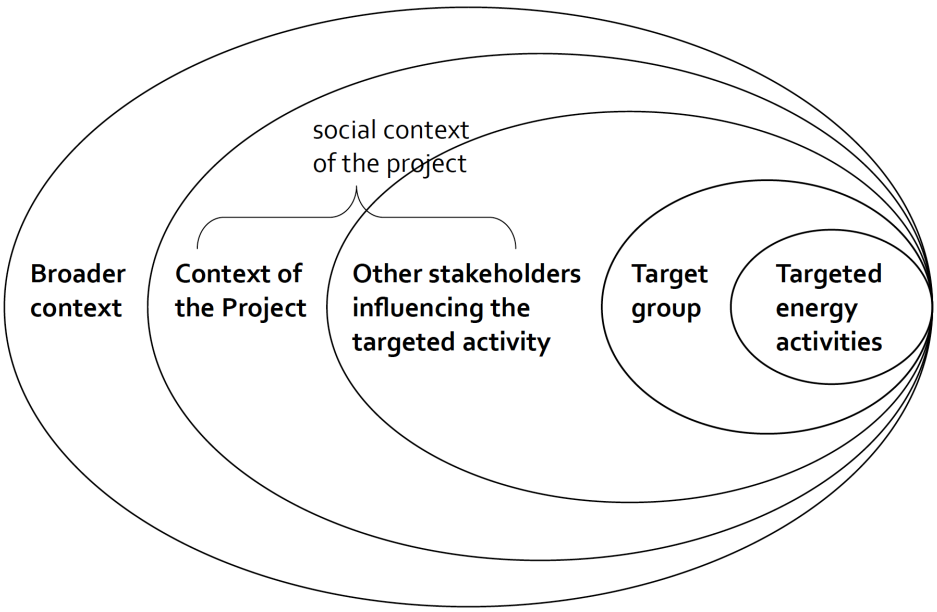

Figure 2. Understanding the context as multi-layered (Mourik et al., 2009)

A short explanation of the different layers from left to right (Backhaus, 2010; Mourik et al., 2009). The *broader context* can be seen as the global and national mechanisms in place (landscape and regime). Whereas the *context of the project* is the additional local context—per urban context, different additional elements are valuable (landscape and regime). The third layer is broad as it represents all stakeholders (actors, institutions or organisations) that have a level of agency and power capable of influencing the specific project's progress or outcomes; this includes municipalities, intermediaries and local communities (regime) (Backhaus, 2010). The second and third layer is also called the social context of the project, where, according to Mourik et al. (2009), most of the intermediation takes place. *The target group* is defined as the population affected by the scheduled energy activity (regime). Finally, *targeted energy activities* should be seen as the implemented innovation (niches). Again, there is a similarity with the MLP-theory, which interchangeably uses innovations and niches. The figure also illustrates the notion of lower levels (niches) being imbedded in higher levels (regime), in correspondence inner and outer layers (Figure 2).

The two theories (MLP and ETlayers) are founded on the same logic but use different depictions for the course of developments in the energy transition. In this research, ETlayers is used

as it zooms in on individual projects, which aids in understanding the chosen cases. The MLP is undefined and does not contain the analysis step of Mourik et al. (2009). However, the MLP-notions (landscape, regime and niche) are more favoured as they implicitly call to mind the systemic nature of transitions and will be used in the description of some contextual layers.

2.2 Transition intermediaries

The intermediary transition concept has become a hot scientific topic in the last decade. This section will look into scholarly research on transition intermediary's roles, aims and how they navigate within the structures of the MLP. Intermediaries have various forms; Hyysalo et al. (2008) have remarked that they are a specific actor category with a separate identity. An intermediary can consist of an individual/organisation, a group of individuals and organisations, or even a platform for collaboration (et ibid.). Due to these varying forms, and the fact that intermediaries can also fulfil other primary roles besides intermediation, they are often unaware of their intermediary 'presence' in transition contexts (Kanda et al., 2020).

The practice of intermediation traditionally has a bilateral character, whereby an intermediary would stand in-between two actors and helps them reach a solution (Van Lente et al., 2003; Kant & Kanda, 2019). However, bilateral intermediation seems insufficient in dynamic transition contexts. Subsequently, the transition intermediary came into existence.

The main difference between traditional and transition intermediaries is the number of connections they form (Parag & Janda, 2014). Unlike traditional intermediaries, who navigate in-between two actors, transition intermediaries manage many different relationships simultaneously with precisely honed techniques to sustain these connections. Kanda et al. (2020) have found that transition intermediaries navigate within three new levels: (1) in-between entities in a network, (2) in-between networks of entities, and (3) in-between actors, their networks, and institutions (Figure 3).

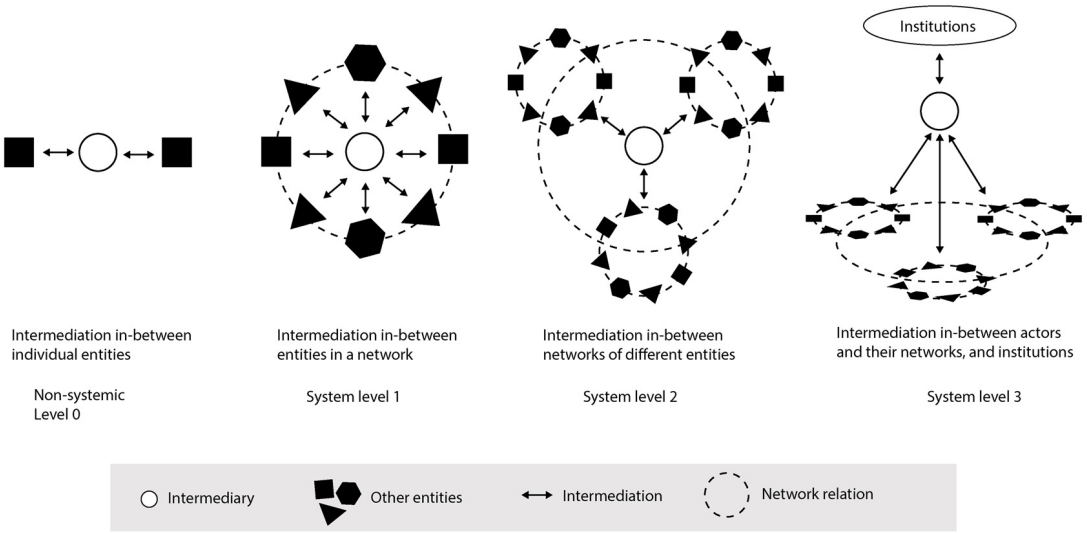

Figure 3. Different levels through which intermediaries navigate (Kanda et al., 2020).

The first two levels represent horizontal intermediation, in which a network can represent different entities from a niche, e.g., renewable energy or energy efficiency (Kanda et al., 2020). While level 1 focusses on one type of innovation to be implemented, level 2 focusses on combining multiple niche innovations to attain a higher goal. For instance, for a neighbourhood to become carbon neutral, the municipality must combine renewable energy (gas-free living) with energy efficiency technologies (isolation). The third level is different as intermediation transcends horizontal interactions and involves institutions. Kanda et al. (2020) have noted that intermediation at this level requires connecting networks with institutional change, ultimately to change the formal and informal rules of the games and to affect institutions, further advancing a transition. Additionally, it must be understood that both traditional (in-between individuals) and transition intermediation are employed in order to advance a sustainability transition (et ibid.).

Parag and Janda (2014) have critiqued the roles of intermediaries as a go-between, which precludes them from having any independent agency or capacity (et ibid.). Nonetheless, intermediaries can invite other actors from different spheres (governance) to actively connect niche-level activities to regime-level institutions and shift the balance in favour of specific niche innovations (Fischer & Newig, 2016).

2.2.1 The process of intermediation

In order to shift the balance, transition intermediaries employ different tactics to stimulate 1) niche creation/upscaling and 2) regime (de)stabilisation (Matschoss & Heiskanen, 2018). Various scholars

have written about intermediation, but for the purpose of this research, two authors will be highlighted: Stewart and Hyssalo (2008), Kivimaa (2014).

A more general division of capabilities is that of *facilitating*, *configuring* and *brokering* by Stewart and Hyysalo (2008). *Facilitating* entails creating opportunities and space for other actors to act. *Configuring*, or translating, involves changing the way technology is understood and used. *Brokering* entails establishing, nurturing and adjusting connections between actors. The three actions are adjacent and complementary to each other as a transition intermediary often fulfils multiple roles simultaneously. This tripartite division is a simple approach to understanding how intermediaries, both traditional and transitional, perform their roles and serves as the foundation for other more intricate approaches that aim to understand the role of transition intermediaries in the MLP context.

Kivimaa (2014) elaborates on and combines several theories, including Stewart and Hyysalo (2008), into three niche-promoting processes: *articulate expectations and visions, build social networks* and *instigate learning processes*. Kivimaa (2014) comments that this division is more useful for understanding what tactics transition intermediaries employ across the MLP context than simple roles. The first is to *articulate expectations and visions*, which includes applying and commercialising technologies and advancing sustainability objectives. This tactic is generally used to promote niche development (predominantly the take-off phase), e.g., to encourage implementation and a sustainability agenda, whether from a personal or local/national standpoint. The second is to *build social networks* through brokering and configuring aimed at aligning actors, overseeing current and future financial resources and human capital. Understandably, this tactic is employed throughout the MLP, but it is most vital in the beginning of a transition as it is a determining factor in collecting resources. The third is *instigate learning processes*, which is focussed on stimulating all facets of learning—accumulating data and reflexive learning across various domains, i.e., technological, economic, social. The third process is a lesser-known intermediary tactic but not unneeded. Since sustainability transitions are new explorative contexts, there is a need for knowledge and data that aids in understanding how to bring about complex system-wide structural change. Also, intermediaries are expected to know whether and to what extent specific plans of actions are effective. Lastly, intermediaries do not always employ all niche-promoting processes; this is dependent on the niche and context (ibid.).

It is known by *diep* that they fulfil the 'simple' roles as introduced by Stewart and Hyysalo (2008); this became apparent through interactions with *diep* employees and observations (informal and formal) (O1). However, the more complex niche-promoting processes (Kivimaa, 2014) seem relatively uncommon in terms of goal setting or as a particular plan of action. Nevertheless, for sustainability transitions, these processes are essential in working towards sustainability objectives.

These processes shall be used as a guiding principle for understanding how *diep* and other actors are working towards a sustainable solution.

Neutral or normative

Finally, intermediaries are known to be neutral or normative. When neutral, intermediaries refrain from altering the knowledge or goods transmitted between themselves and others, taking on a sincere role (Kant & Kanda, 2019; Kivimaa et al., 2019a). When normative, intermediaries are shown to have a precise orientation and thus aim to influence the outcome through their translation capabilities (Kant & Kanda, 2019; Kivimaa et al., 2019a). In both cases, the goal is to align the involved parties for successful transition management.

2.2.2 Transition intermediary typologies

There is a distinction in types of transition intermediaries, which depends on their presence in the MLP-levels and -phases (2.1.1), tactics (2.2.1) and their stance on neutrality (2.2.1). There are five typologies (Kivimaa et al.; 2019a, 2019b):

- **A systemic intermediary** operates on all levels (niche, regime, landscape); their main goal is to induce change across the entire system level and actively promote a transition agenda. They are generally regarded as a neutral facilitator and broker.

  In the take-off phase, they open up institutional and social spaces for opportunities. In the acceleration phase, their presence grows by actively interacting with the market by creating broader future visions. In addition, they feel the societal need for change on the landscape level. In the stabilisation phase, they aim to develop new networks in order to change the regime further, often at the cost of existing networks and contradictory to other intermediaries.
- **A regime-based transition intermediary** is tied to the existing regime in place, as such has a clear mandate and interest (normative) to stimulate incremental change. They reach out to niches and the entire system in order to achieve this.

  In the take-off phase, they are focussed on creating a financial foundation for future innovations, without interacting with the niche level. In the acceleration phase, they concentrate on enhancing the relationship between the regime and the niche through translating. In the stabilisation phase, their role is to convey the implications of new policy structures to niche entities, as well as to fortify their position.

- **A niche intermediary** often emerges together with a niche and has a clear aim to advance its position to the broader niche level and regime level.

  In the take-off phase, they evolve together with a local niche project. Oftentimes they are established before any actual project has begun to form and sometimes even initiate the formation of the project on a small scale. In the acceleration phase, their presence is vital as they aim to scale up local to regional, national niche level or regime level. In the stabilisation phase, they seize to exist or change into a different type of intermediary.
- **A process intermediary** focusses on individual niche projects but acts as a neutral player. They fulfil a supervising day-to-day role, taking into account the broader context (e.g., transition trajectories, influences from the regime and niche level).

  In all phases, their goal is to circulate the visions and aspirations of the local project to networks foreign to them. In addition, they aim to connect a local project to context-specific regime priorities for success.
- **A user intermediary** emerges from consumers and users and, as such, has an explicit normative orientation premised on user interests. They function mainly as a facilitator and configurator, connecting new niche technologies, users and regime actors for the sake of user comfort and satisfaction.

  In the take-off phase, they form networks that are used for exchanging knowledge and outlooks. In the acceleration phase, they take on a watchdog position, thus observing how a specific niche develops in regard to its users. In the stabilisation phase, they continue to promote further fine-tuning through experimentation in order to ensure the user's comfort and satisfaction.

The intermediary in question—*diep*—displays various characteristics in the context of the energy transition. While *diep* is not affiliated with public bodies, they are consulted by and dependent on them and, as such, have clear base targets set by the public body. Depending on the degree of freedom, *diep* becomes a certain intermediary. Ultimately, this is connected to the interdependency and interaction between a municipality and *diep*, which will be elaborated in the analysis.

2.2.3 Challenges for intermediaries

Changing between roles and navigating in-between networks complicates the intermediation process. It is important to be aware of these challenges. Manders et al. (2020) outline the three challenges intermediaries frequently face.

The first challenge Manders et al. (2020) introduces is the dynamic and complex context; as previously discussed, intermediaries take into account actors, interests and the local context, which requires them to understand the context as multi-layered and anticipate accordingly. Kant and Kanda add that it often requires them to strike a balance between the needs of different actors. Both authors say that this has been shown to jeopardise their position in the process—a transition intermediary can be influential in one moment, powerless in another or no longer part of future developments.

In line with the first challenge, the second challenge: intermediaries are dependent on others (Manders et al., 2020). Intermediaries are generally external parties, who are consulted for a specific project. However, before the input of intermediaries is valued, they must invest time and energy into strong relationships, in order to substantiate trust and generate internal value (Kant & Kanda, 2019, Manders et al., 2020).

The last challenge Manders et al. (2020) introduces is that intermediaries are part of the context they aim to govern. Both neutral and normative stands can create a vague situation. Kivimaa et al. (2019b) claim that intermediaries that take on neutral roles are sometimes more respected, because it seems as if intermediaries do not act on someone's behalf. Manders et al. (2020) comment that a normative position can offer more tools in order to put pressure on existing regime structures. In practice, intermediaries have to continuously reinvent themselves according to the context as there is no one-size-fits-all approach.

It is important to be aware of possible intermediation challenges *diep* can face in the projects. In order to recognise the challenges and see how *diep* reacted these pitfalls.

2.3 Public Value

Sustainability transitions are in the interest of the public, even if the main goal might be to implement innovations on the regime level. The ultimate goal in energy transitions is to lower CO_2 in our atmosphere and fight pollution, consequently sustaining life on earth. The decarbonisation of our planet, in essence, is beneficial to the public, although not necessarily as noticeable. However, per individual task or solution, there are more obvious benefits to the energy transition. In, for example, the Climate Agreement, it is stated that municipalities will play a large role in making the built environment more sustainable (p.17). Furthermore, as public bodies, they are expected to suffice the public in its needs—the most valued ones. Hence the motives for the energy transition are entangled with public satisfaction—for instance, the public value generated through making a neighbourhood carbon-neutral spans several different domains. Intermediaries can guide these energy transition tasks and positively influence the outcome—accelerating, optimising or enhancing the generation of public value (PV) through intermediation.

Mark Moore first introduced the PV concept in *Creating Public Value: Strategic Management in Government* (1995), a book written for public managers, who are in charge of managing (sustaining or improving) the services provided by public bodies. *Creating Public Value* came out in a neo-liberal period—when society went through the process of individualisation—which complicated understandings of the public's interest (Bennington & Moore, 2011). Moore (1995) created a framework aimed at supporting public managers, to ensure consistency and reliability in their routine as well as to handle the changing context. *Creating Public Value* spent less time theoretically defining PV and focussed more on its operational aspects (Bennington & Moore, 2011).

Moore's framework, known as the strategic triangle, represents the essential calculations that public managers make in their work (Moore & Khagram, 2004). The first is to create a product that is beneficial and of importance to the population in place. Moore (2003) comments that it is generally a value that involves social objectives, e.g., stress relief or livelihood improvement. The second is to find political support and authorisation. The third is to attain goals and create products without exceeding the limits of the available resources. Moore's (1995) goal was to illustrate how a public manager is accountable to higher political structures and the public, or lower' structures (William & Shearer, 2011).

The manager's accountability to lower public structures signifies that the designated public are not just recipients (Mourik et al., 2009). The public in place can have a meaningful impact on the process. This is reinforced by the *Omgevingswet* (Artikel 5.51), which states that municipalities must incorporate the public into spatial projects (e.g., energy-related). This entails involving the public in the preparations. Moreover, they should understand the implications of the initial 'exploration'. Finally, initiating parties (municipalities) are required to clarify how experts gather input from the public.

2.3.1 Theorising PV

Even though Moore initially saw PV as a practicality, the concept has since gained theoretical backing. PV borders other concepts (i.e., public interest, public goods and public benefits), but how does it differ from those? The definition of PV (Meynhardt, 2009) is as follows:

> *'Public value is anything people put value with regard to the public'.*

Three elements make PV unique and define its scope (Alford & O'Flynn, 2009). The first PV is more than simple public goods (e.g., infrastructure or urban objects), but also encompasses rules and mechanisms that protect citizens. The second element is that PV is not limited to outputs, which are

products created by public bodies, but also encompasses outcomes. Outcomes are additional benefits from public goods and work towards outputs that positively influence or improve someone's state. In short, outcomes are side effects that sometimes occur unexpectedly. Also, outcomes represent a large part of the results. The last element is that PV represents what has meaning to the population who benefit from it. PV is tapered to the need of a population and is therefore favoured. Samaratunge and Wijewardena (2009) comment that PVs are fluid in nature and change according to societal needs. The emphasis is not on what the public-sector sees as valuable but on what the public desires.

The last point is also the main critique of Moore's (1995) framework (Alford & O'Flynn, 2009). The strategic triangle is dependent on authorisation from higher political actors; however, public bodies might not always know what is best for the context. A misinterpretation of PVs (e.g., Moore, 1995) is viewing them as what citizens—seen as a collective customer—deem valuable (Samartunge & Wijewardena, 2009). While PV essentially focusses on values that characterise the relationship between individuals and 'society' (Benington, 2005; Meynhardt, 2009), PV is not a reflection of the common good but of the individual good, in which public managers effectively choose which values are feasible and fit to the context.

Who?

In contrast to Moore (1995), many authors—including Moore himself—now believe that PV can be created by public and private actors; both can produce outputs and outcomes that satisfy the needs of the public (Benington, 2005). However, to effectively create PV, interaction with the public is obligatory (et ibid.). The public is defined as citizens, who are known to have agency over their life (neighbourhood, workplace, etc.) (e.g., Benington & Moore, 2011). Previously mentioned, the public can be seen as an abstraction that citizens form based on their personal experiences (Meynhardt, 2009). Frederickson (1991) comments that citizens are concerned with public themes and the common good, but, as a public, lack an understanding of the complexity and require leadership in order to participate properly.

It was already clear that municipalities often bridge the gap between complex transition contexts and citizens. Furthermore, there is little doubt that public bodies naturally strive to create PV, especially when engaging with citizens. *Diep* supports municipalities in their quest and therefore, indirectly influences PV-generation.

2.3.2 Measuring PV

Many scientists have attempted to make PV more tangible by measuring its versatile nature through different methods, focussing on different facets of the concept (Faulkner & Kaufman, 2018). Nevertheless, much remains unclear about measuring PV due to lack of uniformity.

Kelly et al. (2002) emphasise that PV can serve as a holistic medium for measuring the functioning of the government. PV embodies both external and internal accountability as public bodies can be checked to determine whether their proposed goals are met (Faulker & Kaufman, 2018). A critique on PV as a performance measure is that so far it has been very unimaginative; existing measurement-tools are often designated as evaluating 'public value,' while nothing changes (Alford & O'Flynn, 2009). Regardless, these (unimaginative) performance measures do expose the pros and cons of governmental decisions and actions.

Faulkner and Kaufman (2018) have compiled the results of 19 different studies, which strived to measure PV in different ways, dividing them into four facets (Figure 4). The first facet is *outcome achievement* and focusses on the reach of outputs and outcomes. This entails creating PV that preferably spans all four types of value. Benington (2005) lists the four types of value that can be created:

- **economic value**: adding value to the public realm through the generation of economic activity and employment
- **social and cultural value**: adding value to the public realm by contributing to social capital, social cohesion, social relationships, social meaning and cultural identity, individual and community well-being
- **political value**: adding value to the public realm by stimulating and supporting democratic dialogue and active public participation and citizen engagement
- **ecological value**: adding value to the public realm by actively promoting sustainable development and reducing public 'bads' like pollution, waste and global warming

Especially in transition contexts, every result helps to advance sustainability transitions; different results in multiple domains are for that reason desired. The second facet is *trust and legitimacy*. PV entails working together with the public, but a public body can decide to what extent they want to incorporate and involve them in the process. As one can imagine, building trust and being transparent creates more support from stakeholders and citizens. A downside to this facet is that trust is difficult to measure. Aware of this, to make this facet more apparent, more attention is given to how *diep* handled public input and capital and whether municipalities understood the intermediation process

of *diep*. The third facet is *service delivery quality*, which focusses on how well PV is tapered to the population. Public satisfaction, overall success and client responsiveness are indicators that showcase whether the PV is adequate to the context. These indicators also depict the durability of certain products. Furthermore, *service delivery quality* is also reflected in the way a municipality and *diep* are ready to check with the public whether the results reflect the public's desires (and needs). The final and fourth facet is *efficiency*, a wink to Moore's (1995) strategic triangle, realisation within the limits of one's resources. Is the PV proportional to time, financial and social costs? Ultimately, the goal is to achieve maximum results with minimum effort. A public body is unable to repeatedly spend large sums of public money on participation processes. The challenge is to balance time and input, obtain the correct data immediately within a specific period to create adequate results. These four facets are important in understanding the societal impact of intermediaries since each can be influenced through the intermediation process.

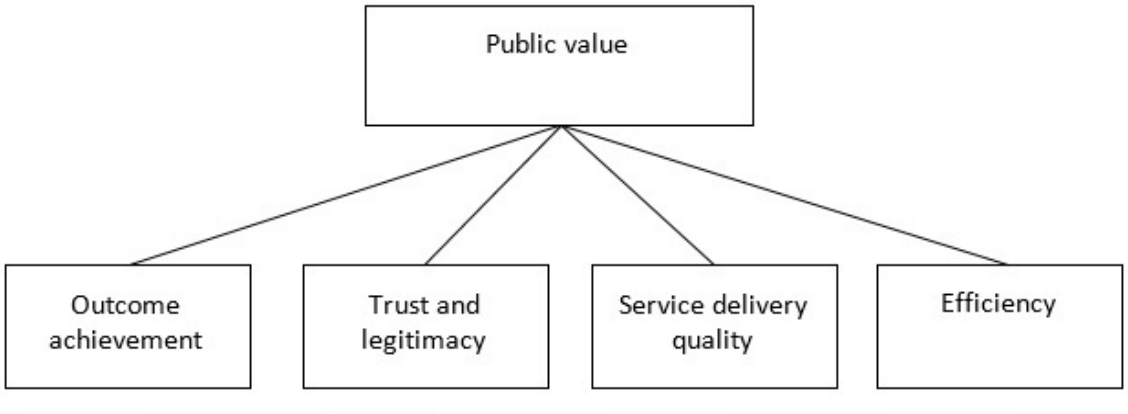

Figure 4. Facets of PV (Faulkner & Kaufman, 2018).

As it remains difficult to express these facets into quantitative measurements, in the analysis, the researcher will interpret how the different facets were present and stimulated in the cases, using the definitions given by Faulkner and Kaufman (2018) as a guide.

2.4 Conceptual Framework

The Dutch energy transition is already a widely accepted notion nationwide; this does not apply, however, to the implementation of sustainable innovations (e.g., renovations, large-scale energy generation). The Dutch government is aware of this, and through the Climate Agreement (CA) and National Environmental Planning Strategy (NOVI) (4.2.1), they oblige that citizens should be notified and actively involved in energy projects, contributing to a greater understanding and more acceptance

towards scheduled changes. However, to properly understand this development and its influence on intermediation, the following framework (Figure 5) is used.

Figure 5 is a combination of previously explained theories, and its structure is primarily founded on Mourik et al. (2009). This framework aids in achieving the different objectives (1.1): understanding intermediation in this context; the relationship between municipalities and the Dutch energy transition; how intermediaries stimulate PV-generation of energy transition projects.

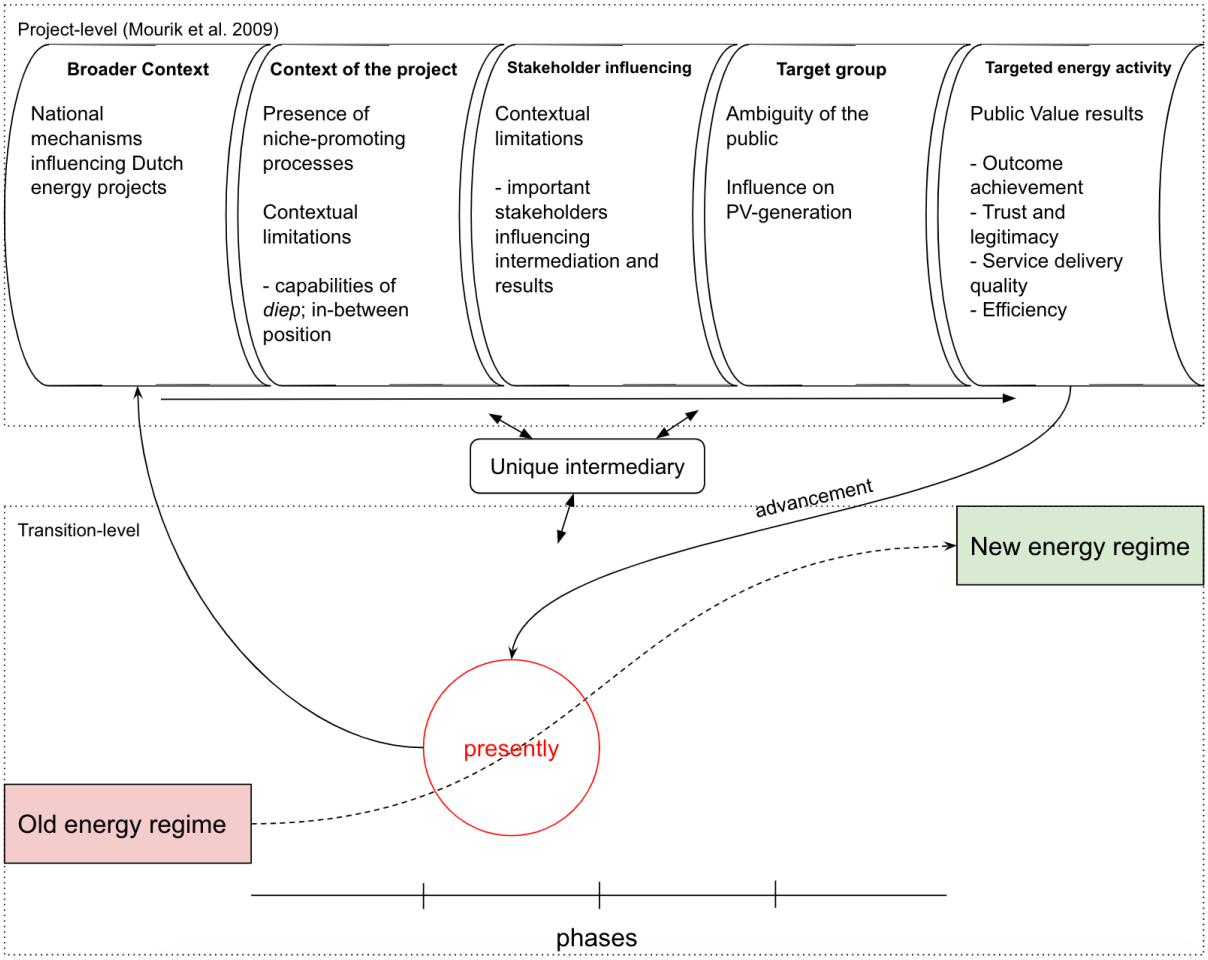

Figure 5. Conceptual Framework—*Intermediaries between transition and project levels, zooming in on contextual layers of Dutch energy transition projects (in the current phase).*

The conceptual framework consists of two parts, the wider transition-level and the singular project-level. The first portrays the course of the transition (e.g., Loorbach, Frantzeskaki & Avelino, 2017) moving to a new energy regime, in which the striped line represents the multitude of niche projects happening in the transition. The line below depicts the four phases, and the current phase (take-off) is accentuated with the red circle. The project-level (Mourik's model) has been altered to the *take-off*

phase and incorporates PV. PV was incorporated for two reasons: to uncover societal impact and because innovations (targeted energy activity) are not yet realised in this phase.

In the analysis, prior to Mourik's model, attention is given to the unique intermediary positioned between the general transition and individual projects. In this research, that intermediary is *diep*, whose presence is influenced by broader transition trajectories and characterised by their unique approach. Each vector goes both ways; intermediaries influence the context and the project, but oppositely react and are shaped by these two elements. Therefore, intermediaries are ever-evolving organisations as context (e.g., historical, institutional and policy) continues to develop.

The model by Mourik et al. (2009) is composed of five layers, each of which has different contents (2.1.2). Due to the context (take-off phase) and the research question, these contents are slightly altered. The first layer of *broader context* will focus on national (institutional) mechanisms that influence energy projects. These mechanisms are expected to disclose what role municipalities play in the Dutch energy transition, as well as what the position of municipalities signifies for *diep*.

The second layer *context of the project* covers the course of the project(s); focussing on the projects' objective, *diep's* role/task, their capabilities in the different municipal contexts, and what types of niche-promoting processes were present (Kivimaa. 2014). These capabilities are dependent on *diep's* 'freedom' in urban contexts and can be identified as the challenges introduced by Manders et al. (2020).

The third layer will first look at how different stakeholders were present in the cases—followed by a meta-approach, to disclose what type(s) of stakeholder, according to interviewees, is most decisive in municipal energy projects. For that reason, these stakeholders should also have considerable implications on the intermediation process. The layer will also disclose why stakeholders impose contextual limitations and hinder impact.

The fourth layer, *target group*, focusses on the public. As different PV scholars (e.g., Moore & Khagram, 2004) have commented, in the generation of PV, public bodies are accountable to project-important populations. Therefore, the public has a position as stakeholder and provides useful input. However, this transaction is dependent on the willingness of the public body to create space in the project for participation. Furthermore, public bodies themselves remain autonomous to decide whether to use the public's input (4.2.1). There is an imbalance between recipiency and participation, which is wholly reliant on the public body in question. Recipiency stands for reducing the public to an unemployed factor. Thus innovations intended to benefit the public are determined without consulting and involving the public in the decision-making process. The ambiguity and the motives for involving the public will be discussed.

The last layer focusses on the PV-results, which are measured in four facets (Faulkner & Kaufman, 2018): outcome achievement; trust and legitimacy; service delivery quality; efficiency. These facets, in turn, should advance the transition. Additionally, these results depict what the societal impact of *diep* and the municipality is.

3. Methodology

This chapter will look at the research elements in this thesis and explain their meaning and how they help answer the research questions. These elements are the research philosophy, strategy, design, methods, data collection and analysis.

3.1 Research Philosophy

This research follows an ontological constructionist and epistemological interpretivist approach. The ontological constructionist view implies that reality is not singular but exists as multiple constructions that are dependent on subjects (Moon & Blackman, 2014; Moses & Knutsen, 2012). This principle is convinced that subjects continuously ascribe meaning to social phenomena, ultimately constructing their reality (Bryman, 2012; Guba & Lincoln, 1994). The presence of multiple realities also applies to the goal of understanding the process of intermediation and defining PV as there will be differences in interpretation between social actors per case and over time. These constructions are often biased and can be interpreted in a multitude of ways (Moses & Knutsen, 2012). Therefore, an interpretative approach is used, deriving meaning from subjects through dialogue and explanation (Bryman, 2012; Guba & Lincoln, 1994; Moon & Blackmoon, 2014). The goal of interpretivism is to understand individual and shared social meanings (Crowe et al. 2011).

3.2 Research Strategy and Research Design

This research is explorative, meaning that the aim is to understand the process of intermediation and understand how this relates to societal impact. The central word is 'understand', and in order to, qualitative methods were chosen as the research strategy. Qualitative methods are focussed on words and offer a liberating way of interpreting reality, enabling researchers to more precisely describe processes (Bryman, 2012; Crowe et al. 2011). Intermediation is fuzzy and, hopefully, through qualitative methods, it can be better understood how it manifests in practice in regard to PV.

For the research design, a two-step multiple case study was chosen. As this study is interpretative, the case study aims to critically question meanings/contexts and processes as perceived from different perspectives. The first step investigated the views of *diep* employees. The second step used the three intermediation cases to generate a broader appreciation of the intermediation phenomenon. The contents of the second step were primarily based on the input of public servants involved in the three cases.

Tsoukas (2009) comments that while small-N studies can accurately grasp the specificity of phenomena, there exists a dialogical tension between two questions: 'What is going on here?' and 'What is this a case of?'. The interaction between these questions signifies that a conceptual understanding can be stretched to make new distinctions. Klag and Langley (2013) call this interaction a conceptual leap, which is defined, in qualitative research, as seeing empirical new things that may or may not be translated into a new theoretical conception (et ibid.). Thus, this research might disclose certain theoretical ideas that could be falling short as an actual theoretical contribution. These shortcomings are attributed to the fact that there are only three cases. Second, theoretical novelties are obtained in interpretive ways and are unique per case; therefore, it remains challenging for novelties to develop into a conception. Similar to Tsoukas (2009), Klag and Langley (2013) describe the process of conceptual leaping as two actions being alternated: (1) *seeing*: uncovering aspects of existing social worlds in new ways and (2) *articulating*: representing these new insights internally or publicly.

The representations of new insights were constructed by the researcher. Considering that the researcher has immersed himself in the intermediation process and was semi-affiliated with *diep*, there exists the possibility of confirmation bias. In addition, qualitative methods are characterised for lacking scientific rigour; many interpretative and analysing steps were completed outside of the regular research process (e.g., brainstorming, reflection).

3.3 Case selection

This research is made possible through a collaboration with *diep*, a consultancy firm based in Apeldoorn. As discussed in the introduction, *diep* has tackled various sustainability problems and challenges over the last 5 years; curious about their impact, they arranged an internship focussed on understanding this and offered access to their network.

Therefore, *diep* was chosen as the intermediary in question for its intermediary characteristics. The first characteristic is that they tackle sustainability transition problems and work towards a sustainable future and are a flexible actor, in terms of entering and leaving project contexts they originally have no connection to. The second characteristic is that they fulfil the three intermediary roles as introduced by Stewart and Hyysalo (2008). The last characteristic is that they connect to a large number of different actors (Parag & Janda, 2014). These three characteristics substantiate why they are suitable as a research subject.

The starting point for this research was to understand *diep's* societal impact. The chosen measuring tool, PV, has a critical precondition, namely 'contact with the public'. It became clear from work meetings and interviews with *diep* employees (Appendix 1) that, especially in the energy

transition context, 'participation' plays a central role. This deduction excluded, for instance, the circular economy and climate adaptation transition. In the case of a circular economy, the focus is on making businesses circular and upscaling circular niche initiatives (R1, R4, O1). While with climate adaptation, citizens have not been given a central role thus far (O1); this is changing due to the *Omgevingswet*, which states all large spatial interventions (e.g., strategies against heat or excessive rain) must be done in deliberation with the public. But there are currently no climate adaptation cases with both citizens and *diep*.

Finally, this research was inspired by Gustafsson and Mignon (2020), who wrote about municipalities in Sweden fulfilling an intermediary role. They described municipalities as in-between (inter)national visions and local actions, located at the intersection of *broader context* and *context of the project*. The researcher sees a parallel with the Dutch context, as municipalities are tasked with incremental advancement of national sustainability objectives. Therefore, cases were chosen where *diep* and municipalities closely worked together in order to detect if those municipalities also demonstrate(d) transition intermediary characteristics. This objective is reflected in the second objective and sub-questions 1 and 2 (1.1).

The chosen cases and municipalities are 1) Omgevingsvisie *Raalte*, 2) Klimaattafels *Renkum* and 3) Energiek *Apeldoorn*; the interviewees are listed in Appendix 2. The description of these cases, based on documents and the interviews, will be discussed in the analysis (4.2.2; Context of the projects).

3.4 Research methods, data collection and data analysis

This research uses both primary and secondary data, which was obtained through desk research, literature research, semi-structured interviews and observations. Desk research involved browsing to see what general information could be found, e.g., visions, agreements, and tenders, while the literature research focussed on scientific sources. Finally, semi-structured interviews were used to generate data; the method offers both structure and flexibility (Bryman, 2012). Interviewees were asked semi-open questions, giving the interviewee the liberty to expand on certain topics and feelings they experienced during the process. For this research, the interview data served as a resource; this means interviewees reflect on their reality, which is not jointly constructed by the interviewer and the interviewee (Rapley, 2004). Observations were meant to give additional insights into *diep's* approach, all observations were periodic work meetings; work problems and prospects were discussed. The researcher actively participated in these meetings, by asking questions and answering to questions.

3.4.1 Data collection

A literature review served as the first step towards understanding intermediation. The essential theories were shaped into the theoretical and the conceptual framework. The latter, Figure 5, is based on the relations between context, process and result. These frameworks served as guides in acquiring the right data for answering the research question and were translated into the item lists and codes. Case studies focus on the experiences of individuals that construct phenomena, sometimes philosophically and psychologically (Crowe et al. 2011). The conceptual framework is meant to underpin and tie these experiences to sociological foundations. The framework ETlayers (Figure 2) is used to introduce structure through the peeling away of contextual layers, thus discussing the *broader context* till the last layer *targeted energy activities*. Figure 5 addresses the interaction between and within these layers focussing on the important theories.

Two types of interviews were held, one with *diep* employees and another with public servants. All *diep* employees were interviewed to obtain a general idea of their perception on transitions, intermediation and impact. After receiving suggestions on possible cases and looking through *diep's* database of past projects, three energy transition cases were chosen that differed from one another. The respective key public servants involved in each of these projects were identified and were then interviewed to explain how they were involved in transitions, how intermediation is experienced in transition contexts and how they perceived results regarding PV.

The interviewees were contacted by mail and interviews took place by phone or video call, due to COVID-19. This created some distance between the interviewer and interviewees, resulting in less engagement and directness plus more concise and sometimes shallow answers. The first set of interviews with *diep* employees took place in April 2020. Employees were no stranger to the researcher or to being interviewed; for this reason, they gave more elaborate answers. The public servants, on the other hand, were slightly hesitant, wavering and reluctant to express their feelings and opinions. All interviewees permitted recording and transcription of the interviews, which lasted for about 35–45 minutes. The transcripts were coded with Atlas.ti.

Finally, the interviews and documents were originally in Dutch; the researcher translated fragments to English. However, this required additional interpretation and analysis, which resulted in the loss of some of the nuances of the conversations. The author deems this as one of the weaknesses of the study and aimed at preserving the original essence as much as possible.

3.4.2 Operationalisation

The first step in answering the research questions was introducing important theories and concepts. These were then formulated into interview questions suitable for perceiving their presence in the contexts of the three cases and the overall environment of the Dutch energy transition. This operationalisation process is depicted in Table 1. After dividing the three main concepts into different dimensions, elements (layers and *unique intermediary*) from Figure 5 were assigned to them. The concretising concepts represent the contents they investigate, which were translated into interview questions for *diep*- and public servant respondents.

The interview questions were formed prior to the interviews. While conducting interviews, these questions developed, often becoming more coherent. The process was iterative, but the root of the questions remained the same.

It is vital to note that on the subject of PV, respondents were not interviewed on specific results. On this account, general feelings and impressions of the process served as the basis for further understanding of what this 'value' represented.

In many of the cases, respondents not only elaborated on the context of their own project but expanded it to more 'normal' or 'less effective' projects, providing a clearer picture of how and why concepts were or were not present in the Dutch energy transition (i.e., 4.2.3 & 4.2.4).

Table 1: Operationalisation into interview questions

Central concept	**Conceptual dimensions**	**Conceptual Framework components (Figure 5)**	**Concretising concepts**	**Questions (d = *diep*; p = public servant)**
Transition context	Multilevel and multiphase (MLP)	Layer 1. Broad context; Layer 2. Course of the project	Point of view	How do you view the current state of our transition? (d)
			Objectives	What were the project's objectives? (p) Can you explain the case? (p) What was your role? (p)
			Actors/stakeholders	Who was involved? (p)
	Energy transition (ET)		Barriers/obstacles	What made it complex? (p)
			Connection with ET	How did *diep* become involved in the energy transition? (d) How was the project connected to the ET? (p)
Transition intermediary	Role	Unique intermediary; Layer 2. Course of the project	Responsibilities; Personal approach	What role does *diep* have in the ET? (d) Can you describe *diep's* approach? (d) Why do you engage in doing this? (d) Do you take a neutral or normative stance, and how? (d) What was *diep's* role in the project? (p) Do you have any experience with actors similar to *diep*? (p)
		Layer 3. Stakeholders influencing	Amount of connections	What was your connection like with *diep*? (p) How did *diep* connect to others in the project? (p)
	Influence		Ability to initiate change	What obstacles did you face during intermediation? (d) How would it be without *diep*? (p)
Public Value	Interaction with the public	Layer 4. Target group	Motives	How do you incorporate the public in ET-projects? (d) Why do you incorporate the public in ET-projects? (d) How are you beneficial to society? (d)
			Barriers/obstacles	

				Are you satisfied with the results in regard to the public? (p) Do you think it was a positive experience for the public? (p) What made you confident in the chosen approach? (p)
	Measurability	Layer 5. Targeted energy activity	Outcome achievement	What outcomes were achieved (economic; social and cultural; political; ecological)? (p)
			Trust and legitimacy	How was *diep's* presence beneficial to the process? (p) How did you perceive this process, legitimate? (p)
			Service delivery quality	Do you think the public was satisfied with the results, and how do you know? (p)
			Efficiency	What implications do you think this joint effort had on the efficiency of the process (accelerated/optimised/enhanced process)? (p)

3.5 Reliability and Validity

Reliability and validity are important criteria for sound scientific research. The two are firmly connected. The rule of thumb is as follows: without reliability, there is no validity, while the reverse does not apply (van Thiel, 2014). The definition of both criteria will be given, followed by an explanation of how they are present in the research.

Reliability stands for the accuracy and consistency of measurements (van Thiel, 2014), hence an emphasis is placed on transparency. It is challenging to remain consistent in qualitative methods because research subjects develop over time, leading to changing reflexive answers. Thus, through transparency, the researcher aims to reduce doubts and substantiate how items (questions) are adequate in answering the research question over time. The template for these questions is enclosed in the table and appendix and can be used to follow a similar research process, accounting for repeatability.

In the case of validity, there is internal and external validity. Validity, in general, determines whether an indicator or multiple indicators measure the concept. Internal validity refers to whether the research measures the intended effect (Yin, 2003). Therefore, the two-step case study is used, to determine whether *diep* employees envision a process similar to how public servants experience it. It would have been inefficient to measure results the intermediary was not trying to achieve.

External validity refers to the generalisability of the research findings to other units of study, or different periods or locations (van Thiel, 2014). Yin (2003) comments that the generalisability of case study research usually is low. Case studies go into depth, exposing a broad set of details unique to the case. It is, therefore, challenging to generalise the yielded results. In an attempt to tackle this weakness, three different cases where chosen, which in turn expose more and stimulate the need for new statistical research on the societal impact of transition intermediaries in sustainability transitions. Finally, as discussed before, this research will contain dialogical tensions or as Klag and Langley (2013) called it conceptual leaps. The three cases will spawn different theoretical ideas that are currently falling short as new theoretical conceptions but could be a starting point in the development of general conceptions.

4. Analysis

This chapter is divided into two sections, starting with a focus on *diep*, followed by the peeling away of contextual layers in line with and following the structure of the introduced conceptual framework.

The first part focusses on *diep's* unique intermediary qualities and answers the third question: '*What is the intermediary in question's outlook on intermediation in sustainability transitions?*'. In contrast, the second part looks at the context, process and results. The first layer will look at the broader energy transition context, exploring what brought about these municipal energy projects. The second layer focusses on the course of the three projects—how *diep* was involved and what type of intermediation and change they were able to bring about. The third layer focusses on decisive stakeholders in these projects (and energy projects in general) and the implications of their presence. These two layers (second and third) for a large part answer the fourth question: *'How is intermediation present in projects?*'. The fourth layer will look at the connection between the public, their voices and energy projects. The last layer will look at the actual results in regard to the PV-facets. These last two layers answer the fifth question: *'How does the intermediary in question stimulate the different facets of PV?*', paying attention to reasons for why it is not customary to involve the public.

4.1 Diep

As previously mentioned, *diep* has been around since 2015 and has gradually constructed an identity that is composed of their approach, motives and outlook, among other things (O1). This identity will continue to evolve as the company matures and grows in size. This first part, therefore, is a present-day overview of how they perceive practicalities concerning sustainability transitions, with an emphasis on the energy transition. Shown in Appendix 1 are the five *diep* consultants, that closely work together (O1)—regularly consulting and leaning on each other for self-improvement. They have a collective mindset on how to see, sense and solve contemporary Dutch transitions tasks.

This collective mindset immediately became apparent when asked to describe what role they occupy, as all employees used the word 'connect'. *Diep* connects several different elements and can be seen as a catalyst attempting to introduce these items to one another more quickly. One respondent (R1) commented that *diep* fulfils a connecting role by standing in-between parties, similar to brokering (Stewart & Hyysalo, 2008). Knowing through Parag & Janda (2014) that transition intermediaries create bridges between various actors and networks (Kanda et al., 2020), this answer was not surprising. Respondents 1 and 2 added the following:

We connect very abstract overarching goals, you name it, to everyday practices—the reality of today, making us suitable for helping parties to take new steps because we look at what is needed for that next step. (R1)

Translating those long-term goals into the here and now, connecting them with different settings and then attempting to take a kind of step or actual step with each other. (R2)

The comments illustrate how energy-goals situated in the landscape level (e.g., being 'climate-friendly' or becoming carbon neutral) are challenging to configure into immediate regime-level actions. *Diep* answers to the needs of different actors by helping them define what they aim to achieve (R2, R4). Furthermore, the quotes by R1 and R2 depict *diep's* tendency to attach a context-related societal urgency when establishing a new line of action for actors involved, answering to public desires and striving to create PV. This method, as seen during work meetings (O1), appeals to the imagination and 'belevingswereld' world of experience (R6, R7, R9). The second comment (R2) discussed the connection of long-term goals to local settings (here and now; different urban settings dependent on the task) that is used as a rhetorical device to pursue long-term goals. This is incomparable to the visions introduced by Kivimaa (2014) and is instead a quicker, more informal and accessible way of creating a story around the task at hand:

Before we get the assignment, we will show or make it clear that we have a specific vision. I think that's also typical of diep. Our offer always includes part of our vision of the assignment, and we do not only answer the client's question. We always type or tell you how we think the assignment is important to us and with which drive we start. This drive also explains why we include the energy transition or why a certain integral consideration is made, and that we guarantee and ensure that the client also knows what he chooses when he chooses our approach. Then he understands why we act and what drive we invest in sustainability and the energy transition to improve the living environment. (R3)

Integral approach—connecting elements

Diep employees expound on this last point—integral considerations—in their meetings (O1). During the interviews, R2 said:

The goal is to translate energy transition goals to broader, more integral contexts. This stands for not just talking about energy. But also talk about how this relates to space, to house construction, to the construction sector or the living environment. I keep making connections, and sometimes it starts at the energy transition. Quite literally, how do we reach these goals? Sometimes, for instance, in the case of Raalte was the energy transition, not the starting point for the issue at stake or the question that they ask me. (R2)

The energy transition consists of different elements. It is crucial to tackle a sustainability transition in its entirety to create a holistic image of what change is needed. As an intermediary, the employees navigate freely between various societal and sustainability themes. Sometimes the assignment is isolated in one task, but it should always be an aspiration to include additional important elements (R1–R5). R2 wrote an article for Platform Overheid, a knowledge exchange platform on various subjects focussing on the link between the practice of public administration and science, and further explains making connections and becoming integral:

> *Confusing purpose and means leads to confusion, uncertainty and frustration. […] Making a useful distinction between purpose and means helps ensure more connection, support and possibilities. […] A useful distinction between goal and means also ensures focus on the right result. Too narrow a focus on natural gas-free means can provide perverse incentives, for example, in cases where the homes discontinue natural gas but ultimately no CO_2 reduction is achieved. (Weeffouten in het denken en doen over aardgasvrije wijken – R2)*

This quote honed in on the 'warmetransitie', the part of the energy transition that focusses on living environments becoming gas-free, and one of the current topics of *diep*. The critique addresses the notion that goals, when narrowly defined, will be solved in a way not beneficial to the climate. Actual progress can only be reached when all parts of the chain are handled (policymakers, providers and consumers). When asked if this perspective is a unique trait, R2 answered with: 'Unique to *diep*? No'. Other intermediary companies pursue similar objectives; the advantage *diep* thinks it has is the fact that they were early in thinking and experimenting with conceptions situated at the niche, regime and landscape level (R1–R5).

In addition, employees (R1–R5) added that sustainability transitions also have crossovers, which are different from integrality. While integrality pays attention to the entire chain within a doctrine, albeit only part of sustainability is addressed, for instance, decarbonisation of the energy system in the energy transition. The notion of crossovers entails seeing sustainability as an amalgamation of different transitions. For example, a circular product should not come from a faraway country with a considerable CO_2-footprint. It goes against the point of sustainability. R4 mentioned that seeing sustainability as a junction of pieces has made her capable to ask the right questions found in many transition doctrines:

> *So, I always try to zoom out and look at my integral assignment because it is important to communicate the urgency clearly and always come back to the groundwork. So basically, what's the problem we're working on? What is it about to have: 20% less waste or 10% more renewable energy? Or is it about achieving a sustainable cooperation that is also positive for*

later generations in creating a beautiful environment and with respect to the doughnut economy? (R4)

The effectiveness of *diep's* intermediation in the Dutch energy transition is partially attributable to their ability to see the full picture (e.g., CO_2-based built environment) (R6, R9) and dissect it accordingly through questioning necessary elements. However, it is also attributable to their ability to respond to old, new and changing contexts.

On a human level—connecting to people

To understand and see the full picture of projects and the problems at hand, *diep* employees possess theoretical knowledge. But in order to sway actors, intermediation requires additional skills. Therefore, *diep* also focusses on evaluating the actors in place:

Precisely on connection with the assignment, but also a connection with the people who are working on that assignment ensures that there is a certain context, certain atmosphere, certain environment […] so you get to know each other and understand what you are doing, before continuing in the assignment. I think that's an important thing in our work. (R1)

Diep employees stressed that a mentality shift, creating a collaborative space for transition management, is an essential part of their work. Ahead of and during every project is a mandatory stocktaking to understand the dynamics—looking at involved parties (e.g., municipality, citizens), the extent of their involvement and existing understandings between people. Intermediaries step into a foreign world with an already existing state of affairs. Unravelling the complexity of these social niche and regime structures is a repetitive process throughout the assignment (R1–R5). R4 said the following:

I think it is a large part of our work to, as soon as possible, get a feel of the connections that are there, connections that are there and are not necessarily part of the official part. It is not about the parties that are officially affiliated, but about those people who are behind them, the real drivers of those underlying dynamics or those power relations or responsibilities and things like that. (R4)

D*iep* employees and public servants alike all said that even though actors are fulfilling a role, behind that role is a person. These persons are decisive for the effectiveness of intermediation and therefore require attention and explication.

R5 added that *diep's* presence triggers a change in people, saying that involved stakeholders sometimes undergo a personal transition. Not every person is equally affected by the intermediation

process. However, the ones that are, are often conflicted by their powerlessness and the fact that confronting systemic elements were laid bare, especially after knowing what end-goals could be reached if everyone was facing the same way.

In short, the interviews with *diep* employees uncovered that their focus mainly lies in configuring and brokering (Stewart & Hyysalo, 2008). Thus, managing information between stakeholders and using this information to nurture connections on both organisational and human level. Moreover, their ability to make connections is attributable to *diep's* theoretical knowledge and insights into the evaluation of interrelations between stakeholders within contexts.

4.2 Understanding context as multi-layered

The second section will interweave intermediary and public servant interviews with other context-important documents. As stated before, these interviews followed the structure of the model of Mourik et al. (2009) but with altered contents (2.4).

4.2.1 Broad context

Interviewees R1, R2 and R5 commented that current assignments are progressive compared to the past. Moreover, it is safe to say that the energy transition has already passed the predevelopment phase and entered the take-off phase. They refer to 'Energiesprong', an initiative by Platform31, to exemplify the experimentative nature of the transition.

Platform31 was a government-affiliated body or steering group that experimented with public housing. In 2010, they initiated the Energiesprong programme, one of the first attempts to create energy-neutral houses; the goal was to renovate existing housing and get 'Nul op de Meter' (zero on the gas meter) (Platform31, 2016). The publication 'Energiesprong—Voor de troepen uit' discusses that decarbonisation of the living environment was unthinkable; sustainability would be expensive, complicated and unorthodox in combination with the regulations from that time. Actors needed to escape their habits and standard behavioural patterns for their carbon-neutral goal to succeed. The document illustrated that the energy transition was still seen as an option and that there was little urgency attached to the task. R1 and R5 stressed that the contrast with today could not be more distinct; the energy transition has become such an everyday topic, linked to climate justice (e.g., Paris Agreement). It has increasingly become more part of the mainstream, part of the regime level, as the public and private spheres have begun incorporating climate and sustainability ambitions in their profile. Today, everyone is somehow exposed to and aware of it.

Regardless of becoming mainstream, during work meetings, the existing regime was still described as inflexible and out-dated. Respondent R1, for example, mentioned:

> *You know pushing one button affects so many areas. It is just very complex. In these cases, you have to be able to switch on so many points simultaneously if you want to advance a level. This all rarely happens at the same time. […] So precisely because it is all so dependent on each other, it is such a challenge. (R1)*

Everything is so interlinked that sometimes newly implemented alterations or innovations become nullified by other system-elements. Systemic change is the solution, as said before, which mends all parts of the chain simultaneously (policymakers, providers and consumers).

Technological innovations, therefore, requires additional sociological and political change. The Dutch government has introduced important national mechanisms to realise this task.

National mechanisms

It became evident from work meetings (O1) and conversations with *diep* employees that their energy transition projects centre around the following topics: making the built environment sustainable and/or generating renewable energy on land. Both topics are represented in several policy documents and programmes: The Climate Agreement (CA), National Environmental Planning Strategy (NOVI) and Regional Energy Strategy (RES) and the Programme for Natural Gas-Free Districts (PAW). These documents are harmonious and work towards the 2030 goals of 1.5 million low-carbon houses (CA, p.17) and 35 TWh renewable energy generation on land (CA, p.166).

The CA is a sectoral CO_2-reduction goalsetting document. It is primarily based on ecomodernist beliefs, deemphasising mitigating behaviour and regarding technological innovations as a solution to an inherently societal problem, mainly focussing on growth through adaptation. The CA recognises sustainability as a more elaborate concept and mentions the circular economy (p.16, p.35) as a needed mindset for seeing and seizing opportunities in the built environment. However, the CA does not expand on this or mention the circular economy in combination with energy generation on the land. The RES and PAW are knowledge platforms that determine, respectively, where a type of renewable energy can be generated and how a district-approach to gas-free is best organised. They are consulted throughout the transition for expertise and share responsibilities (e.g., time management, knowledge exchange, network building) with other public actors (e.g., municipalities). Finally, the NOVI focusses on integrally apprehending spatial alterations. This also entails the positioning of the energy transition in the long-term vision of an area. The NOVI pursues the ambition of a fully circular economy by 2050 without waste and reuse of materials. In a roundabout way, they

imply that the built environment and generation on land are covered by this ambition (NOVI, p.42). This vagueness is also reflected in projects; it is important but falls outside the general conception of the energy transition.

More importantly, these programmes acknowledge municipalities as the essential directors for design and execution (rvo, n.d.). This seems to be characteristic of decentralised governments, which often create more space for initiatives and innovative solutions (Sperling et al., 2011). Gustafsson and Mignon (2020) say: *'When ambitious goals and desires set at the national level are combined with the means and power to implement these goals at the local level, municipalities then have the capacity to act as the 'engines of change' needed to boost sustainability transition'*. Likewise, Dutch municipalities will organise and facilitate the district-approach (CA, p.30–31) and disclose in their GOVI (Municipal Environmental Planning Strategy) suitable places for energy generation (NOVI, p.10).

It is expected that municipalities will take the lead in advancing the energy transition and abide by the national transition agenda. Looking at the typologies from Kivimaa (2019a; 2019b), municipalities seem to have been put into the position of regime-based transition intermediaries. Accordingly, they initiate incremental change throughout their region and align essential actors. Municipalities oscillate between neutrality and normativity as they mediate between external parties and also actively engage in the process (e.g., financing), taking on an entirely new role (R7, R8; Climate Agreement, p.30). Hence, third parties are often requested for assistance; they are asked to 1) take on an intermediary role—function as counterbalance through their neutrality, 2) support with expertise and 3) provide an additional workforce (R7, R8, R9). Gustafsson and Mignon (2020) call this task delegation and remark that it is also done in Sweden and typically involves municipalities turning to intermediary organisations. This corresponds with *diep* employees, who say that public bodies practically facilitate all energy transition tasks at the moment. Moreover, municipalities control to what extent they outsource tasks and involve intermediaries, leading to different project contexts (R7, R8, R9).

The CA and NOVI fall under 'the Environment and Planning Act' (Omgevingswet), which states that a public debate is a prerequisite in making sustainable alterations to the living environment. Hence, making a house sustainable is often incentivised, as individuals undertake renovations (e.g., isolation) themselves, or place solar panels and become 'prosumers' (CA, p.18). Furthermore, taking the 2030 goals into account, large-scale clusters of sustainable energy production are desired, whether that is wind or solar (NOVI, p.60). As that is a significant intervention in the landscape, it must be deliberated

with stakeholders—such as the public—for general acceptance. As a result, the NOVI (p.61) opts for decentralised solar energy production on roofs to limit large-scale land modifications.

Initiating parties (i.e., municipalities) will involve communities in and around districts, through participation, to expose friction, gain various insights and act accordingly (NOVI). The process of participation requires a tailored approach for the reason that every intervention is unique. The law offers initiating parties the freedom to arrange participation in any way they see fit. This leads to weak and robust processes as municipalities are unique and have different limitations (e.g., budget, time, manpower, internal frictions) (R3, R5, R7, R8, R9).

Participation is framed as a mandatory notification for change—the public must be informed and consulted for their opinion, but initiating parties are not forced to use these results; it will not necessarily give cause to additional goal-setting. Therefore, PV-creation is highly dependent on the willingness of a municipality to act on public voices (R5, R7, R9).

4.2.2 Context of the projects

Current projects are still situated at the beginning of the transition, even if the transition has already entered the take-off phase. This means many projects are not yet centring around realising spatial interventions (R6–R9). Logically, as the Environment and Planning Act obliges the creation of municipal visions prior to action (Omgevingswet, p.17), these visions, according to Hodson and Marvin (2010), provide a framework and direction for the transition in urban contexts.

After learning that Dutch municipalities act as regime-based intermediaries and are the primary initiator of energy transition projects, municipality-initiated projects intend to incrementally stimulate niche creation/upscaling and regime destabilisation. Following Kivimaa (2014), transition intermediaries employ three niche-promoting processes to achieve the two goals mentioned above: *articulate expectations and visions*, *the building of social networks*, *instigate learning processes*. These processes are inconspicuously present in current projects, indirectly helping municipalities to adapt to their new role.

Following national mechanisms, local mechanisms and the course of projects are explained. Attention will be given to niche-promoting processes (Kivimaa, 2014) if they are present in the cases. Second, this section will look at the role of *diep* in transition projects—taking into account the interdependency of *diep* and the municipality (task delegation, 4.2.1).

Raalte Omgevingsvisie

The project in Raalte was a GOVI assignment, a vision for 2040 containing municipal-important topics. According to 'Aan de slag met de Omgevingswet', an informative site on the implementation of the Environment and Planning Act, the GOVI is form-free, and municipalities decide how it is set up and

what they emphasise. This amount of freedom can hinder progress—not knowing how to start, many municipalities, therefore, request assistance.

Raalte involved *diep* on an interim basis and worked together on how to shape processes and determine the purpose of data and gatherings concerning the act. Respondents 6 and 7 said that *diep* was selected for their expertise and ability to act as a counterbalance throughout the process; this was a conclusion reached later in the process as the initial reason was a simple as requiring extra workforce that *diep* could provide. R7 underlined that the dividing line between the two parties was blurred as they often fulfilled the same role. *Diep* was employed by Raalte and acted in their name, incidentally fulfilling a regime-based transition intermediary role. However, R6 stressed that *diep* employees retained their normativity and were not adopted into the municipal structure.

Diep assisted Raalte with two parts in the GOVI project; the first was preliminary work to determine what to emphasise, and the second was the creation of the vision. R6 and R7 mentioned that they were not part of the preliminary phase and referred to the *Horizon gemeente Raalte 2040* document for explanation. According to this document, Raalte, with the assistance of *diep*, employed the *luistervinken* method to understand what topics were important to their region. The *luistervinken* approach entailed an open conversation with citizens focussing on their individual needs and interests for the future of their living environment (RaalteHorizon p.6, 2020). Through this method, they obtained the input of 1,079 citizens, which were bundled into 'the DNA of Raalte'. More importantly, ‘the DNA of Raalte’ combined with the expertise of the municipality led to a thematic division, serving as the foundation for their GOVI (et ibid.). The vision was split into three spatial issues: the rural area, city limits and the positioning of Raalte in the region (RaalteHorizon, p.7, 2020), which served as the guidelines in the gatherings and document (R6, R7). R7 noted that this choice was not self-evident because the municipal council, who approve and supervise policy action, needed to be convinced by *diep* to choose for integral spatial assignments instead of creating a separate assignment for the energy transition/sustainability.

The success of the *luistervinken* approach, in combination with *diep's* presence and internal backing (O1, R7), created a sympathetic foundation for more actively involving citizens. The goal then became to let stakeholders (citizens, local energy suppliers, etc.) from Raalte create the vision themselves. These people, called vision makers, were divided over the three spatial issues and tasked to supply input for the vision in meetings under the supervision of Raalte and *diep*. It was during these moments that the lines between Raalte and *diep* became less distinct (R6, R7). Nonetheless, R6 noted that *diep* took a step back and questioned the comprehensiveness and effectiveness of meetings, testing R6 and R7's perspectives. The assimilation of *diep* into the project’s context is a display of the third challenge by Manders et al. (2020); *diep* became part of the context they aimed to govern,

demanding that they create distance from Raalte (as an actor) in order to fulfil a critical intermediary role. R6 also noted that during the preparation for gatherings, diep aimed to formulate questions that pushed the vision makers to translate overarching goals into tangible ideas.

Looking at the niche-promoting processes, it is clear that an emphasis was placed on *articulate expectations and visions*. The document and respondents 6 and 7 also mentioned that the goal was to create a vision different from how a municipality might typically create it. This notion represents a tenet of PV, namely avoiding public servants overshadowing the public's wishes (Meynhardt, 2009). R7 stated that for outsiders of the process, the vision might be cryptic, because it is made in an unorthodox way. Even if it is 'experimental', it shows nuance; it is concrete enough for realisation and abstract enough for elaboration (R7).

Renkum Klimaattafels

The project in Renkum had a different starting point than Raalte. Respondent 8 said that within the municipality, the desire arose to organise a *Klimaattop*, a summit of people passionate about the climate, which is reflected in the KlimaatakkoordRenkum (p. 2, 2019) document and was in line with their 2040 ambitions of becoming climate neutral and robust. R8 added that he and his colleague first wanted to assess current sustainability initiatives in the region, which set in motion the *klimaattafels* project.

Kllmaattafels is a concept initially introduced along with the CA; the five sectors (2.1.2) each shared the table with stakeholders (e.g., companies, unions, NGO's), who reflect on the contents of the agreement working towards the 2030 goal of 49% CO_2-reduction. However, a widespread critique was the lack of scientists (Kropman; Trouw, 2019) and citizens (Klein; RTLnieuws, 2019). While the CA site (n.d.) comments that citizens were represented in unions and could offer input, they were not given a seat at the table. The absence of these parties narrowed the focus, bypassing any potential adversity, and there existed perverse incentives for short-term results. In the case of Renkum, *diep* aimed to involve various citizens and organisations to avoid these pitfalls. Even though scientists were not explicitly named (KlimaatakkoordRenkum, p.1, 2019), R8 mentioned that everyone from Renkum was welcomed to take part in the conversations. There were five tables in Renkum: district-oriented approach, large-scale energy generation, green and water, sustainable companies, and sustainable consumption.

Renkum involved *diep* for organising the *klimaattafels* event and constructing an identity around it. R8 said that external parties were needed as their team of two lacked a viable workforce and finesse. Thus, *diep* and other parties were invited. Several moments during the interview, both as a reply to questions and in a roundabout way, it became evident that the division of roles was fixed

(R8). Task delegation and the degrees of freedom of third parties was determined upfront; R8 clearly noted what *diep's* role was, limiting them to traditional intermediary tactics. In contrast, the municipality of Renkum connected with many stakeholders involved in the project and displayed transition intermediary characteristics (Parag & Janda, 2014).

This situation encapsulates the second difficulty as introduced by Manders et al. (2020), who state that in some situations, the interdependency between a municipality and *diep* is unilateral. In this case, *diep* was more dependable on Raalte and therefore unable to transcend their role. According to R8, this role entailed engagement with various media streams in the form of campaigns (i.e., newsletters, website, banners in the physical environment), combining this with targeted messages for different groups to attract various people and not just the 'usual' crowd.

When placing the niche-promoting processes side-by-side with the Renkum project, it becomes clear that Renkum needed to be united in a singular mission. Correspondingly, the *klimaattafels* connected people created networks and started sharing experiences with one another. The latter fell into the category of *instigating learning processes* and was only concluded because of R8's reflection and might not have been part of the original objective. The principal objective was the *building of social network* for the later scheduled *Klimaattop*.

Apeldoorn Energieloket

The municipality of Apeldoorn already attempted to establish an energy office before *diep's* assignment started. They did so after consulting with citizens, who displayed an interest in independent counselling and guidance concerning a sustainable built environment. The office was, however, unsuccessful (R9).

An energy office centres around incentivising the decarbonisation of individual housing by connecting subsidy opportunities, technology and legal rules. More importantly, to connect the three elements to citizens who wish to undertake action. R9 said creating this connection was the reason for *diep* to become involved in this project. Similar to Renkum, *diep* was in charge of creating an infrastructure and identity for the energy office in order to win over citizens and induce change on an individual level. The municipality profits from this kind of small-scale change because it only requires acceptance from the house owner, avoiding additional processes (e.g., participation involving a multitude stakeholders).

Hodson and Marvin (2010) wrote that the provision of energy advice and advice centres are standard methods for an intermediary organisation to disrupt the current socio-technical regime. It leads to project initiation; management and coordination; advocacy; awareness; training and courses;

and network building, just to name a few. This resonates with R9's replies, fulfilling the niche-promoting processes of *building social networks* and *instigate learning processes*.

For the realisation of these effects, *diep* made use of three infrastructure mediums (O1, R5, R9). The first is energy coaches, responsible for counselling and guidance. The second is the physical office for preliminary interviews, helping citizens take steps towards decarbonisation. The last is the digital office for information, which contains insights into the course of decarbonising your house. R9 adds that this infrastructure aligned with that of the regional energy office. At the same time, the municipality of Apeldoorn focussed on the relationships with involved companies and handled the financial situation, ultimately leading to an energy fund (R9). Thus, *diep* was occupied with learning processes, while Apeldoorn focussed more on the relationships between parties. These task delegations can be assigned to the fact that *diep*, at one point, would exit the Apeldoorn project.

R9 and *diep* (R1, R5) both said that there was much freedom in interpreting and shaping the task at hand. R9 attributed the success of the project partially to this form of collaboration—unimpeded interpretation. In this case, *diep* can be seen as a process intermediary (Kivimaa, 2019b), because they fulfilled a day-to-day coordinating job and connected local projects to regime priorities.

Finally, we can see a significant difference between Apeldoorn, Raalte and Renkum, as the focus shifted to implementation. While visions display direction, they lack explanation (Hodson & Marvin, 2010). *Diep's* role was, therefore, to translate and interpret direction yielded by former participation processes into practice (R5, R9).

4.2.3 Other stakeholders influencing the targeted activity

Respondents (R6–R9) briefly addressed the subject of influence from other stakeholders, which could be attributed to the fact that current projects do not yet require extensive cooperation with different parties. In addition, municipalities initiate the majority of assignments (e.g., visions) and, therefore, are in a strong position to avoid disputes with other stakeholders. These other stakeholders are, for example, local energy companies, entrepreneurs/companies located in municipalities (can be investors), regional-scale public actors/networks (Province, Waterschap, municipal health service/GGD, RES), just to name a few (R6–R9).

Evening the playfield

Regardless of influential stakeholders, in many cases, municipalities like to create an even playfield to facilitate open dialogue. Raalte, for instance, gave rise to the vision makers, a group that consisted of people from Raalte who were either known or new to the municipality (R7). R7 added that there was no assurance of citizens wanting to take part in the process, while they needed to produce a vision.

The portion of people known to the municipality, therefore, served as assurance and were invited to supplement their general knowledge. The final number of applications was a welcome surprise, leading to 100+ active vision makers. R6 added that the term 'vision makers' is broadly conceived; there were people from GGD, Waterschap (water board), other public bodies and non-governmental organisations. It was expected and believed that the vision makers gave input grounded mainly in their perception and not in their expertise, even though this could not be verified.

Similarly, in Renkum, who organised tables that included participants from all three spheres (public, private and civil). Organising the tables in such a way diminished differences and created a sense of unity. When asked about the different stakeholders, R8 began naming the tables and categorised the involved actors accordingly. It became evident to the researcher that even R8 unified actors in their table's task.

While the tables at Renkum were small (5–10), Raalte organised workshops (ateliers) with ±30 people, one for each spatial issue. R7 noted that there existed the danger of majority votes dominating the outcome of the vision. In an attempt to mitigate this effect, *diep* and Raalte, together with vision makers, questioned certain conclusions at the end of the process, thereby creating space for less popular voices and sustaining a healthy dialogic environment.

Apeldoorn did not govern with anyone over the energy office besides *diep*, as the municipality personally managed it. It is, however, the product of citizen participation; therefore, the public had a significant influence on its initiation and function, though not the realisation.

Looking back at Kanda et al. (2020), who identified intermediaries who connected with networks and groups of networks as a critical characteristic of transition intermediaries, these networks would consist of actors focussed on a specific niche. According to the respondents (6–9), however, this was not present in any of the three cases, both in regard to networks and the focus on a specific niche. Thus, the municipality and *diep* fell short on this characteristic. Nevertheless, both parties connected to many individuals originating in different domains, as described above, which, according to Parag and Janda (2014) is typical to transition intermediaries.

Stumbling blocks

While there were few stakeholders influencing the process, there was one who affected it the most. Both *diep* employees and public servant respondents alike identified 'municipalities', which are viewed as a stakeholder (Backhaus, 2010), as the most significant obstacle in current energy transition projects. Their strong position can cause repercussions for the process and results, which is linked to

administrative decision-making (*bestuurlijke besluitvorming*)—the internal affairs between people, their position and interests.

These internal conflicts also gave rise to *diep's* additional role of facilitating a connection on a human level (O1), requiring them to align different people within organisations. This was a role shared with municipality colleagues who tackled sustainability issues and were tasked with the advancement of the transition. While the strongly regulated role of decentralised governments in the energy transitions is often framed as the motor for development, it is not necessarily a given. The respondents underlined several points:

- Internal long-standing conflicts of interests created an unfavourable environment for development and acceptance (O1, R3, R5)
- High-ranking public servants often strove for short-term results in an attempt to improve their credibility and achievements, at the expense of more impactful alternatives. (R3)
- Some municipalities are afraid of ambitious plans, such as those proposed by *diep*, leading to the creation of a diluted version and, in so doing, chipping away at integrality. (O1, R5)
- Unaware of the possible outcome of the process, municipalities rejected the input collected through participation because they questioned its usefulness, instead choosing to rely on their own expertise. (R2, R7, R8)

When fear and caution take over, municipalities obstruct the certain potentiality of plans (as proposed by, e.g., *diep*), hindering intermediation and affecting the speed at which areas change.

4.2.4 Target group

The target group—in this research called the public—already made an appearance in previous sections as a promising option for local energy generation (prosumerism); a precondition to large-scale area development and an initiator of sustainable development. Energy transitions at municipal levels significantly influence the lives of many citizens and vice versa; this was a shared conception between *diep* employees and public servants. Nonetheless, the NOVI states that municipalities are free to choose whether to use the input obtained by mandatory participation. It makes one wonder why there is a certain flexibility in the management of public input. This section sheds light on the ambiguity of involving the public as a stakeholder. They are the target group and on the receiving end of the chain. In addition, they also influence the process as a stakeholder (earlier in the chain) and work towards effective value for the entity they represent. Moreover, this balance differs and is in proportion to the

attitude of a municipality. One thing is clear: in the cases of Raalte, Renkum and Apeldoorn, the public was not just on the receiving end of the chain.

'Municipalities should invest in a participation process that values the public.' Respondents provided mixed replies to this statement, but one answer was shared: 'when it works, it works well'. However, it continued to represent a personal obstacle for public servants, as it required them to let go of their role and opinion. R7 commented that it is easy to overshadow and interpret the public's viewpoints; in a way, the process falls victim to the habits of public servants. For that reason, *diep*'s presence was valued, as they strongly believe in the input of citizens and advocate for their use in projects, offering a new outlook (R6–R9).

Respondents R7, R8 and R9 commented that while they were familiar with participation processes, it still required strenuous efforts. Each project is unique and comes with a tailormade solution (R3). Adapting to both new contexts and users takes time, especially process-wise (R7, R9). The fact that participation processes need reshaping, and the public remains an incalculable variable discourages incorporation.

In addition, participation projects can be fruitless. The goal is always to obtain new insights leading to better plans. However, respondent 7 commented that obtaining new insights is not self-evident; there have been occasions when the results equalled the public servants' judgement. After investing time and energy, this is not a desirable outcome (R7). Those junctures fuel uncertainty and determine whether to initiate a participation process again for future projects.

Another obstacle were the citizens who come to represent the public. As previously discussed, the public is an entity representing different voices within a specific context (2.3). During observations (O1) and the interview with R8, it was mentioned that certain demographic groups (male, 50+, white) were more likely to take part in these processes. R8 commented that the input of a homogenous group raised questions about the generality of the input and even its usefulness. It remained a challenge to appeal to other demographic groups. R8 said *diep* and Renkum managed to reach various people by using different messages (4.2.2), but it did not entirely mitigate the persistent challenges and uncertainty. R7 added that Raalte questioned whether it is part of a municipality's role to seek out groups who were less likely to participate, stating that within the municipality there exists division on the subject.

Finally, involving the public contributes to accountability, which intimidates people within the municipality. It is thought that participation processes create expectations. Several respondents (R3, R5, R7, R8, R9) said there sometimes was fear that these expectations would ultimately exceed the capabilities of the municipality. In order to avoid 'impossible' promises, municipalities tend to avoid

open conversations (such as *luistervinken* in Raalte). In contrast to such fear, R6 and R7 commented that when an open dialogue was both motivating and informative to both parties, the overall project became more comprehensible—especially in terms of execution and capability.

References of participation can be clouded with dispiriting experiences. Nevertheless, *diep* employees emphasised in their interviews the advantages that well-structured participation processes offer. Moreover, public bodies function in the interest of the public; excluding the target group from shaping the future can appear self-defeating (R1–R5).

Involving the public creates a connection on a human level. The efforts to arrange participation and to be more communicative provide a solid foundation for mutual trust (O1). Respondent 3 commented that this foundation can unite the public and municipality in a mission. R6 added that transparency helped both sides understand the difficulties of the energy transition. In Raalte, the integrality become more tangible, and the vision makers began to see the full picture, which was both enjoyable and educational (R6).

Resonances with the public lead to a common and shared understanding of solutions (Backhaus, 2010). The solutions are found together, even in the case of Apeldoorn, when the public is informed what they can do to make their house more sustainable. The train of thought, from issue to solution is no longer a black box process. A comprehension of potentiality and limitations makes it possible for citizens to partake and take ownership of how the energy transition should manifest and benefit them, incidentally, leading to additional public benefits.

4.2.5 Targeted energy activities

This contextual layer normally discusses what niche technologies were implemented in a project. As previously discussed, early in the transition, most activities centred around niche promotion and regime destabilisation. Accordingly, *diep* aided municipalities by connecting (inter)national objectives with local public desires to shape a direction optimal for that context (the municipality). Hodson and Marvin (2010) note that to determine the effectiveness of intermediation, one should measure the resonance or dissonance between the initial vision and achievements over time. Little time has passed, making it challenging to compare both elements. Public value offers an alternative to measure the outcomes present at different moments during the process. Previous findings from sections 4.2.2 to 4.2.4 are also included in this section.

Before focussing on the outcomes (side effects), attention is given to the outputs, where different outcomes originate from. The outputs of the three cases are the more obvious milestones within the

projects. In Raalte, the outputs were the meetings with vision makers and the actual vision document RaalteHorizon (2020). Similarly, in Renkum, it was the table meeting and the respective agreement KlimaatakkoordRenkum (2019), which was formed through these meetings and final *Klimaattop*. Finally, in Apeldoorn, the output was the online infrastructure and energy office.

Outcome achievement

'Outcome achievement' refers to the extent to which a public body is improving publicly valued outcomes across a wide variety of areas.

In the case of 'outcome achievement', there are four types of value that can be created, all of which were introduced in 2.3.2 and derived from the work of Benington (2005). Pictured below, in table 2, are the results per value type per case for the facet *outcome achievement*.

	Raalte	**Renkum**	**Apeldoorn**
Economic	No apparent focus on economic benefits connected to the energy transition.	No apparent focus on economic benefits connected to the energy transition.	Largely centred around economic activity and employment. Economic activity in the sense that citizens were guided into making correct decarbonising investments. Affiliated companies (to the *energieloket*) will grow from these investments. According to R9, it is also expected that more energy coaches will be employed. These two factors are linked to the visibility created by *diep*.
Social and cultural	Different stakeholders were firmly united in a societal mission to create a futureproof municipality pertain to, among others, the energy transition. This is beneficial to social	R8 emphatically noted that it led to social capital. People were unaware of other initiatives and likeminded people. The organised events gathered them and brought them into contact. As such, there	The *energieloket* contributed mostly to social meaning. The office is a physical presence people can consult. It makes an abstract issue, such as energy, more comprehensible (R9).

	relationships, as the process felt like a rewarding experience to the vision makers (R6, R7). Furthermore, individual well-being was stimulated as citizens had the possibility of providing input and a chance to give their honest opinion, which contributes to mutual trust. Finally, the project gave new social meaning and identity to the three spatial issues.	was a shared sense of identity. R8 also mentioned people connected more in the beginning. The events functioned as a platform for new social relationships. The site and forum, unfortunately, are less active nowadays.	
Political	The starting point was to give citizens a central role in the formation of the vision through active public participation. Additionally, through structured meetings, context-important dialogues were initiated with citizens to properly understand what the public desires. Both elements displayed clear citizen empowerment and co-creation.	The tables represented a democratic dialogue between different actors and the municipality. The Renkum Klimaatakkoord mentioned that this dialogue led to plans and advice per energy subject, which is an indication of co-creation. *Diep* was not directly involved but was responsible for attracting various citizens and other actors.	The *energieloket* was the realisation of previous participation processes. The process of *diep*, therefore, did not require input from citizens.
Ecological	None yet, as they will not be measurable until the realisation phase of the vision.	None yet, as they will not be measurable until the realisation phase of the vision.	It is unclear how much CO_2-emissions have already been reduced; there is no data available on the number of houses made sustainable and what alterations are done.

Table 2. Outcome achievement.

In the majority of these results, it was challenging to attribute precisely who was responsible and accountable for what. Even if parties performed different jobs, it was only after combining the separate results that development occurred.

Characteristic to projects early in the transition, most of the results were realised in the social and political value types, which could be attributed to the fact that municipalities are naturally inclined to solve societal issues without consulting citizens. Therefore, by employing *diep* and involving the public, they (Raalte, Renkum and Apeldoorn) moved away from technocratic decision-making—a major difference from the original status quo—leading to generally significant steps in terms of progress.

It is also not surprising that economic and ecological values were barely stimulated, as the projects have not yet entered the realisation phase. This can be attributed to the fact that these values require effective action/realisation, as well as time and size, in order to be measured. Furthermore, Table 2 shows that the ecological value, that is, CO_2-emissions, will be measured, but respondents and documents did not disclose if and how. The CA (p.12) does state Netherlands Environmental Assessment Agency (PBL) will provide an annual climate and energy report (called KEV) on the reduced CO_2-emissions per sector, but only on a national scale. Therefore, ecological value for municipal (local) projects remains vague, especially when measuring CO_2.

Finally, outcomes in Raalte and Renkum seemed to emerge from the participation process. In contrast, outcomes in Apeldoorn originated from actual outputs (e.g., website and actual energy office). R9 commented that participation processes for the energy office were completed at an earlier stage, which could account for the difference in outcomes. Second, PV-outcomes arose through contact with the public; for Apeldoorn, contact only happens after realisation. This assumes that the precondition contact with the public can also be fulfilled through a website.

Trust and legitimacy

'Trust and legitimacy' refers to the extent to which an organisation and its activities are trusted and perceived to be legitimate by the public and by key stakeholders.

Pictured below, in table 3, are the results per case for the facet *trust and legitimacy*.

	Raalte	**Renkum**	**Apeldoorn**
Trust and legitimacy	Long-term work relations were perceived positively by R6 and R7. As the *diep*	R8 mentioned that *diep* fulfilled similar assignments in the past.	R9 underlined that *diep* is very transparent in their approach (thought

	employee was somewhat integrated into the municipal structure, trust developed organically. Second, prevent a majority vote creating a dominant narrative that influences the collective decision-making process. This assertiveness led to a legitimate process—preventing the participation becoming a direct object of public desires.	This gave him a sense of assurance. Because the process felt legitimate, R8 said he would repeat it, in other significant tasks.	processes) and the result they yield. This can be referred back to 4.1, connecting long-term goals to a setting.

Table 3. Trust and legitimacy.

Trust and legitimacy is subject to emotions and, for that reason, is hard to measure. Respondents needed to revisit the process in order to provide detailed descriptions, which proved quite challenging. R9 said previous experiences with other intermediary companies were less positive because of illogical reasoning or because they repeatedly requested guidance, both were not the case with *diep*.

Respondents were unanimous that experience, autonomy and transparency played a part in creating trust and legitimacy. Nonetheless, municipal respondents did not expand much upon this notion. *Diep* employees also noted that their presence was generally valued, and clients were quite satisfied with the yielded results. The aforementioned respondents did not address how this was perceived in the process of working towards results.

Service delivery quality

'Service delivery quality' refers to the extent to which services are experienced as being delivered in a high-quality manner that is considerate of users' needs.

Pictured below, in table 4, are the results per case for the facet *service delivery quality*.

	Raalte	**Renkum**	**Apeldoorn**
Service delivery quality	The vision was made by the vision makers, who represented the public;	*Diep* was not part of the formation of the vision.	The success of the *energieloket* rose after guidance by *diep*. R9 stated

	therefore, delivery quality should correspond highly. *Diep* was present as a neutral party to prevent public servants from overshadowing the results (R6, R7).		that the office is still visited regularly. Even in times of COVID-19, there are many digital educational events.

Table 4. Service delivery quality.

The sole critics of this facet were the public representatives. The citizens—who represent the public—were perhaps positive about the results and felt heard. However, it is impossible to say the same for citizens absent from the (participation) process. As R7 speculated (in 4.2.4), should the municipality reach out to a more diverse audience to increase the service delivery quality? At the end of the day, the entire population cannot be included into the democratic process (R7); there are limitations (financial; timewise), and decisions must be made.

In the three cases, municipalities were generally content about the results, which seemed to fit the identities of the regions and their populations.

Efficiency

'Efficiency' refers to the extent to which an organisation is achieving maximal benefits with minimal resources.

The notion of efficiency conflicts with the idea of incorporating the public. Public servants commented that effectively involving citizens is contra-productive, as it demands more money, time and energy. Thus, *diep* was employed to lighten the load for the municipality. Pictured below, in table 5, are the general results for *diep* for the facet *efficiency*.

	Raalte	**Renkum**	**Apeldoorn**
Efficiency	Knowledge-wise, *diep* was very efficient. All public servants stated that their experience in different subjects was beneficial to the project: • Decarbonising the built environment • Active public participation • Communication and engagement • Connection with different stakeholders		

Table 5. Efficiency.

Diep, ultimately, is an autonomous entity supporting the municipality. Their ready knowledge provided them the flexibility to carry out transition projects, mostly to their advantage (O1).

Public servants commented that the outcome would have been less effective without *diep*, but also that they would have sought a replacement. Thus, a transition intermediary was necessary for the studied energy projects.

5. Conclusion, limitations and recommendations

This explorative research examined the societal impact of the process of intermediation. The starting point was *diep*, and PV was chosen as the frame to construct the narrative. This choice cancelled out other sustainability transitions that *diep* is part of (i.e., circular economy, climate adaptation). This decision was based on the precondition that contact with the public is mandatory in PV-generation (Benington, 2005), leaving only the energy transition, in which participation is central. The MLP, which Geels (2002) introduces remains a simplification of reality. Consequently, in addition to the general progression, transitions require supplementary context information. Hence, an emphasis was placed on untangling the context. The main research question was the following:

What is the role of transition intermediaries, and how do they stimulate PV generation in the context of the Dutch energy transition?

This question was split up into five sub-questions, each covering different aspects. To answer these questions, qualitative methods and a two-step multiple case studies were chosen. This entailed first focussing on the unique approach of *diep*, followed by a broader appreciation of the intermediation process, using a comprehensive framework—re-pictured below (Figure 5). The second step reflected on three different energy transition cases to illustrate the diversity in projects and the various PV-results *diep* realised.

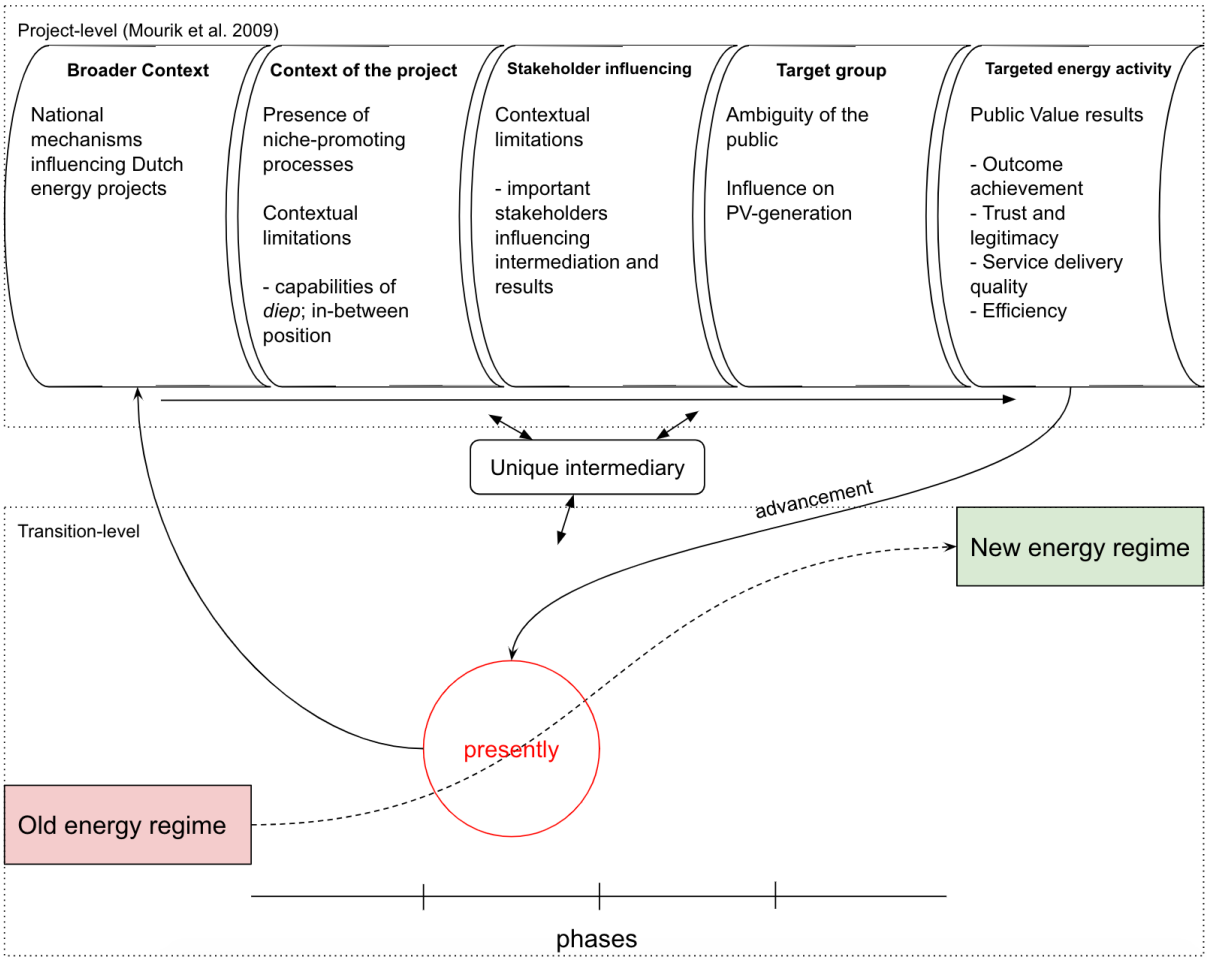

Figure 5. Conceptual Framework—*Intermediaries between transition and project levels, zooming in on contextual layers of Dutch energy transition projects (in the current phase).*

5.1 Revisiting the research questions

The main research question was answered through the sub-questions. The following section summarises the various findings.

What does the role of transition intermediaries entail according to scientific literature?

In a sense, the transition intermediary is the evolved form of the traditional intermediary. The most significant differences are the transition context and the number of connections made and sustained (Parag & Janda, 2014). The context drives transition intermediaries to become conscious of different social groups, their changing perspectives and the timing of events (Kanda et al., 2020; Grin et al., 2010). Transition intermediaries should have good 'antennae' for changes in the transition context. Parallel to an intermediary maturing simultaneously with the advancement of the transition is the fostering of many connections equally important, which are needed to shift the balance in an intermediary's favour (Fischer & Newig, 2016).

Ultimately, these two characteristics contribute to the main objective of implementing niche innovations on regime level, by niche creation/upscaling and regime (de)stabilisation (Matschoss & Heiskanen, 2018). Intermediaries, both traditional and transition, have necessary capabilities: facilitating, configuring and brokering (Stewart & Hyssalo, 2008). Through expertise, the transition intermediary fused these capabilities and formed niche-promoting processes: *articulate expectations and visions, build social networks*, *instigate learning processes* (Kivimaa, 2014). Exploration of the new context lies at the root of these niche-promoting processes, aiming to envision trajectories of sustainability transitions in specific urban contexts.

What insights are needed to generate PV?

Prior to the theoretical research, observations (e.g., work meetings—O1) revealed that sustainability objectives are inherently political and, therefore, entangled with societal interests. In the case of the energy transition, advancement goes hand in hand with spatial interventions in the living environment of citizens. Thus, public interest and needs are essential components of effective transition management—at least in the case of the Dutch energy transition. This valuation of public interests is also reflected in current policy documents (e.g., NOVI, CA), which respect public debate in the transition to decarbonisation and renewable energy generation.

These documents stated that the optimal form of energy innovations should be decided in deliberation with the public. The creation of PV should also take into account the opinions of both experts (public servants) and citizens. Nevertheless, what this PV ought to achieve remains vague, as there is no standardisation. The pursuit of 'best' PV seems impracticable without projecting personal goals and desires onto projects. As a result, PV is largely situational, and, according to public servant respondents, the population in place and individuals partaking in participation are most decisive. However, PV-generation depends on the readiness of initiating parties (i.e., municipalities) to put in the effort to organise well-structured participation processes.

The literature review uncovered that PV consists of outputs and outcomes (Alford & O'Flynn, 2009). Outputs are results you work towards—clear goals and end-products. For instance, in Raalte and Renkum, the objective was to create visions, which contained directions and values important for the energy transition in their respective urban contexts. In Apeldoorn, the main output was to give rise to an overall accessible energy office. Outcomes are benefits that come into existence through the process of working towards outputs and the actual presence of outputs. For example, in Raalte, citizens came together with municipalities to discuss subjects for the vision, and, in turn, became acquainted with each other and the municipality, thereby forming social relations. In Apeldoorn, the

infrastructure led to the energy transition attaining social meaning for its citizens. The outcomes seem extensive and difficult to perceive, even though they represent a large part of the results. Different scholars attempted to define PV, but only managed to measure parts due to the scope of their research. Faulkner and Kaufman (2018) created a framework, from existing findings, which uncovered all facets of PV: outcome achievement; trust and legitimacy; service delivery quality; efficiency. These facets are stimulated differently and form the base for measuring all generated PV in projects.

What is the outlook of the intermediary on intermediation in sustainability transitions?

Diep employees used the word 'connect' to describe their practice. The verb is at the heart of three core actions: translating objectives to the here and now; connecting elements; and connecting on a human level.

Components do not connect themselves; they require different impulses. The first is concretising abstract goals—mostly imposed by higher actors (e.g., the state). *Diep* breaks down these abstract goals into achievable goals and connects them to specific urban contexts, which starts by appealing to a client's imagination with how, for instance, a climate-friendly context can look. *Diep* applied this differently in Raalte; instead, they asked the vision makers pressing questions about ET-themes, which forced them to dig deep to create a depiction of how it would look in their living environment.

Second, when zooming in on the goals, *diep* incorporates all integral elements. In the case of the energy transition, there are the policymakers, providers and consumers. Moreover, *diep* also includes less orthodox stakeholders, e.g., the public, the living environment. In so doing, *diep* offers a holistic portrayal of how elements within energy-objectives are connected. For example, in Apeldoorn the goal was regime stabilisation because the office prior to *diep's* involvement did not have the desired effect. *Diep* sought out, together with Apeldoorn, to connect all important players and mediums: the municipality, energy coaches, partners and citizens (possible prosumers) through human (one-on-one enquiry), physical (energy office) and virtual (website) ways. According to R9, this modus operandi is still very effective and adaptive even in times of COVID-19. Broad definitions of problems and solutions create more impact because they take into account a multitude of factors. In some cases, the involvement of many elements can even create crossovers between multiple sustainability transitions.

Finally, a connection on a human level is necessary to create a collaborative space for transition management. R4 commented that sensing and understanding how inter-organisational affairs are oriented is crucial. While it is not part of *diep's* assignment, for their sake, they must comprehend it to be able to create a middle ground between and within organisations before

advancing projects to new heights. R5 also commented that *diep's* presence could trigger individual change, leading to a personal transition, causing a better understanding of the potentiality of certain projects.

How is intermediation present in projects?

The research revealed that municipalities and *diep* closely worked together and jointly organised intermediary processes. Moreover, it uncovered that municipalities illustrate intermediary characteristics, e.g., connecting to many actors and adapting to the changing transition context. This is unsurprising as municipalities are tasked to contribute to national objectives. Therefore, they fulfil a double role of initiating municipal energy transitions and aligning context-important actors. Because municipalities lack expertise and/or workforce, they outsource (intermediary) work to lighten their workload. Accordingly, municipalities and *diep* closely worked together while remaining separate entities. *Diep* respondents remarked that they functioned as a leverage in-between and within organisations to pursue objectives integrally. In contrast, this interdependency can also work counterproductively because intermediary organisations can easily be stripped of their authority, which restricts their capabilities (Manders et al., 2020).

Additionally, niche-promoting processes, which originally are intermediary transition tactics, were central to the chosen projects as end-goals. For instance, Raalte and Renkum had the objective to *articulate expectations and visions*; these documents were meant to destabilise the current regime by introducing a new take on the energy innovations in deliberation with the public. Renkum also aimed at *building social networks* through organising an improved form of the *klimaattafels*, which led to the creation of an online forum. In the case of *instigating learning processes*, Apeldoorn greatly focussed on connecting subject matter in various ways to citizens (e.g., how to decarbonise your house), so citizens could gain insight into how niche innovations could improve their livelihood. The three chosen projects all aimed to promote niches in an intermediary fashion—through employing processes that are focussed on the exploration of futures, relationships or knowledge. It is unclear whether this counts for most projects situated in this transition phase.

Finally, this research showed that *diep* employees strongly orient themselves towards involving the public (target group). This is reflected in the way the public was positioned in the three cases as the focal point. Diep's normative stand on the subject can help shift the equilibrium between recipiency and participation. While the *Omgevingswet* already requires municipalities to incorporate participation in energy projects, municipalities still decide how to arrange and whether to use the input from the process. Thus, it depends on the mentality of the municipality if the public is on the receiving end (recipiency) or has a say in what the planned development should embody

(participation). Public servants expressed that they experienced dispiriting attempts in the past, failing to deepen the connection with the public or increase the impact of projects. While there still exists much uncertainty, *diep* illustrated how all-embracing participation processes yield desirable results. R8 commented that it encouraged him to work more closely with citizens in future projects, which is an example of learning to see the potentiality of projects.

How are the different facets of public value stimulated by the intermediary in question?

The four facets are each unique and, therefore, stimulated and measured differently. In the case of 'outcome achievement', outcomes were generated as a joint effort of *diep* and the municipality because they work closely together. These outcomes span four domains: economic; social and cultural; political; ecological (Benington, 2005). Due to the take-off phase and corresponding Dutch policy texts, projects currently centre around envisioning instead of realising niche innovations. Consequently, *social and cultural* and *political* values are principally stimulated compared to *economic* and *ecological* values. The reason for this is that *economic* and *ecological* values require effective action (e.g., the realisation of projects), time—results become more apparent over time (e.g., the sum of clients helped by the energy office in Apeldoorn grows every year) and size (large-scale renewable energy generation are more effective).

While *economic* and *ecological* values were hardly stimulated, the research did uncover different results. In Raalte, the unification of citizens and actors into a single entity called 'vision makers' led to new social relationships, that took on the central role of creating a futureproof vision for three spatial issues. In Renkum, the *klimaattafels* event functioned as a platform through which interested people could share existing initiatives and connect; furthermore, the event was a democratic dialogue in which plans and advice per subject was formulated. Apeldoorn was different from the other projects as outcomes were created not through the process but after the implementation of outputs. The outputs, three information channels (virtual, physical, human), led to social meaning and visibility of the ET.

In contrast, 'trust and legitimacy' was challenging to measure. This facet is highly subjective and dependent on the perceptions of others. The public servants were all positive about the process with *diep* but did not dwell on the notion. One example of legitimacy was the choice to prevent the majority from dominating the narrative in Raalte. However, there were no other equally clear examples.

The third facet, 'service delivery quality', was stimulated in proportion to the presence of the public. For instance, in Raalte, where the public (vision makers) made the document, service delivery quality was very high. Similarly, in Apeldoorn, citizens visiting the energieloket received personal

support from energy coaches to find tailor-fit solutions, generally leading to satisfied people. The crux is that both reflect only a portion of the population; for that reason, it cannot be reasonably concluded that specific actions truly serve the entirety of the target group or just a portion.

Finally, 'efficiency' exposed that municipalities required a transition intermediary for the discussed energy transition projects. The three municipalities commented that *diep's* expertise and assistance added easiness and effectiveness. Moreover, *diep's* role can be replaced by similar third parties but cannot be left out of the equation.

Synthesis

Transition intermediaries are new types of actors brought into existence by new dynamic transition contexts. When the research honed in on the Dutch energy transition context, it became evident that intermediaries are more essential than initially thought. Both unconsciously present as municipalities and consciously through actors as *diep*—intermediaries have become indispensable. The two groups are also dependent on each other, as municipalities outsource work and *diep* helps them in achieving impact. *Diep* does this by translating abstract goals to a specific context, involving integral elements to create a better understanding, and connecting to people to create a middle ground. Transition intermediaries also employ special niche-promoting processes, that surprisingly functioned as the end-goal of the chosen three cases.

The cases illustrated that the generation of PV and its four facets is largely situational and dependent on the citizens, who partake in the process. *Diep* showed a clear orientation to involving citizens and placed great emphasis on extensive participation in both Raalte and Renkum. In Apeldoorn, *diep* made it possible for citizens to reach out and learn in various ways. The effort to actively incorporate citizens and subjects led to various results. Mostly, in the social and cultural, and political domains. Overall, there was a better understanding of the transition, more social relations and more democratic dialogue. These, in turn, led to a shared mission and increased readiness for municipalities to re-organise similar projects. While *diep* only assisted the projects temporarily, their intermediary presence was deemed vital to achieving similar results in transition projects.

5.2 Limitations

The theoretical framework served as the foundation for this research. Naturally, some theories fitted the study better. This was the case for theories on the transition context—MLP; context as multi-layered (ETlayers) and energy transition—all of which used similar reasoning, overlapped greatly and were easily applicable to the Dutch context. In addition, logics, such as shifting equilibrium from one regime to another; transition as a representation of multiple interconnected developments; and the

division of the context into layers going from cause to effect, helped form the conceptual framework and introduced structure in the research.

The other two central concepts proved more challenging. The transition intermediary concept was compatible with the transition context, but unique characteristics introduced in the theoretical framework—i.e., detailed descriptions of typologies (Kivimaa, 2019a); typologies' developments throughout transitions (Kivimaa, 2019b); and the tendency of transition intermediaries to connect to networks/groups of networks/groups of networks and institutions (Kanda et al., 2020)—were hard to verify, mostly due to researching for a set period, while transitions can span 25 years and more.

In the case of PV, its fluid nature was a solution to connect the societal impact on the process of intermediation. In contrast, while the output part was clear, the outcomes were overly fluid. Faulkner and Kaufman (2018) managed to comprise the full entirety of the concept into a theory—even advocating its use. While the general dimensions (four facets) are valued, they lack focus beyond their definitions. Understandably, too much focus is similarly limiting, but a further subdivision of PV results per facet could serve helpful in the future as a guideline in recognising and categorising specific developments. Regardless of the lack of focus, Faulkner and Kaufman (2018) is the first systemic review of PV and universally applicable—at least according to them. It might have also helped to adjust the focus in order to determine in advance what results are expected when *diep* (co-)organises intermediation processes in municipal energy projects. These expected results can even function as hypotheses in research, with the objective to verify them.

The inability to verify certain theories can be attributed to multiple limitations of the research. The first was the selection of projects and public servant interviewees. These were chosen from *diep*'s portfolio of finished projects. In addition, the focus on municipalities as possible intermediaries in the Dutch context further lowered the number of options. Some options, e.g., Renkum and Apeldoorn, centred around communication strategies as aligning methods. In contrast, the project in Raalte focussed more on the process side of intermediation and offered more extensive results. The difference in projects comes down to demonstrating either more traditional or transition intermediary characteristics. In cases such as Renkum and Apeldoorn, *diep* primarily displayed traditional characteristics, which yielded fewer interesting results. For instance, certain respondents (R8, R9) could not elaborate on the 'expected' transition intermediary characteristics (e.g., many connections; Kanda et al., 2020). This deterred conversations, while it could have been interesting to uncover niche-groups/networks *diep* is in contact with.

Second, *diep* has positive relations with the chosen public servant respondents; for that reason, the chance of confirmation bias is high. For instance, questions on barriers and setbacks did

not provoke critical reactions. Public servant interviewees also made clear that they enjoyed discussing the project and collaboration with *diep*. Furthermore, the researcher was also semi-affiliated and invested in a relationship with *diep* employees. A relationship between researcher and research subject is inevitable, but it can unknowingly influence judgement.

Finally, public servant respondents had a difficult time remembering precisely how the projects had progressed. In turn, they gave general answers that sometimes were hard to position in the project-context. The ETlayers framework (Figure 2) helped sort these answers in regard to intermediation and PV. However, that does not mitigate that these answers portrayed an incomplete and simplified version of reality. It is vital to remember that while these are simplified representations of projects, together they represent a nearly complete representation of the intermediary role of *diep* in municipal energy projects. It could have been more productive to have more cases and, in particular, to research recently finished projects to avoid interviewees struggling to recall details about roles, obstacles and objectives.

5.3 Recommendations

The findings of this research were the first to attempt measuring the societal impact of intermediaries through PV. It highlights the in-between position intermediaries have while contributing to an extensive number of actions. The importance of intermediaries in the Dutch energy transition is undisputed, especially as municipalities also seem to act as one.

Therefore, a focus on the intermediary role that municipalities fulfil could yield valuable results. Their fixed role in the transition narrative can be studied more easily than intermediaries, such as *diep*, who enter and leave the project-context. This sketches a general idea of what role decentralised governments have in the advancement of the Dutch/municipal energy transition, focusing on their initiating and aligning role—besides what policy texts state. This could also clarify why intermediary parties (e.g., *diep*) are consulted for assistance and expertise.

In addition, involving the public remains complicated. In the chosen projects, the connection between niche-level innovations and the public at the regime level was challenging to forge without the assistance of *diep*. It could be insightful to study organised participation for transition objectives and further dive into the democratic process needed for sustainable development, to answer the question, for instance: How do external parties guide municipalities in undertaking co-creative processes? (Raalte)

Another recommendation is to further elaborate on the four facets of PV. As previously discussed, a subdivision of core achievements/developments in the facet categories can serve as a better operationalisation for future research on PV-results in projects. For example, the facet ‘trust

and legitimacy' can be further clarified and substantiated with logic, to avoid becoming solely subject to emotions and preferences.

For *diep*, it would be smart to focus on the impact of their products. For instance, in the case of Raalte, they employed the *luistervinken* method, which is easier to study than *diep's* overall presence, because products introduce clear boundaries in the form of phases and expected results. Products, in a way, indicate an actor's capabilities to align and introduce subjects and stakeholders. A possible research question might be as follows: How did the luistervinken method transform the municipal approach to involving citizens?

Finally, the overlap between sustainability transitions is an interesting pathway to explore. *Diep* is familiar with the *Omgevingswet* (and NOVI), which already discusses climate adaptation and the energy transition as building blocks of a futureproof environment. Perhaps *diep* could explore what becoming futureproof entails as they are active in different transitions and believe in connecting elements in a holistic manner.

Literature

Abbott, A. (1992). From causes to events: Notes on narrative positivism. Sociological methods & research, 20(4), 428-455.

Alford, J., & O'flynn, J. (2009). Making sense of public value: Concepts, critiques and emergent meanings. *Intl Journal of Public Administration*, *32*(3-4), 171-191.

Asafu-Adjaye, J., Byrne, D., & Alvarez, M. (2016). Economic growth, fossil fuel and non-fossil consumption: A Pooled Mean Group analysis using proxies for capital. *Energy economics*, *60*, 345-356.

Backhaus, J. (2010). Intermediaries as innovating actors in the transition to a sustainable energy system. *Central European Journal of Public Policy*, *4*(01), 86-109.

Benington, J., & Moore, M. H. (2011). Public value in complex and changing times. *Public value: Theory and practice*, *1*.

Bryman, A. (2012). Social research methods: OUP Oxford.

Climate Agreement. (2019). Retrieved from https://www.government.nl/binaries/government/documents/reports/2019/06/28/climate-agreement/Climate+Agreement.pdf

Climate site. (n.d.). Retrieved from https://www.klimaatakkoord.nl/participatie/vraag-en-antwoord/hoe-worden-burgers-betrokken-bij-het-klimaatakkoord

Creative Commons. (2019). Photo by Chuxlancev. Retrieved from https://commons.wikimedia.org/wiki/File:AntBridge_Crossing_09.jpg

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC medical research methodology*, *11*(1), 100.

Faulkner, N., & Kaufman, S. (2018). Avoiding theoretical stagnation: a systematic review and framework for measuring public value. *Australian Journal of Public Administration*, *77*(1), 69-86

Fine, G. A., & Deegan, J. G. (1996). Three principles of serendip: insight, chance, and discovery in qualitative research. *International Journal of Qualitative Studies in Education*, *9*(4), 434-447.

Fischer, L. B., & Newig, J. (2016). Importance of actors and agency in sustainability transitions: a systematic exploration of the literature. *Sustainability*, *8*(5), 476.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative inquiry*, *12*(2), 219-245.

Frederickson, H. G. (1991). Toward a theory of the public for public administration. *Administration & Society*, *22*(4), 395-417.

Fouquet, R., & Pearson, P. J. (2012). Past and prospective energy transitions: Insights from history.

Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. *Research policy*, *31*(8-9), 1257-1274.

Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental innovation and societal transitions*, *1*(1), 24-40.

Geels, F. W., & Schot, J. (2007). Typology of socio-technical transition pathways. *Research policy*, *36*(3), 399-417.

Grin, J., Rotmans, J., & Schot, J. (2010). 6 Reflections: Process Theory, Causality and Narrative Explanation. In Transitions to sustainable development (pp. 113-122). Routledge.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, *2*(163-194), 105.

Gustafsson, S., & Mignon, I. (2020). Municipalities as intermediaries for the design and local implementation of climate visions. *European Planning Studies*, *28*(6), 1161-1182.

Hirsh, R. F., & Jones, C. F. (2014). History's contributions to energy research and policy. *Energy Research & Social Science*, *1*, 106-111.

Hoge Raad (2019), ECLI:NL:HR:2019:2007_Urgenda case, Date accessed April 6th 2020, from https://www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf

Hodson, M., & Marvin, S. (2010). Can cities shape socio-technical transitions and how would we know if they were?. *Research policy*, *39*(4), 477-485.

Hölscher, K., Wittmayer, J. M., & Loorbach, D. (2018). Transition versus transformation: what's the difference?. *Environmental Innovation and Societal Transitions*, *27*, 1-3.

Hyysalo, S., Juntunen, J.K., Martiskainen, M., 2018. Energy Internet forums as acceleration phase transition intermediaries. Res. Policy 47, 872–885. https://doi.org/10.1016/j.respol.2018.02.012.

Imperatives, S. (1987). Report of the World Commission on Environment and Development: Our common future. *Accessed Mar*, *2*.

Kanda, W., Kuisma, M., Kivimaa, P., & Hjelm, O. (2020). Conceptualising the systemic activities of intermediaries in sustainability transitions. *Environmental Innovation and Societal Transitions*.

Kant, M., & Kanda, W. (2019). Innovation intermediaries: What does it take to survive over time?. *Journal of Cleaner Production*, *229*, 911-930.

Kelly, G., Mulgan, G., & Muers, S. (2002). Creating public value. *London, Cabinet Office*.

Kenis, A., Bono, F., & Mathijs, E. (2016). Unravelling the (post-) political in transition management: interrogating pathways towards sustainable change. *Journal of Environmental Policy & Planning*, *18*(5), 568-584.

Kivimaa, P. (2014). Government-affiliated intermediary organisations as actors in system-level transitions. *Research policy*, *43*(8), 1370-1380.

Kivimaa, P., Boon, W., Hyysalo, S., & Klerkx, L. (2019a). Towards a typology of intermediaries in sustainability transitions: A systematic review and a research agenda. *Research Policy*, *48*(4), 1062-1075.

Kivimaa, P., Hyysalo, S., Boon, W., Klerkx, L., Martiskainen, M., & Schot, J. (2019b). Passing the baton: How intermediaries advance sustainability transitions in different phases. *Environmental Innovation and Societal Transitions*, *31*, 110-125.

Klag, M., & Langley, A. (2013). Approaching the conceptual leap in qualitative research. *International Journal of Management Reviews*, *15*(2), 149-166.

Klein, P. (2019, May 14th). Krijgen we straks inspraak bij de klimaatplannen?. *RTLnieuws*.

Klimaatakkoord Renkum. (2019, June). Renkum verduurzaamt samen. From https://renkumverduurzaamtsamen.nl/klimaatakkoord_rvs/

Kropman, R (2019, October 19th). Hoe de wetenschap werd overgeslagen bij het klimaatberaad. *Trouw*.

Loorbach, D., & Rotmans, J. (2006). Managing transitions for sustainable development. In *Understanding industrial transformation* (pp. 187-206). Springer, Dordrecht.

Loorbach, D. (2010). Transition management for sustainable development: a prescriptive, complexity-based governance framework. *Governance*, *23*(1), 161-183.

Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability transitions research: transforming science and practice for societal change. *Annual Review of Environment and Resources*, *42*.

Manders, T. T., Wieczorek, A. A., & Verbong, G. G. (2020). Complexity, tensions, and ambiguity of intermediation in a transition context: The case of Connecting Mobility. *Environmental Innovation and Societal Transitions*, *34*, 183-208.

Matschoss, K., & Heiskanen, E. (2018). Innovation intermediary challenging the energy incumbent: enactment of local socio-technical transition pathways by destabilisation of regime rules. *Technology Analysis & Strategic Management*, *30*(12), 1455-1469.

Meadowcroft, J. (2009). What about the politics? Sustainable development, transition management, and long term energy transitions. *Policy sciences*, *42*(4), 323.

Meynhardt, T. (2009). Public value inside: What is public value creation?. *Intl Journal of Public Administration*, *32*(3-4), 192-219.

Miller, C. A., Richter, J., & O'Leary, J. (2015). Socio-energy systems design: a policy framework for energy transitions. *Energy Research & Social Science*, *6*, 29-40.

Moon, K., & Blackman, D. (2014). A guide to understanding social science research for natural scientists. *Conservation Biology*, *28*(5), 1167-1177

Moore, M. H. (1995). *Creating public value: Strategic management in government*. Harvard university press.

Moses, J., & Knutsen, T. (2012). *Ways of knowing: Competing methodologies in social and political research*. Macmillan International Higher Education.

Mourik, R. M., Breukers, S., Heiskanen, E., Bauknecht, D., Bürger, V., Feenstra, C. F. J.,... & Johnson, M. (2009). Conceptual framework and model: synthesis report tailored for policy makers as target group: a practical and conceptual framework of intermediary demand-side practice.

NOVI. (n.d.) Retrieved from https://denationaleomgevingsvisie.nl/publicaties/english+versions/HandlerDownloadFiles.ashx?idnv=1451458

O'Connor, P. A. (2010). Energy Transitions. The Pardee Papers: no 12. The Frederick S. *Pardee Center for the Study of the Longer-Range Future, Boston University. Available from:/http://www. bu. edu/pardee/files/2010/11/12-PP-Nov2010. pdfS*.

Omgevingswet. (2016). Retrieved from https://zoek.officielebekendmakingen.nl/stb-2016-156.pdf

Parag, Y., & Janda, K. B. (2014). More than filler: Middle actors and socio-technical change in the energy system from the 'middle-out'. *Energy Research & Social Science*, *3*, 102-112.

Platform Overheid. (2020). Weeffouten in het denken en doen over aardgasvrije wijken. Retrieved from https://platformoverheid.nl/artikel/weeffouten-in-het-denken-en-doen-over-aardgasvrije-wijken/

RaalteHorizon. (2020). Onze omgevingsvisie—concept. From https://www.raalte.nl/sites/default/files/Concept-Omgevingsvisie-Horizon-gemeente-Raalte-2040.pdf

Rapley, T. (2004). Interviews in Seale. *Qualitative research practice, op cit*, 15-33.

Rhodes, R. A. (2012). Waves of governance. In *The Oxford handbook of governance*.

Rijksoverheid (2019), Het Klimaatakkoord in (meer dan) 70 vragen, Date accessed April 3rd 2020, from https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/publicaties/2019/06/28/het-klimaatakkoord-in-meer-dan-70-vragen/Het+Klimaatakkoord+in+%28meer+dan%29+70+vragen_28juni2019.pdf

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F.,... & Nykvist, B. (2009). A safe operating space for humanity. *nature*, *461*(7263), 472-475.

Ros J. & K. Schure (2016), Vormgeving van de energietransitie, Den Haag: Planbureau voor de Leefomgeving.

Rotmans, J., Kemp, R., & Van Asselt, M. (2001). More evolution than revolution: transition management in public policy. *Foresight-The journal of future studies, strategic thinking and policy*, *3*(1), 15-31.

Rvo. (n.d.). Retrieved from https://www.rvo.nl/onderwerpen/duurzaam-ondernemen/duurzame-energie-opwekken/aardgasvrij/aan-de-slag-met-aardgasvrij/transitievisie-warmte-en-wijkuitvoeringsplan

Samaratunge, R., & Wijewardena, N. (2009). The changing nature of public values in developing countries. *Intl Journal of Public Administration*, *32*(3-4), 313-327.

Schoots, K. & P. Hammingh (2019), Klimaat- en Energieverkenning 2019, Den Haag: Planbureau voor de Leefomgeving.

SER. (n.d.). Energieakkoord voor duurzame groei. Retrieved from https://www.pbl.nl/publicaties/het-energieakkoord-wat-gaat-het-betekenen

Singh, H. V., Bocca, R., Gomez, P., Dahlke, S., & Bazilian, M. (2019). The energy transitions index: An analytic framework for understanding the evolving global energy system. *Energy Strategy Reviews*, *26*, 100382.

Smil, V. (2010). *Energy myths and realities*. Washington, DC: AEI Press.

Smith, A., Stirling, A., & Berkhout, F. (2005). The governance of sustainable socio-technical transitions. *Research policy*, *34*(10), 1491-1510.

Sovacool, B. K. (2016). How long will it take? Conceptualizing the temporal dynamics of energy transitions. *Energy Research & Social Science*, *13*, 202-215.

Sperling, K., Hvelplund, F., & Mathiesen, B. V. (2011). Centralisation and decentralisation in strategic municipal energy planning in Denmark. *Energy Policy*, *39*(3), 1338-1351.

Steurer, R. (2013). Disentangling governance: a synoptic view of regulation by government, business and civil society. *Policy Sciences*, *46*(4), 387-410.

Stewart, J., & Hyysalo, S. (2008). Intermediaries, users and social learning in technological innovation. *International Journal of Innovation Management*, *12*(03), 295-325.

Stoker, G. (1998). Governance as theory: five propositions. *International social science journal*, *50*(155), 17-28.

Tsoukas, H. (2009). Craving for generality and small-n studies: a Wittgensteinian approach towards the epistemology of the particular in organization and management theory. In *Philosophical Organization Theory*. Oxford University Press.

Van Thiel, S. (2014). *Research methods in public administration and public management: An introduction*. Routledge.

Williams, I., & Shearer, H. (2011). Appraising public value: Past, present and futures. *Public administration*, *89*(4), 1367-1384.

Yin, R. K. (2003). Case study research design and methods third edition. *Applied social research methods series*, *5*.