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SONNET – SOCIAL INNOVATION IN ENERGY TRANSITIONS

Co-creating a rich understanding of the diversity, processes, contributions, success and future potentials of social innovation in the energy sector

D2.1 (D5)

Report on encouraging SIE through collaborative governance arrangements

Project Coordinator: Fraunhofer ISI (Karoline S. Rogge)

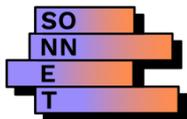
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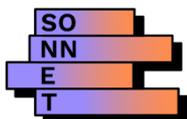
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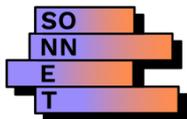
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3	University of Sussex, with its Science Policy Research Unit (SPRU)	UoS	UK	
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Executive Summary

SONNET (Social Innovation in Energy Transitions) aims to co-create a rich understanding of the diversity, processes, contributions, successes and future potentials of social innovation in the energy sector (SIE). This report aims to contribute to two SONNET objectives:

O2 Identify and analyse enabling and impeding conditions for SIE processes, with a focus on socio-economic, socio-cultural (incl. gender) and socio-political issues and their interrelations with socio-technical aspects.

O5 Encourage successful SIE through co-creating socio-political strategies to enhance governance arrangements and policy networks as well as SIE-related power and policy dynamics.

In reference to the objective (O2) this report addresses the research question: What are governance arrangements related to SIE and how (under what conditions) do they evolve over time? In reference to objective (O5) this report aims at answering the research question: How can (novel) governance arrangements encourage the development of SIE? These questions are investigated based on new institutionalism and its uptake in social innovation and sustainability transitions literature.

The deliverable presents: a **SIE governance typology** illustrating the diversity of governance arrangements used by city administrations to facilitate and support SIE; and **four propositions enhancing the understanding of SIE governance emergence and institutionalisation**. The SIE typology emerges from a matrix constructed along two dimensions: (a) social interactions (cooperation, exchange, competition, conflict), and (b) governance modes (hierarchical, market-based and network-based). The resulting typology includes 12 types of SIE governance. The types of SIE answer what approaches city administrations can take (and are taking) to steering issues related to social innovation in energy.

The four propositions were constructed in an iterative process of empirical data and theory comparison. They describe the significance of 1) mimetic isomorphic pressures working through peer pressure among professional city and regional networks, 2) the existence of institutional infrastructure supporting and operationalising SIE agendas, 3) the role of institutional entrepreneurs, working from bottom-up and political and top management leaders of city administrations, working from top-down to support and develop SIE, 4) the role of external resources for shaping sustainability and SIE agendas in city administrations.

The typology and propositions are based on empirical research and theoretical frameworks developed in SONNET's WP1 "Concept and Synthesis" and from three types of data: reflection circles, interviews, and documents gathered in Task 2.1. "Collaborative governance arrangements for SIE".

This deliverable explains in detail how SONNET's SIE governance typology and SIE governance propositions were developed, what methodological choices were made and what empirical data was collected to substantiate and describe the different types of SIE governance.

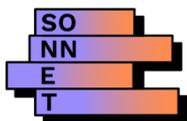
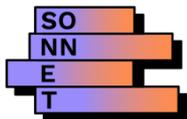


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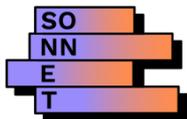
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1 INTRODUCTION: REPORT ON COLLABORATIVE GOVERNANCE ARRANGEMENTS IN THE CONTEXT OF THE SONNET PROJECT

SONNET (Social Innovation in Energy Transitions) aims to co-create a rich understanding of the diversity, processes, contributions, successes, and future potentials of social innovation in the energy sector (SIE). This report focuses on the socio-political issues associated with SIE (addressed in work package 2) and on collaborative governance arrangements related to SIE (addressed in task 2.1., see Box 1).

Task 2.1. Collaborative governance arrangements for SIE (M9-M16) (25%)

Lead: KOZ, co-lead: ICLEI, supported by: ISI and DRIFT, further involvement: all partners

This task explores collaborative governance arrangements for facilitating SIE. First, SONNET maps governance arrangements of city administrations in urban areas for harnessing the potentials of SIE for sustainable energy transitions. This initial map builds on the analysis of empirical literature on SIE (T1.1) and is complemented by interviews with city administration representatives of each of our six SONNET cities. Secondly, this task focuses on how city administrations learn to govern energy transitions through zooming in on how novel collaborative governance arrangements for enabling local sustainable energy transition processes are developed. Data about past governance learning processes of the six SONNET city administrations are gathered through a facilitated exchange among them in the form of a “reflection circle” (Milestone MS17). The aim is to identify best practises for designing, implementing and learning from different ways of creating collaborative governance arrangements (D5).

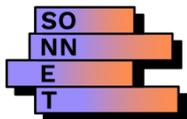
Box 1: SONNET – Description of Action, Annex 1 (part A), Task 2.1 (page 16)

This deliverable presents a dynamic, process-oriented collection of best practises for designing, learning, and implementing collaborative governance arrangements by city administrations of the six SONNET cities. As such, the deliverable reports on the mapping of governance arrangements used by city administrations to encourage SIE, which is complemented by findings from interviews with city representatives and a “reflection circle” between SONNET city administrations and researchers. Thereby, the aim of this deliverable is to contribute to two SONNET objectives:

O2 Identify and analyse enabling and impeding conditions for SIE processes, with a focus on socio-economic, socio-cultural (incl. gender) and socio-political issues and their interrelations with socio-technical aspects.

O5 Encourage successful SIE through co-creating socio-political strategies to enhance governance arrangements and policy networks as well as SIE-related power and policy dynamics.

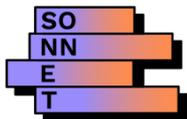
In reference to the objective O2, this report addresses the research question: *What are governance arrangements related to SIE and under what conditions do they evolve over time?* In reference to objective O5, this report aims at answering the research question: *How can (novel) governance arrangements encourage the development of SIE?* These questions are investigated based on theory on new institutionalism and its reception in social innovation and sustainability transitions literature. In particular, this research focuses on the emergence and institutionalisation of SIE-related governance performed by public administration.



The first part of this report provides a **theoretical framework** that enables the understanding of SIE-related governance in terms of diversity of governance arrangements and in terms of processes within which these arrangements evolve. This framework builds upon the literature on public policy and administration, social innovation and sustainability transitions, and in particular on conceptual considerations presented in the report on SONNET’s initial conceptual framework (deliverable D1.2).

The second part of the report focuses on the **diversity of governance arrangements**. This part combines theoretical considerations with a typology of social innovation in energy, developed within the SONNET project (deliverable D1.1.) and with empirical data obtained from documentary analysis and interviews conducted in task 2.1. on collaborative governance arrangements. The SIE typology distinguishes 12 SIE-types by combining two dimensions: (a) social interactions (cooperation, exchange, competition, conflict) and (b) their manifestations in the energy sector (doing, thinking, organising). For the purpose of this report, each type and its empirical manifestation were reviewed to identify (1) governance arrangements in use and (2) the role of city-level public administration in the development of a given SIE type. The review results are systematically compared with empirical data from (a) interviews with city administration representatives from each of our six SONNET cities, (b) documents (strategies, programmes, etc.) produced in relation to SIE governance, and (c) facilitated exchange of past experiences with collaborative governance between SIE academic and non-academic practitioners (reflection circle). The outcome of this procedure is a matrix that presents three governance modes used to facilitate, create and maintain SIE – through hierarchies, markets and networks – based upon four types of social interactions: cooperation, exchange, competition and conflict. The types of governance arrangements in the matrix answer what approaches city administration can take to steering issues related to social innovation in energy.

The third part of the report aims at understanding **processes of emergence and development of SIE governance** and the sequence of interactions and relations between SIE actors and a broader institutional context. This includes insights into the dynamics that influence these processes and the activities and “strategies” that SIE initiatives employ in attempts to reconfigure energy systems (see deliverable D1.2.). This part of the report is based on an institutional perspective and provides a set of propositions that illustrate the emergence and development of SIE-related governance in public administration. Moreover, the propositions identify a set of factors relevant for impeding and enhancing processes of SIE development.



2 COLLABORATIVE GOVERNANCE ARRANGEMENTS AND SOCIAL INNOVATION: CONCEPTUALISATION

SONNET understands governance as an approach to public management and policymaking that

- a) adopts hybrid practices by combining administrative systems with market mechanisms and non-profit organisations,
- b) is multi-jurisdictional by combining people and institutions across different policy sectors and different levels of government and
- c) encompasses multiple stakeholders linked in networks (Bevir, 2011, pp. 98-100).

Governance supplements traditional channels of representation built upon elections with more direct and deliberative forms of consent-building focused on problem-solving (Ansell, 2011). When performing governance, public agencies build democratic consent through collaborative and strategic problem-solving with stakeholders. This definition is broad enough to capture concepts like New Public Governance (Sørensen & Torfing, 2015), collaborative governance (Ansell & Gash, 2008; Sørensen, Hendriks, Hertting, & Edelenbos, 2020), participatory governance (Gustafson & Hertting, 2017), public governance (Kordasiewicz & Sadura, 2017; Sørensen & Torfing, 2015) and the interactive nature of governance (Sørensen & Torfing, 2018). In short, scholars understand governance as complex processes through which a plurality of public and private actors interact in order to formulate, promote and implement common objectives (Sørensen & Torfing, 2018). SONNET adopts this definition for the context of social innovation in energy (SIE), thereby defining **governance for SIE as a complex process through which a plurality of public, non-governmental and private actors interact in order to formulate, promote and implement social innovation in the energy sector.**

In task 2.1., we focus on **public governance** and therefore on public administration (city administration) as the subject that performs governance. We focus on public administration – which encompasses both elected and unelected officials – because of its special position and role within SIE fields. In these fields, public administrators are neither challengers nor incumbents (Fligstein & McAdam, 2012); they are governing units and the only actors able to directly shape the rules of the game: make regulatory decisions, decide about how policies and regulations are to be implemented, intervene in energy-related markets and networks. In other words, public administration can steer SIE processes through direct intervention or delegation of certain tasks to private and non-governmental actors. In this sense, governance does not mean the side-lining of the government’s role, but rather, the increasing of public participation that will facilitate the government’s ability to achieve its goals (McLaverty, 2011; Pierre & Peters, 2000). There is a relatively broad consensus that collaboration between relevant and affected social and political actors introduced by governance arrangements tends to improve the definition of problems, generate more ideas, stimulate mutual learning, build joint ownership, facilitate coordinated implementation and diffuse innovative solutions to new contexts (Hartley, Sørensen, & Torfing, 2013).

The broad consensus implies that the main **research question** we intend to answer in this report is: *what are the governance arrangements related to SIE (diversity question) and under what conditions do they evolve over time (process question)?* In both cases – of both the diversity and process question – we also ask *how (novel) governance arrangements can encourage the development of SIE?*

2.1 Diversity of governance arrangements related to SIE

The definition adopted for the purposes of this deliverable is based on a narrow understanding of governance as a specific approach to public management.

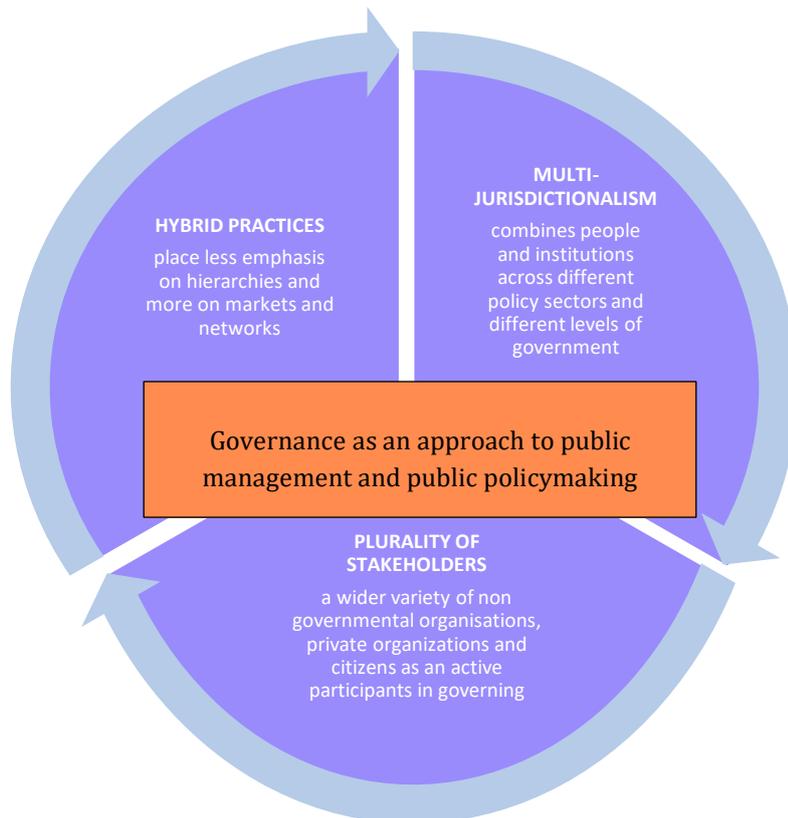


Figure 1: Governance as an approach to public management and policymaking (governance in the narrow sense)

Source: own elaboration based on Bevir (2011)

Nevertheless, some academics understand governance in broader terms and define it as “the formal and informal processes through which society and the economy are steered and problems are solved in accordance with common objectives” (Torfing, Peters, Pierre, & Sørensen, 2012), “structures and practices involved in coordinating social relations marked by complex reciprocal interdependence” (Jessop, 2011), “regimes, laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable the provision of publicly supported goals and services” (Lynn, Heinrich, & Hill, 2001). The subject performing governance can be a company, a non-governmental organisation or a public body. In other words, the concept of governance in its broader sense is not restricted to public agencies as performers of steering roles. The coexistence of these two types of definitions often leads to confusion, especially when experts from diverse backgrounds engage in a discussion about the management of public matters.

The broader governance framework is mentioned here because it delivers useful tools for the analysis of the narrowly understood governance as an approach to public management. Conceptualising governance as steering and coordinating allows for the narrowly understood concept of governance – as an approach to public management and

public policymaking – to be examined in order to identify different levels and kinds of governance and to link it more clearly to various concepts of learning outlined in organisational studies (Strumińska-Kutra, 2018). The three most commonly used modes of governance in its broader sense are: governing through **exchange (markets)**, through **imperatives (e.g. the hierarchy of a firm, organisation, or state)** and through **reflexive self-coordination (e.g. horizontal networking)**.¹

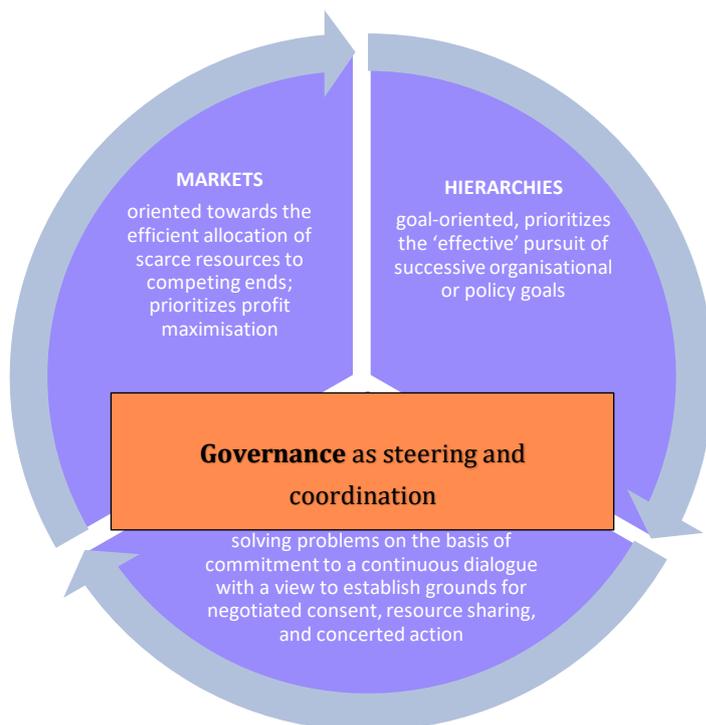
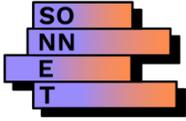


Figure 2: Modes of governance (governance in the broad sense)

Source: own elaboration based on Jessop (2011)

In this report, the three governance modes – based on hierarchies, markets and networks – are used to reflect on the diversity of SIE-related governance arrangements. These building blocks enable us to analyse SIE governance as a process in which public administration expands the traditional repertoire of coordination practices from mainly hierarchical – as observed until the early 1980s – to practices that combine all three modes in different proportions. This conceptualisation seems to be valid, especially since the definition of narrowly understood governance usually covers hybrid practices (combining hierarchies with markets and networks), together with multi-actor, multi-jurisdictional and multi-level public management practices.

¹ Some scholars identify the fourth mode – solidarity – typical of smaller communities and families, which will nevertheless be omitted in this analysis as irrelevant to its subject; that is, public issues and ways in which government and public bodies can manage the public sector through various modes of governance.



2.1.1 Governance modes and SIE types

SONNET understands social innovation as a multi-actor endeavour that can be initiated by and is engaged with different societal actors, thus not only by grassroots but also by local governments or businesses. Building on the work of Avelino et al. (2019) and Haxeltine et al. (2017), SONNET studies social innovations in energy as configurations of ideas, action and objects that change social relations by involving new ways of doing, thinking and organising energy (see deliverable D1.1). Keeping in mind that this report focuses on the governance of SIE (for definition, see below), two aspects above mentioned become crucial.

The first crucial aspect concerns the **diversity of actors** engaged in governance. This aspect is captured by the definition of SIE governance we adopt here.

Governance for SIE as a complex process through which a plurality of public, non-governmental, and private actors interact in order to formulate, promote, and implement social innovation in the energy sector.

While acknowledging the diversity of actors capable of performing governance, we focus here on governance performed by public administration, specifically by city-level administration. We explore what kind of governance approaches and tools they use to facilitate, support and maintain SIE. Of course, we do not lose sight of other actors. On the contrary, we ask what role public administration can play in supporting diverse types of SIE initiated by various actors, e.g. those evolving within grassroots or self-governing networks. When investigating these questions, we reach out to the SIE typology developed by SONNET in WP1 (see deliverable D1.1).

From the governance perspective, the second crucial aspect concerns manifestations of SIE as new ways of doing, thinking and organising energy. The focus on governance determines the prioritisation of “organising”. The SONNET SIE typology actually defines organising through governance: Organising is defined as “governance and organisational structures within initiatives and within the energy system (i.e. institutions in terms of forms of social organisation or standard operating procedures that shape behaviour and find expression through rules, practices and narratives)” (deliverable D1.1., page 8). Although organising is prioritised by SONNET, SIE types manifested through doing and thinking lose none of their relevance. This is because doing, thinking and organising are tightly interconnected and, in fact, present in each SIE type. The difference are more a matter of emphasis rather than presence.

The SONNET SIE typology was a departure point for the exploration of diverse governance arrangements related to SIE (see deliverable D1.1). It characterises SIE as sociotechnical configurations of ideas, action and objects that change social relations and involve new ways of doing, thinking, and organising. These sociotechnical configurations are categorised in a matrix along with two variables: (a) social interactions (cooperation, exchange, competition, conflict) and (b) their manifestations in the energy sector (doing, thinking, organising). The resulting SIE typology includes 12 types, each socially innovative to the extent that they all actually change social relations, while their ways of doing, thinking and organising energy deviates from dominant ways of doing, thinking and organising in current energy systems (see deliverable D1.1.).

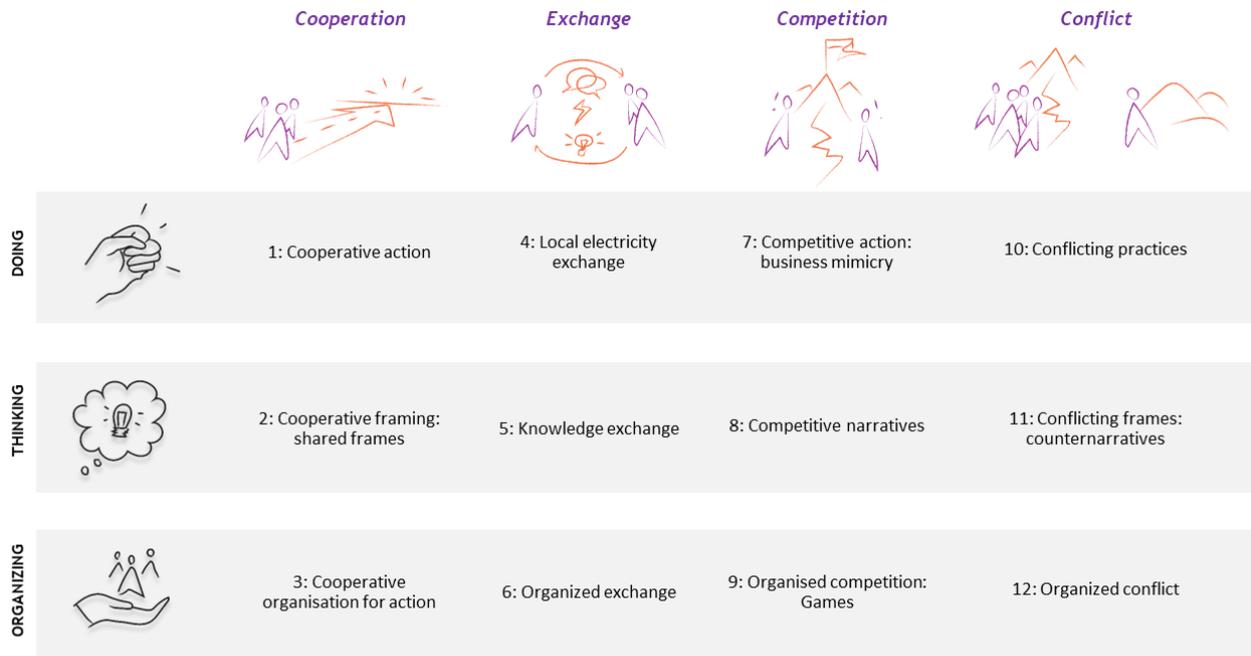
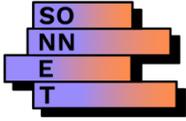


Figure 3: Overview of the types of social innovation in energy

Source: SONNET deliverable D1.1. (p. 22)

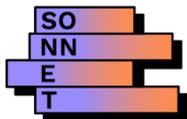
In the first step, each of the 12 types was reviewed in order to identify (a) **governance arrangements** present in a given SIE type and (b) the **role of public administration** in the development of a given SIE type. This review included reading on the type description provided in the deliverable text and the empirical cases exemplifying each type in deliverable D1.1.

In the second step, the governance arrangements used in each of SIE types were categorised as following one of the three governance modes: hierarchies, markets or networks. In line with the definition of governance as an activity that involves hybrid practices, in many cases the arrangements were blends of two or even three modes, but one of the modes usually becomes dominant. As a result, the categorisation unpacks one part of the SIE typology – that of organising – into three modes of governance. When juxtaposing the governance modes variable with the social interactions variable, a matrix emerges that presents the **SIE governance typology** (see Table 1).

The above matrix provided analytical categories for the analysis of empirical data gathered in task 2.1., directly devoted to the phenomenon of governance (see Section 3 for information about the research approach). The categorisation of empirical data was the third and last step in the process of investigating the diversity of governance arrangements.

2.1.2 Process: The institutionalisation of SIE-related governance

In order to investigate linkages between actors and institutions, the inquiry focuses on public agencies (city administration) and on specific social innovations in energy. SIEs are arenas in which individuals temporally bracket, modify and experiment with originally existing institutions (Cartel, Boxenbaum, & Aggeri, 2019). In result of these interactions, institutions that regulate the status quo in energy are (or can be) transformed. The following analysis



observes the actors' embeddedness within a wider institutional system and the practices by which the actors either maintain or try to change the system. The reconstruction of interactions between individuals and institutions is provided with Coleman's logic of explanation, which scrutinises

- (1) the influence of macro-level institutions on meso (organisational) and micro (individual) levels,
- (2) interactions on the micro level, in which macro-influences are socially negotiated and transformed, and
- (3) mechanisms that transform individual phenomena into meso- and macro-level outcomes (Coleman, 1990; Gilardi & Radaelli, 2012)

The below analysis is a journey through subsequent levels of analysis in an attempt to link macro processes with their local manifestations and, subsequently, in an attempt to track down the institutional outcomes of local change processes. The below framework offers a tool for the interpretation of empirical data on governance arrangements used by public administration to facilitate and support the development of SIE.

In the first step, we search for macro-level sources of institutional changes in energy-related governance patterns of city-level administration. In the institutional approach, macro-level factors are identified as influencing change on the meso and micro level, differentiating three types of institutional pressures towards isomorphism: coercive, mimetic and normative pressures (DiMaggio & Powell, 1983). Coercive pressures originate mainly from legal sources. Mimetic pressures emerge from uncertain situations, evidenced by copying practices proven to be successful. Normative pressures derive from approaches and orientations of professional groups. Accordingly, novel governance arrangements related to SIE can occur through adaptation to legal changes (coercive), the observation of other public agencies that implement SIE-related governance practices (mimetic), the intake of elected and nominated public officials educated within the new tradition of governance, communication in professional circles, or through the ongoing education of "old" officials, e.g. in the form of training and workshops (normative).

The explanation based on Powell's and DiMaggio's framework is relevant mainly for the macro and meso levels, setting aside the micro level of individual practices and perceptions. Moreover, this explanation does not account for the process of transforming micro-level answers into meso- and macro-level structures, which is of key importance for the analysis of organisational learning processes. Therefore, the explanation is supplemented here with institutional approaches that focus on the role of actors in the processes of institutional change (e.g. Alvesson, Hallett, & Spicer; Hargrave & Van de Ven, 2006; Lawrence & Suddaby, 2006). These approaches emphasise that – on the micro level – individuals interact with each other and it is in the course of interactions that institutions can not only be redefined but also created and destroyed. Practices from the individual level transform institutional structures at the meso and macro level. Considered within this framework, public organisation becomes an arena on which old and new ways of doing things meet. Public organisation is a platform on which micro, meso, and macro levels engage in an interplay. In the course of interactions, individuals – institutional entrepreneurs (local politicians, bureaucrats and external actors) – perform institutional work: they create, transform, maintain and disrupt institutions. Institutional work is understood here as a practice that is to intentionally affect institutions (Lawrence & Suddaby, 2006; Lawrence, Suddaby, & Leca, 2009; Zietsma & Lawrence, 2010). Following Battilana, Leca & Boxenbaum (2009) an institutional entrepreneur is conceptualized as an Individual who initiates (institutional) changes and actively participates in their implementation. To underline the fact that institutional entrepreneurs are often located within public organization, the formulation institutional intrapreneur is used (Wenhong, Chen, Zhao, & Dang, 2019). The intertwined and interactive nature of institutionalization processes is illustrated on the figure below (Figure 4). It is a process within which a structure

becomes to be taken for granted by members of a social group as efficacious and necessary; thus it serves as an important causal source of stable patterns of behaviour (Surachaikulwattana & Philipps, 2017; Tolbert & Zucker, 1996).

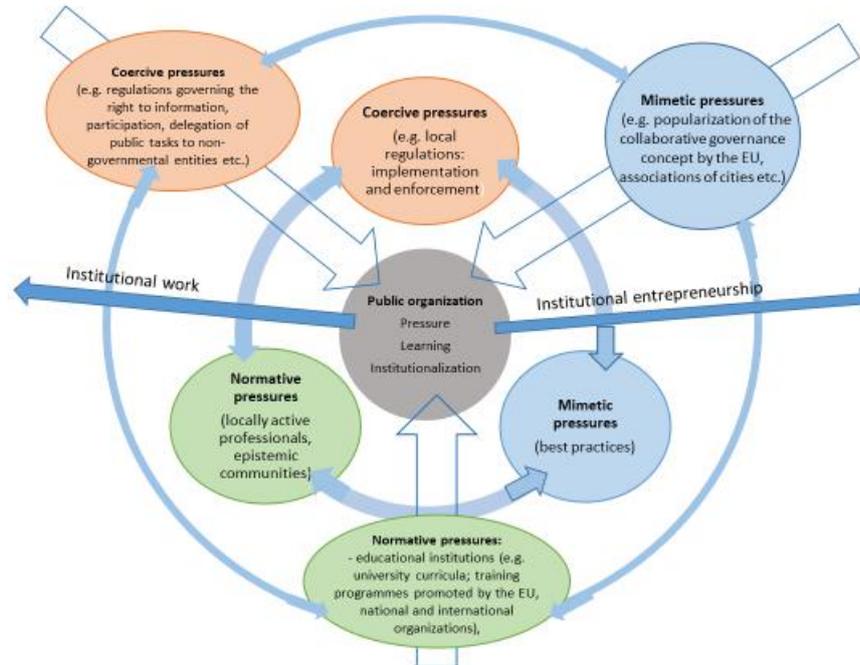
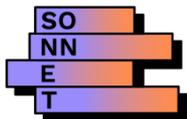


Figure 4: Institutional pressures and responses to the pressures

Source: modified from Struminska-Kutra 2018

Finally, we try to identify outcomes of institutionalisation processes. The outcomes can be observed on the individual level as new knowledge or skills, on the societal level as increased social capital or broadened networks, on the organisational level as the design of new organisational structures for learning and on the institutional level as how policies are interpreted within organisational fields (Strumińska-Kutra, 2018). Outcomes can also be distinguished in terms of scale; they can be visible on the local, regional, national or even international scale. The focus on outcomes closely relates to issues of power that are the subject of analysis in SONNET’s task 2.3 (Power dynamics between SIE and dominant institutions). The data provided here give insight into how the introduction of novel governance arrangements influenced power arrangements: who gained more power – the ability to influence decision, shape agendas, and form discourses – and whose power diminished?



3 METHODOLOGICAL APPROACH

The goal of SONNET's task 2.1. was to explore novel collaborative governance arrangements for facilitating SIE. The research design was composed of three parts.

Firstly, the research relied on the typology of SIE developed in SONNET. Empirical examples of SIE initiatives were used to initially map governance arrangements used by city administrations for harnessing the potentials of SIE for sustainable energy transitions. The analysis referred to existing literature on collaborative governance and governance for innovation, which resulted in the idea of the categorisation of governance arrangements according to three steering modes: hierarchies, markets and networks.

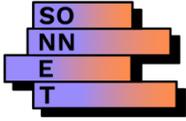
Secondly, data from three types of sources were analysed: reflection circles, interviews and documents. Initial data and ideas for the semi-structured interview guide were gathered through reflection circles, meaning facilitated dialogues between researchers and public administration practitioners. Reflection circles were conducted during SONNET's third research consortium meeting in January 2020. The SONNET research team was divided into five groups of four or five people – with each group including city representatives and academics – and asked to discuss their experiences with collaborative and experimental processes by focusing on stories of successes and failures. They were asked to make short notes on Post-its. The Post-its were collected and analysed. Themes that emerged from the discussions were incorporated into the interview guide for further investigation and into SONNET's transdisciplinary research protocol (deliverable D4.1). Among other elements, the themes comprised the issue of translation needed in transdisciplinary settings, the role of political leadership and the building of institutional infrastructure.

Between April and October 2020, 12 interviews were conducted with city administration representatives. Two public officials from each partner city were interviewed (Mannheim, Antwerp, Bristol, Basel, Warsaw and Grenoble). We interviewed those who create conditions for SIE's functioning; in other words, the public administration representatives (both elected and appointed) who perform public and collaborative governance. The following selection criteria were used:

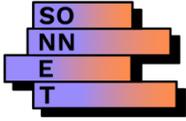
- leadership position (a person in the position to influence city policies and organisational operations),
- a person engaged in or overseeing collaborative processes (the inclusion of external actors into decision-making processes),
- many years of experience in public administration, responsible for issues in the field of energy and the broader field of sustainability.

All interviews were conducted online and took about an hour. Ten interviews were conducted in English and two in Polish. Only the English interviews were transcribed, using the automatically automatic transcription service NVivo.² The interview data was supplemented with documentary data delivered by interviewees. The documentary data were used to gain supplementary knowledge about issues mentioned in interviews. Interview transcripts were analysed in an iterative process moving between data and theory. The SONNET SIE typology, the institutional perspective and the governance studies perspective delivered a departure point for the analysis and were modified and developed in this process. The scenario for semi-structured interviews was composed of six sections: (1) examples of SIE in the city, (2)

² The quality of automatic transcription of Polish interviews was rather low, so for the analysis we relied on the recordings. One of the interviews in English was not recorded due to technical difficulties, so only notes were taken.



the governance of SIE, (3) the change of governance patterns (historical perspective), (4) reasons for change, meaning what, who and how pushed for change, (5) outcomes of change, (6) future challenges and opportunities for SIE (for the topic guide, see Appendix 2). Whenever an interview quote emerges in the text below, it is marked with the city name and interview number (1 or 2).



4 DIVERSITY OF SIE GOVERNANCE

The focus on governance arrangements allowed for a differentiation of the manifestations of the “organising” category into three types of governance modes as steering through hierarchies, markets and networks. Importantly, since “doing”, “thinking”, and “organising” are perceived as tightly interconnected, all SIE types distinguished in the SONNET typology were analysed to identify whether and how its development was facilitated by public administration and, if yes, what type of governance mode was predominantly used.

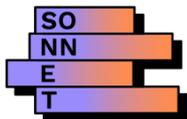
Steering through **hierarchies** happens through command-and-control mechanisms established to effectively pursue organisational or policy goals. It is a steering mode traditionally used by public administration and its bureaucracy. Steering through **markets** focuses on the efficient allocation of scarce resources to competing objectives, which prioritizes profit maximisation. This mode can also be used by the state, for example in order to create a new market, such as the market for CO₂ emissions, or to change market equilibria by the taxation of certain products and services. Steering through **networks** (or self-reflexive governance) is based on flat relationships, the sharing of common resources and negotiations. This type of steering can be performed by the administration e.g. by taking the role of network organiser.

When juxtaposing governance arrangements (steering modes) with SIE following a different type of social interactions, it becomes obvious that some types of governance more naturally fit certain types of social interactions that dominate a given SIE. For instance, it seems natural that SIE dominated by interactions of cooperation are predominantly governed through networks, while those dominated by interactions of competition are steered through market mechanisms. The matrix presented below enables the analysis of how other, less obvious governance approaches can facilitate and support each SIE type.

4.1 Governing cooperation

In SIE typology, the following definition of cooperation is used: “Cooperation is interaction that occurs when people work together to achieve shared goals. While exchange is a trade, cooperation is teamwork. Cooperation is more likely when individuals are faced with a common threat, when it serves their economic self-interest, when they share a sense of communal identity, or when they value belonging to a community” (Brinkerhoff, Ortega, & Weitz, 2008, pp. 98-100).

Interactions that follow cooperative relationships are divided into three types of SIE, based on “doing” (cooperative action), “thinking” (cooperative framing) and “organising” (cooperative organisation). Definitions of each type are presented in the box below.



Cooperative action: The generation, supply and consumption of energy through cooperating actors. Cooperative action involves the cooperation between actors to realise physical changes within the energy system including electricity generation, supply, consumption or storage. Cooperative action links local issues and actions (i.e. increasing energy justice in the local community) to global challenges (i.e. mitigating climate change).

Cooperative framing: The creation of and pushing for a shared framing, narrative or agenda through cooperating actors.

Cooperative organisation: Knowledge dissemination, finance mechanisms and network creation based on a cooperative ethos facilitating 'doing'.

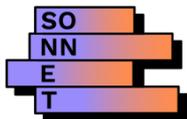
Box 2: SIE types based on cooperation (see deliverable D 1.1.)

Public administration, specifically city administration, reaches to all three governance modes so as to create, enhance and support cooperation-based SIEs.

Hierarchical modes of governing cooperation are used to embed SIE networks in existing energy management and to change energy management patterns from the inside. Politicians – elected and appointed public officials – introduce policies that *open a space for the creation of bottom-up processes of collaboration*. Energy communities, ecovillages and energy cooperatives that function as networks would not exist without regulations making it possible to produce and sell energy. The examples of SIEs enabled by such political decisions are the Aardehuizen in Olst Ecovillage in the Netherlands (see deliverable D 1.1) and the Bristol Energy Network in the UK (Bristol, interview 1 and 2). There are policies and policy documents that *provide a justification for the city to enter national and international networks*, being one of the major spaces for SIE knowledge creation and dissemination. An example is provided by the city of Grenoble, which prioritizes international cooperation in the sustainability area (Grenoble, interview 1). City administration *directly creates* local SIE networks/communities through the establishment of participatory projects like energy neighbourhoods, in which citizens engage in community building and experimentation and knowledge creation in the area of energy efficiency (Basel, interview 1).

Market mechanisms for governing cooperation are used as well to support SIE collaborations. Their possible outcome is moving collaborative SIEs towards competition-based SIEs. Bristol, Mannheim and Grenoble authorities are *facilitating market entry of energy communities through financing schemes*: buying shares, providing seed money, mentoring, designing favourable procurement frameworks. Seed money from the city enabled the Bristol Energy Network to become a community interest company. These instances illustrate hybrid solutions in which a community group is a case of both a cooperating and competitive SIE. In this case, the hybridity lies at the centre of social innovation, which is about “generating and sharing profit and engaging people for a common goal” (Bristol, interview 1). The hybridity of SIE provides an interesting insight into the further development of the SIE typology developed in deliverable D1.1.

Governing cooperation through networks assumes several forms depending on whether city administration is the network’s initiator and participant or not. Public administration *can create and become an active member of SIE-related cooperation*, like the municipality of Zielawy (Poland) that created a network which aims at producing renewable energy (see deliverable D1.1.) or like the member of a city association established to promote sustainable development (Eco



Cities, ICLEI, etc.). Administration can create networks that provide knowledge and know-how for external actors on an open-access basis. These can be exemplified by co-creation or information hubs, e.g. the Eco House in Antwerp. In this case, public administration takes the role of an SIE knowledge broker. Moreover, administration can enhance SIE by infusing existing networks with resources (finances, knowledge) to keep them alive. This is the case of Antwerp and Basel, which finance small-scale local energy-related initiatives (up to 25,000 EUR). SIE governance through networks can also assume the form of building internal network-based governance structures. An important part of SIE governance in Antwerp and Mannheim is the purposive creation of cross-departmental networks of positions and people engaged in sustainability and energy transitions. In Antwerp, this encompasses the creation of formal cross-departmental network-based governance structures within climate action plan 2030 (Antwerp, interview 2 and documents), while in Mannheim these attempts are directed towards building of an informal communication channel (FlurfunkE programme, Mannheim interview 2).

4.2 Governing exchange

The next type of social interactions being part of SONNET's SIE typology is exchange. It is defined as "the voluntary interaction from which all parties expect some reward. The mechanism is along the lines of a trade: I give you a tangible or intangible benefit and you give me one back. Such relationships are based on the norm of reciprocity – if you give something you expect a reward" (Brinkerhoff et al., 2008, pp. 98-100). The box below illustrates the types of SIE enacted through exchange and manifested accordingly through "doing", "thinking" and "organising".

Local electricity exchange: Local exchange of electricity using smart grids and/or blockchain technology.

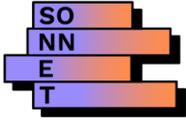
Knowledge exchange: The exchange of knowledge and skills through education, training and instruction.

Organized exchange: The organisation of exchanges of tangible and intangible goods between actors.

Box 3: SIE types based on exchange (see deliverable D 1.1.)

Governing exchange through hierarchies. Many examples of exchange-based SIEs are externally funded projects, within which cities exchange knowledge and skills with project partners and receive money from donors in exchange for knowledge, products and service production. These initiatives themselves are not necessarily governed through hierarchies, but city administration commissions creation of internal governance structures enabling projects applications. In organisational structures of departments for environmental and energy issues positions are created, which responsibilities are almost entirely tightened to grant applications (e.g. Antwerp) or are integrated into professional responsibilities of employees (e.g. Mannheim, Warsaw). Projects become major spaces for experimentation and development of new solutions ranging from internal organisational projects like FlurfunkE, to larger, cross-sectoral projects, involving research institutes and universities developing smart climate mitigation and adaptation strategies (e.g. Smartilians, Mannheim, interview 2).

Governing exchange through markets. Basel experiments with integration of market tools in exchange for knowledge and skills through education, training and instruction. They have developed a network of people who were regularly consulted about participation and communication of environmental and energy issues. They are mostly young activist and opinion leaders (in social media among others). Gradually a small payment scheme was introduced to compensate



their contribution to environmental and energy related activities run by the administration. This solution is small scale, but addressed a bigger challenge indicated by an interviewee:

"We are having sessions to develop something and they [citizens, NGO representatives] always come for free. And we [officials] are getting paid for it. This is not an easy situation. (...) they didn't get anything out of it. Maybe a drink or some snacks, but they just did it for free. They have some kind of intrinsic motivation, whoever knows. But it is not fair" (Basel, interview 2).

In interviews another possibility of governing exchange through markets was indicated (Basel, interview 1), that is *facilitation of platform economy* for smart city.

"It is a bold understanding of smart cities. And I have some kind of platform for my smart city. And on this platform of smart city, I can sell and buy my electricity. I can also ask for other services. I can also bring my other services to this platform (...) there is a huge, huge possibility to create some participation, sharing models which are not yet developed" (Basel, interview 1).

Governing exchange through networks. In the case of public administration, the main arena where exchange of SIE related knowledge, skills, products and services takes place is within *externally funded projects*. In this sense, collaborations governed through networks are evolving into exchanges governed through networks. For city administration *exchanging resources in networks* becomes a strategy for accessing additional resources "*projects and networking with other cities and also universities is a financial issues because as city [we] don't have all the money to invest in new infrastructure [this includes] also personal [infrastructure]*" (Antwerp, interview 2).

4.3 Governing competition

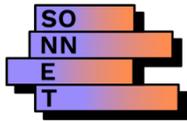
In SONNET's SIE typology, competition is defined as "a struggle over scarce resources that is regulated by shared rules" (Brinkerhoff et al., 2008, pp. 98-100). If the respective goals of actors are mutually exclusive, and in situations of scarcity of resources, competition (or conflict)-based interactions are likely. In case of competition, the struggle will be regulated by shared rules (see deliverable D 1.1).

Business mimicry: the generation and supply of electricity based on a competitive ethos using mimicry. This type of SIE entails optimising current business models through adding innovative elements (rather than questioning the overall approach) to increase competitiveness.

Games: The organisation of competitive encounters through serious gaming. This type of SIE involves playful competitions around topics such as energy usage, often to change behaviour and create learning experiences. In the field of the energy transition, gamification is often discussed in the light of changing behaviour through letting participants engage with games provided by researchers. Alternatively, researchers have used participant games to study heterogeneity, investment risk or participation in members of energy.

Competitive narratives: No empirical substantiation and therefore also description of this type could be done based on the sample of 70 used for this purpose. However, a further classification of the remaining mapped initiatives is to show the extent to which this type is also empirically relevant.

Box 4: SIE types based on competition



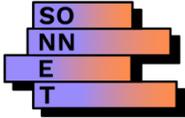
Governing competition through hierarchies. Public administration uses its *regulatory and policy making power to influence market equilibria*. By changing rules of the market game, public administration promote SIEs. A range of regulatory tools mentioned as crucial were located on the national government level, e.g. feed in tariffs (Bristol, interview 1 and 2; Basel, interview 1 and 2), taxation of community energy investments (Bristol, interview 1). Tools located on city administration level encompass designing procurement schemes privileging community-based energy companies and, more generally, SIE initiatives (practiced e.g. in Grenoble and Bristol). In some cases, city administration (after decisions made by city councils) *hand over material resources* like e.g. land and finances to local energy community groups, which enables them to enter the market as companies (again Grenoble and Bristol).

Governing competition through markets. Almost all interviewees mentioned governance tools that enable public administration to steer SIE through direct entry to the market. City administration has full or *partial ownership in companies* providing and distributing electricity and heating, which allows them to directly influence company decisions through the board. Representatives of the City of Grenoble emphasize that having their own energy company³, which is a rather exceptional arrangement in France, gives them a fair amount of independency in shaping and implementing energy policies, e.g. by influencing energy prices. In contrast, the fact that energy companies are usually big, state owned entities without local ownership, is explicitly mentioned as an obstacle in influencing energy transitions (Warsaw, interview 1; Antwerp, interview 2).

Some of the municipalities around Basel *outsource energy provision and management to energy cooperatives*. The City of Warsaw plans to upgrade energy efficiency of public buildings by outsourcing energy management to a private company. The company would use energy management tools that were collaboratively developed with building users e.g. an application for monitoring energy use and proposing multiple scenarios for energy savings. The scenarios include financial calculations and possibilities of financing (Warsaw, interview 2). City administration also *uses its own purchasing power to set sustainable market trends*. Bristol's city administration plans to stimulate overall demand for electric cars by changing its 500 fleet vehicles into electric vehicles (and by limiting the entry to the city centre to electric vehicles only). Stimulation of demand is supposed to increase the supply of innovative sustainable products on the market. A similar mechanism is used in city owned housing that according to Bristol's 2030 climate plan should be zero emission housing. This is how one of the Bristol city administration representatives explains the thinking behind it: "The council owns about 30,000 houses. So we now have a policy to turn all those houses to zero carbon. It is a good contribution and we think if the council starts, then other people will follow" (Bristol, interview 1).

Governing competition through networks. Public administration *use networks to stimulate the economic development* of SIE initiatives. For example Eco House – a knowledge and innovation hub which is part of Antwerp city administration – provides local initiatives with advice about possible financing (Antwerp, interview 1). Networks are also used to *stimulate Ideas and knowledge development through organized competitions*. Games designed in Grenoble, Basel and Mannheim are played within networks. "Energy detectives" in Grenoble, Basel and Mannheim and "Energy challenge" in Basel are played between schools, and "Energy neighbourhoods" in Basel - in teams of households being part of the same neighbourhood. Basel city administration used a locally based international network to organize a climate hackathon, a form of idea crowdsourcing, where teams of innovators worked on solutions for problems "assigned" by public administration.

³ possible due to specific geographical location than enables use of hydro energy



"We worked with an international organisation - Impact Hub Basel. They have a huge network of people being interested in that kind of common effort. They did a lot of social media marketing for this [...]. And of course, we had PR profits out of it. I would say, it's not it's not a direct effect, but the indirect effects that we are also hoping for, is moving some [agendas]... We were giving them an idea where we need solutions. It was about different areas, from mobility, from energy saving questions and food saving. (...) For example, [for us in Basel] it was Important to learn how to get owners of a house with an old heating system together with others?" (Basel interview 2).

4.4 Governing conflict

Conflict is understood as "a struggle over scarce resources that is not regulated by shared rules, it may include attempts to destroy, injure, or neutralise one's rivals" (Brinkerhoff et al., 2008, pp. 98-100). It includes an aspect of "anything goes" and if it is inflicted with outsiders, it can enhance in-group solidarity.

Conflicting practices: No empirical substantiation and therefore also description of this type could be done based on the sample of 70 used for this purpose. However, the type seems empirically relevant since one can think of initiatives which are engaging in action related to the material aspects of the energy system and do so in a way that is characterized by unruly struggle over certain resources. A specific example could be Frack Off, Extreme Energy Action Network (UK) or other activist groups that demolish or tie themselves to infrastructure in protest.

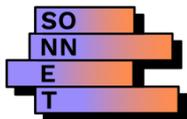
Organized conflict: No empirical substantiation and therefore also description of this type could be done based on the sample of 70 used for this purpose. However, the type seems empirically relevant since one can think of initiatives that engage in setting up governance or organisational structures that are characterised by (driving) conflict. A possible example to be interrogated is Plateforme opérationnelle anti-linky (POAL), a French platform against the deployment of smart meters.

Conflicting frames: The creation of and pushing of a counter-narrative through activism and protest.

Box 5: SIE types based on conflict

Governing conflict through hierarchies. Conflicting narratives, practices and ways of organising around energy can be steered through hierarchical measures like *issuing policy documents and/ or regulations privileging one of the conflicting options*. An example might be the issuing of an internal regulation commanding all city departments to consult the design of participatory processes with experts from a newly established organisational unit (Mannheim, interview 1). Although there was no open conflict between the newly established organisational entity responsible for participatory processes in the city, there was certain reluctance in making use of its expertise. Most of the departments have already developed their own (alternative) practices around participatory processes and did not perceive any added value in cooperation with the new unit. Another possibility, familiar to previous, is the *creation of internal governance structures forcing cooperation of originally conflicting parties*. An illustration can be the new governance structure designed within the "Climate action plan 2030" for the city of Antwerp (Antwerp, interview 2).

"We need to cooperate [in order to reach climate action goals] and we need to create this [new governance structure] (...) still some people that do this and they do it on their islands and they can do whatever they want (...) now we have something like a cabinet structure [for climate action programme] in the local government. So all parties are there; the mayor and the deputy mayors and they are together now in a board of deputies who deal with climate related issues (...) this is not anymore like it was until now - it was hard, we were trying to do what we could, but of course, you cannot change anything if you asked somebody from another department that the boss of this person does not care, then



nothing happens... . So now the boss of this person will be in the board. So he will be directly reporting on climate related topics that are within actions that your department is responsible for" (Antwerp, interview 2).

Governing conflict through markets – no empirical manifestations of that theoretical possibility were found on the level of local government. On the level of central government however, it is possible to use a market-based mode to resolve/manage conflict between incumbents (large energy companies) and challengers (community owned companies) by regulating taxation and feed in tariffs. For example, uplifting of feed-in tariffs and re-introduction of taxation of investments into energy cooperatives in UK pushed the latter out from the market, leaving it almost exclusively to the largest incumbent companies (Bristol, interview 1). This is questionable since this type of action was already categorized as governing competition through hierarchies (political decisions on influencing market equilibria). This contradiction signals the need of further development and refinement of the analysis.

Governing conflict through networks. An example of this type could be climate panels organized in Warsaw (Warsaw 1), where parties representing conflicting narratives, practices and ways of organising in the energy sector (and more broadly) deliberate about possible future scenarios and policies. Another example could be *collaborative work on strategic goals for the city* of Warsaw (Warsaw, interview 1) and Mannheim (Mannheim, interview 2). In both cases, the process of strategy development was a long (2 years in case of Mannheim and 3 years in case of Warsaw⁴) participatory process. When asked about conflicting perspective, a city Mannheim representative answered flowingly:

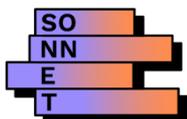
"We've worked together a lot in the last years to have a more integrated approach, especially I mean the work on our mission statement. It was a really interactive also social innovation format [of the process]. That's all to bring together all the ideas from the politicians, from the administration, from the city or from citizens and NGO owners. So it was a really huge process. Over two years was a huge participation of all of the people that brought us a little bit closer together. And they are traditionally as some departments, they are working more together and some where it is a little bit difficult to work together. But they are really active in all departments and it helped to have these relationships, good relationships." (Mannheim, interview 2).

4.5 Summary

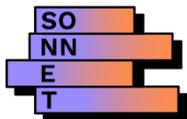
Tabell 1: SIE governance typology

	Cooperation	Exchange	Competition	Conflict
Hierarchies	Opening a space for the creation of bottom-up processes for collaborations through regulations (e.g. enabling local energy consumption and production) Providing a justification for the city to enter national and international networks through issuing of strategic documents	Facilitation of project based, interorganisational exchange of knowledge, skills, resources by building internal organisational structures enabling applications for external funding	Influencing market equilibria through regulations and policy making (feed-in tariffs, taxation of green investment, green procurement)	Issuing policy documents and/ or regulations privileging one of the conflicting parties (used for both internally and externally oriented governance processes)

⁴ In case of Warsaw, however, issues of climate and sustainable energy transitions are not emphasized in the city development strategy.



	Incentivising of community building activities through direct creation of participatory SIE projects		Direct support of SIE through material resources (land, finances)	Building of internal governance structures forcing cooperation of originally conflicting parties
Markets	Provision of financing schemes facilitating market entry of energy communities	Introduction of payment schemes for external actors (citizens, activists, etc.) participating in the development of environmental and energy related activities run by the administration Facilitation of platform economy for smart city	Acquisition of full or partial ownership in companies providing and distributing electricity and heating Outsourcing of energy provision and management to energy cooperatives Using own purchasing power to stimulate demand for and supply of sustainable products and services (setting sustainable market trends)	Introduction or uplifting of regulations influencing market equilibria and privileging one of the conflicting parties
Networks	Establishment of SIE related cooperation, where administration is directly engaged in innovation process (interorganisational cooperation). Building networks providing knowledge & know-how on an open access base for external actors (organising cooperation for external actors) building internal, network-based governance structures (organising cooperation internally)	Exchange of resources (SIE related knowledge, skills, products and services) in networks and through externally funded projects.	Utilising networks to stimulate the economic development of SIE initiatives (through establishment of knowledge and innovation hubs) Stimulation of ideas and knowledge development through organized competition played out in teams and networks (hackathons, energy challenges etc.).	(Selective) aligning of perspectives through collaborative work on: - strategic goals for the city (city mission, city development strategy) - citizens panels (e.g. climate panel)



5 PROCESS PERSPECTIVE: THE EVOLUTION OF SIE GOVERNANCE

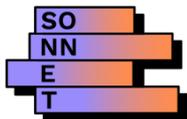
The iterative process of comparison between data and theoretical considerations from the literature on social innovation, sustainable transition and institutional perspective resulted in the development of propositions that facilitate the understanding of how novel SIE governance evolves over time and, in particular, what factors impede and facilitate this evolution. These factors provide the initial scaffolding that can be further investigated by SONNET researchers (especially those who work with case studies in WP3 and the remaining tasks of socio-political WP2). As section 2 (conceptualisation) already signalled, the analysis moves from zooming in to zooming out. Firstly, the significance of environmental pressures for SIE-related governance is explored. At the beginning of the analytical process, different types of environmental pressures were coded according to the following theoretical categories: **mimetic, coercive and normative**. In the process of analysis, these codes were changed to substantial codes, that is codes related to types of **shifts in discourses** about energy and sustainability. Types of shifts in discourses emerged from the data as relevant to how SIE and energy transitions in general are governed in cities investigated by the SONNET project. These shifts are observed in institutional environments of all the cities and encompass:

- 1) a shift from technocracy to participation (focus on technology vs. focus on socio-economic issues, along with the change of role perceptions),
- 2) a shift from centralisation to decentralisation (understood as subsidiarity – which emphasises the role of the nation state vs. the roles of cities, regions, and communities – and as the decentralisation of energy system that becomes constituted of smaller power plants, more dispersed in location),
- 3) a shift from silos to cross-departmental and cross-sectoral organising (a targeted, selective approach vs. an integrated, systemic approach)
- 4) a shift from climate change to climate emergency (climate issues perceived as a slow process with consequences to be experienced in a distant future vs. climate issues perceived as requiring immediate action).

From focus on the institutional environment of city administration, the analysis zooms into the institutionalisation process that happens in the interface of city administration and its environment and within organisational structures of city administration itself. Here, the empirical material was coded along with closed (*a priori* adopted) codes: institutional work, institutional entrepreneurship, leadership (for definitions see section on conceptualisation).

Elements of time series analysis were used to identify sequences of actions that could be turned into a historical narrative of the institutionalisation process. The summarising text below shows how institutionally embedded individuals experience the shift in discourses while governing sustainable energy transitions, and how they use these shifts as an opportunity for establishing new institutions or transforming and disrupting original institutions (and governance structures) to more effectively pursue sustainable energy transitions. Based on the analysis – presented in greater detail in the next section – the following propositions are suggested:

Proposition 1: *The introduction of novel government arrangements in SIE (and hence, the development of SIE) is facilitated through **institutional isomorphism**; in particular, through **mimetic pressure** (peer pressure among professional city and regional networks; e.g. cities implement certain solutions and arrangements because other cities have done so).*



Proposition 2: Novel governance arrangements that support SIEs depend on the existence of **institutional structures** (like policies and strategies) that operationalise sustainability goals and on the individual engagement of **institutional entrepreneurs** (like public officials who promote sustainable energy transitions). These two pressures reinforce each other: the bottom-up pressure from institutional entrepreneurs and the top-down pressure from institutional structures.

Proposition 3: The extent to which institutional entrepreneurs – who introduce novel governance arrangements that facilitate social innovation in energy – can introduce changes by embedding novel solutions in existing structures depends on the support of **political leadership and top management** in city administration.

Proposition 4: The introduction of novel governance arrangements – in particular multi-actor partnerships – is facilitated by the **scarcity of financial resources** in state, regional, and local budgets. Multi-actor partnerships increase the chances to obtain financial resources from external sources (e.g. the EU). This is why the framing of international, private, and similar financing schemes significantly influences SIE and, more broadly, sustainability-related change on national, regional and local levels.

5.1 Shifts in public discourse about energy and climate

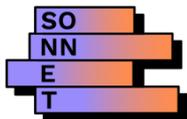
In recent years, significant shifts in discourses about energy and climate occurred. Based on the analysis of empirical data, we distinguish four of such discourses as especially important for the evolution of SIE governance. Each of these shifts creates legitimacy for novel governance arrangements e.g. cross-departmental, cross-sectoral, multi-actor and participatory arrangements.

5.1.1 Shift from technocracy to participation

“So it was in the beginning of 2015 that ... we needed to do more on innovative projects in these topics of innovation and energy, because there was already the idea that cities will play a bigger role in climate in general” (Antwerp, interview 2).

The shift from technocracy towards participation implies an integrated holistic approach to sustainability. Such a shift results from a disappointment with the slow adoption of new technologies and the growing criticism of neglecting the social and cultural context of technology and energy. It can be illustrated by the growing recognisability of concepts like climate justice and energy poverty, which become mixed, and so people jointly consider “social issues with environmental issues” (Grenoble, interview 1), “yellow vests and green vests” (Antwerp, interview 2).

Furthermore, this shift encompasses changing perceptions of the role of public administration and the professional identities of public officials: “In earlier days, it was harder to get to people in administration. Now, there is this idea of service, that the administration is for the citizens and not like an object separate from them. Many, many other cities do that as well. They write a kind of “Bible,” a handbook with quality standards for participation. ... We have some duty to fulfil and when people have a question, they can call us. You have all telephone numbers. You always have an E-mail address you can write to” (Mannheim, interview 1). “Administration should follow people” (Basel, interview 1), “I would say these are expectations and political expectations and also ambitions of the personal level” (Antwerp, interview 2).



In this sense, public officials see the support of small-scale grassroots projects as public administrations' mission to empower people in making changes in their own environments.

5.1.2 Shift from silos to cross-departmental and cross-sectoral organising

“There is a Climate Change Strategy Office in the city of Mannheim. They are responsible for the strategic goal to be a climate neutral and climate resilient city and to steer this process across departmental function[s]. ... To have a good participation culture in the city we also need to have participatory culture within the administration departments and also with the people on the street and in the districts reaching out to districts, where we cooperate with quarter managers” (Mannheim, interview 1).

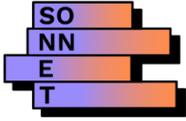
In each of the interviews, the issue of cross-departmental cooperation in complex problems was described as a huge challenge: “It is a problem. Sometimes you do not even know what people are doing [in] another section of your own department. Not [to] mention about other departments! It is not infrequent that we learn about some projects, even relevant for us, from the newspapers! We could have more of this cross-departmental activities. When I was working in [the] private sector, we had this cross departmental meetings regularly. But it did not work either to be honest. There was information overload, and it consumed huge amounts of time” (Warsaw, interview 2).

Each of the cities used different strategies to enact cross-departmental and cross-sectoral organising and each case emphasised this approach as continued effort (see the subsection on Proposition 1). A common pattern seems to emerge: officials themselves admit that – over time – more significant progress was being made through developing collaborations with external actors (non-governmental organisations, communities, citizens, businesses) than through intraorganisational collaborations. Nonetheless, various projects open an important space for experimenting in this regard, including research projects.

5.1.4 Shift from climate change to climate emergency

“You need to refer to these sustainability goals to be correct. So I think this sustainable development helped us also for the acceptance of climate goals ... we need to act, climate change makes no break” (Mannheim, interview 2).

Sustainable energy transitions and – more broadly – sustainability become a relatively uncontested topic. As the above quotation suggests, sustainability claims gained a legitimising power. In the narratives presented by the interviewees, this shift occurs through activities of large social movements that elevated green political parties to significant players in the political arena and ensured the visibility of environmental and sustainability issues on the international, national, and regional levels: “We had all these movements about the Green Party.... All these movements about environmental protection, environmental organisations... they are getting stronger [recently]” (Basel, interview 1). The same shift is



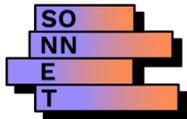
also pushed further through bottom-up, grassroots initiatives and growing local expectations: “We see citizen’s environmental demands [saying] “go faster, do more” (Grenoble, interview 1). Officials engage with these initiatives and facilitate their development (see section about governing collaborations and section on Proposition 3 below). Importantly, the lack of contestation of sustainability goals does not equal active support for sustainable transitions. Still, according to the interviewed city representatives, the active support of political and administrative leadership is crucial, especially on the city level, but also on the national and international levels (see section on Proposition 3).

5.2 Institutionalisation: Isomorphism, institutional work, and leadership

The analysis of interviews indicates that the major institutional pressure on the implementation of SIE-related governance comes from **other cities** (mimetic pressures) and from **professional environments**, in other words, with the intake of employees educated within the new paradigm of public administration (fresh university graduates) and socialised in different institutional logics (former private and non-governmental sector employees). Careers of our interviewees highlight this trend. Eight out of the 12 interviewees have many years of experience from the private sector and two from the non-governmental sector. City administrations **learn from each other**, they copy solutions observed elsewhere and produce strategies and programmes initiated within networks and associations. In our 12 interviews, more than a dozen of regional, national, European, and global networks were explicitly named on different occasions. Networks enable communication and knowledge exchange, but also joint experimentation and the production of new ways for doing, thinking, and organising. Typically, these networks also include academic experts and representatives of the private and non-governmental sectors who occasionally join common projects financed by external agencies. Therefore, our first proposition is:

Proposition 1: The introduction of novel government arrangements in SIE (hence the development of SIE) is facilitated through **institutional isomorphism** and, in particular, through **mimetic pressure** (peer pressure among professional city and regional networks; e.g. cities implement solutions because other cities have done so).

The existence of isomorphic pressures creates opportunities for **institutional intrapreneurs** (entrepreneurs and innovators active within organisational structures (Battilana et al., 2009; Wenhong et al., 2019), who bring the new ideas to public agencies and lobby for their implementation forward. One of their major activities is **institution building** that is the creation of new patterns of thinking and acting, like participatory practices, cross-departmental communication channels, climate action programmes, etc. A large part of their work is **relational** – about making and maintaining informal connections – and **value-based**, in which their engagement and intrinsic motivation stems from concerns about what is the right thing to do in the face of climate crisis, social inequality, etc. Typically, institutional intrapreneurs claim some areas and activities without being asked to do so. For instance, the city of Bristol representative mentions that, “I saw community energy as a huge opportunity, assisting them was not part of my job responsibilities, but I have done it anyway” (Bristol, interview 1). The city of Mannheim representative initiated a social media action #climatechangemakesnobreak by posting a picture with the hashtag on social media, which encouraged everyone engaged in climate issues to continue full-time work during the COVID-19 pandemic. At the same time, the work of institutional intrapreneurs rapidly gains on effectiveness with the institutionalisation of SIE governance progresses. **Institutionalisation** processes involve both (1) the energy and sustainable transitions becoming part of **widely acknowledged development targets** and (2) the existence of **structures** (programmes, policies, organisational positions



and procedures) that formalise and operationalise those aspirations. The most illustrative example is the need of reporting progress towards the realisation of specific energy targets. The Bristol administration employee mentions that, “now when I come with some projects to other departments, they ask me how much it will cost and how much CO² it will save” (Bristol, interview 1). The above processes inform our second proposition:

Proposition 2: Novel governance arrangements that support SIE depend on the **existence of institutional structures** (like policies and strategies) that operationalise sustainability goals and on individual engagement of **institutional entrepreneurs** (here e.g. public officials promoting sustainable energy transitions).

The institutionalisation process of SIE-related governance is extremely challenging without the support of **political and top management leadership**. This group conveys city-level leadership, but it also refers to higher levels of government and administration (see the section on shift from centralisation to decentralisation). When talking about major actors of change and about milestones of the process, the interviewees mention **personally committed leaders** or, in the case of milestones, their appointment. No one mentioned a story of a “converted leader” but only examples of leaders who were and are indifferent, which means that they will not actively impede but also not support energy and sustainability related initiatives:

“We had a deputy mayor who had no idea about energy. Actually, she was a very nice person So she was completely not into the topic and actually her cabinet wasn’t either ... so we could do what we want, but we were also not pushed to go further. [We] did not have extra means to go further. I mean... **it’s difficult to separate** [the reasons] because, of course, the climate is getting on the agenda more and more and also energy is getting on the agenda more and more, but still... But then we have now a new deputy mayor for energy ... [who] knows exactly what is needed” (Antwerp, interview 2).

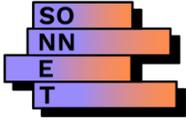
As mentioned above, the different factors that promote SIE and collaborative, participatory governance arrangements for SIE are difficult to separate, also in the case of “committed leaders.” Since issues of sustainability became the source of legitimacy, many leaders have made them into “their topic” in order to reach out for more political support. One of the interviewees reflects on the process and concludes:

“Hmm. It’s kind of a fashion, I’d say. Our top mayor is the top mayor for many years now. And it’s kind of also his will. It’s his hot topic. He wants to improve the participatory processes. If you have a top mayor who is not interested in that topic, you can almost forget it. And sometimes you have like only one person working on that topic and not such a big team as we have here. Yeah, it’s a little bit [of a] fashion. It’s a little bit [about] that many cities have that. And it’s also, yeah, like the democratic idea. We want to involve the citizens.” (Mannheim, interview 1)

The interconnection and mutual reinforcement of top-down and bottom-up processes is expressed in our third proposition:

Proposition 3: The extent to which **institutional entrepreneurs** (those who introduce novel governance arrangements by facilitating social innovation in energy) can introduce changes (embed novel solutions in existing structures) depends on the support of **political leadership and top management** in city administration.

Help comes from quite an unexpected direction, especially in the case of indifferent leaders. What pushes the change forward is often the scarcity of financial resources on the city level and the need to apply for external funding. This usually means reaching to European Commission programmes that often reflect the abovementioned discourse shifts, that is participation, decentralisation, cross-sectoral cooperation, and sustainability. In this sense, these programmes (and European policies) exert significant pressure, among other things, on the adoption of SIE-related governance. The influence of externally funded projects was mentioned by the representatives of all cities. The city of Bristol started to develop renewable energy initiatives with a project financed by the European Investment Bank. The project delivered

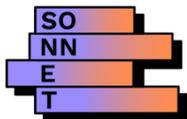


the opportunity not only to experiment but also to develop knowledge within the organisation, as the interviewee mentions:

“[The] grant from the European Investment Bank really opened up a lot of new opportunities. [The person who got the grant] decided that Bristol should employ specialists in clean energy to accelerate these programs. And this was actually quite an alternative [approach]. A lot of councils at [the] time [were] spending money [on] consultants. And the expertise was going outside the council and seemed like her idea was that, no, the council needs to employ directly, they need to take some risks. They need to directly employ specialists that can keep the knowledge inside the council (Bristol, interview 1).

The only interviews in which the role of externally funded projects was not emphasised were those from Basel. Although the selection of cities is biased towards cities active in international cooperation and project development, we suggest the following preliminary proposition:

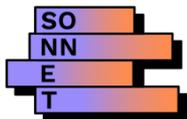
Proposition 4: The introduction of novel governance arrangements (in particular multi-actor partnerships) is facilitated by the **scarcity of financial resources** in state, regional, and local budgets. Multi-actor partnerships increase the possibility to obtain financial resources from external sources (e.g. the EU). This is why the framing of international or private financing schemes significantly influences SIE and, more broadly, sustainability-related change on national, regional, and local levels.



6 CONCLUDING THOUGHTS

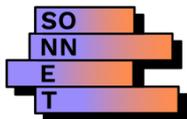
This report assumed a diversity- and process-oriented approach to develop an understanding of SIE governance. Within the first approach, we built the SIE governance typology to illustrate the diversity of governance arrangements. Within the second, process-oriented approach, we developed four propositions to facilitate the understanding of SIE governance emergence and institutionalisation. The SIE typology surfaces from a matrix constructed alongside two variables: (a) social interactions (cooperation, exchange, competition, conflict), and (b) governance modes (hierarchical, market-based and network-based). Propositions were constructed in the iterative process of empirical data and theory comparison. They describe the significance of (1) mimetic isomorphic pressures that work through peer pressure among professional city and regional networks, (2) the existence of institutional infrastructure that supports and operationalises SIE agendas, (3) the role of institutional entrepreneurs (intrapreneurs) who work from bottom-up to support and develop of SIEs along with political and top management leaders of city administration who work from top-down for the same goal, (4) the role of external resources for shaping sustainability and SIE agendas in city administrations.

Both above frameworks have a preliminary character and will be further developed and refined in ongoing research within different tasks and work packages of the SONNET project. In particular, some types of SIE governance are hardly distinguishable. What requires further investigation are transitions between the SIE types and their mutual connections, along with their supplementary nature. In the case of the process-oriented analysis, further scrutiny of institutional work performed by SIE actors has the potential to distinguish specific types of institutional work dynamics that connect them. In the context of empirical and analytical work prepared in SONNET's socio-political work package, it would be worthwhile to more clearly elaborate the connections between SIE governance and networks (task 2.2), power (task 2.3), and policy mixes (task 2.4). Nevertheless, all three are visible in the deliverable presented in this report and will hopefully be of use for researchers who explore different related SIE phenomena.

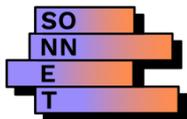


References

- Alvesson, Mats; Hallett, Tim; Spicer, Andre (2019): Uninhibited Institutionalisms. In *Journal of Management Inquiry* 28 (2), pp. 119–127. DOI: 10.1177/1056492618822777
- Ansell, C. (2011). *Pragmatist Democracy. Evolutionary Learning as Public Philosophy*. Oxford: Oxford University Press.
- Ansell, C., & Gash, A. (2008). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, 18(4), 543-571. doi:10.1093/jopart/mum032
- Avelino, F., Wittmayer, J. M., Pel, B., Weaver, P., Dumitru, A., Haxeltine, A., . . . Ruijsink, S. (2019). Transformative social innovation and (dis) empowerment. *Technological Forecasting and Social Change*, 145, 195-206.
- Battilana, J., Leca, B., & Boxenbaum, E. (2009). How Actors Change Institutions: Towards a Theory of Institutional Entrepreneurship. *The Academy of Management Annals*, 3(1), 64-107.
- Bevir, M. (2011). Governance as Theory, Practice and Dilemma. In M. Bevir (Ed.), *The Sage Handbook of Governance* (pp. 1-16): London.
- Brinkerhoff, D. B., Ortega, S. T., & Weitz, R. (2008). *Essentials of sociology*: Cengage Learning.
- Cartel, M., Boxenbaum, E., & Aggeri, F. (2019). Just for fun! How experimental spaces stimulate innovation in institutionalized fields. *Organization Studies*, 40(1), 65-92. doi:10.1177/0170840617736937
- Coleman, J. (1990). *Foundations of Social Theory*. Cambridge: Harvard University Press.
- DiMaggio, P., & Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160.
- Fligstein, N., & McAdam, D. (2012). *A Theory of Fields*. Oxford: Oxford University Press.
- Gilardi, F., & Radaelli, C. M. (2012). Governance and learning. In *The Oxford Handbook of Governance*: Oxford University Press.
- Gustafson, P., & Hertting, N. (2017). Understanding participatory governance: An analysis of participants' motives for participation. *The American Review of Public Administration*, 47(5), 538-549.
- Hargrave, T., & Van de Ven, A. (2006). A Collective Action Model of Institutional Innovation. *Academy of management review*, 31(6), 864-888.
- Hartley, J., Sørensen, E., & Torfing, J. (2013). Collaborative innovation: A viable alternative to market competition and organizational entrepreneurship. *Public administration review*, 73(6), 821-830.
- Haxeltine, A., Pel, B., Dumitru, A., Avelino, F., Kemp, R., Bauler, T., Kunze, I., Dorland, J., Wittmayer, J., Jørgensen, M. S. (2017). Towards a TSI theory: a relational framework and 12 propositions. *TRANSIT working paper*, 16, 2-1.
- Jessop, B. (2011). Metagovernance. In *The Sage Handbook of Governance* (pp. 106-123). London: Sage Publ.
- Kordasiewicz, A., & Sadura, P. (2017). Clash of public administration paradigms in delegation of education and elderly care services in a post-socialist state (Poland). *Public Management Review*, 19(6), 785-801. doi:10.1080/14719037.2016.1210903



- Lawrence, T. B., & Suddaby, R. (2006). Institutions and Institutional Work. In S. R. Clegg, C. Hardy, T. B. Lawrence, & W. Nord (Eds.), *The Sage Handbook of Organization Studies* (pp. 215-254). London: Sage Publ.
- Lawrence, T. B., Suddaby, R., & Leca, B. (2009). Introduction: Theorizing and studying institutional work. In T. B. Lawrence, R. Suddaby, & B. Leca (Eds.), *Institutional Work: Actors and Agency in Institutional Studies of Organizations* (pp. 1-27). Cambridge: Cambridge University Press.
- Lynn, L. E., Heinrich, C., & Hill, C. (2001). *Improving Governance. A New Logic for Empirical Research*. Washington D.C.: Georgetown University Press.
- McLaverly, P. (2011). Participation. In *The Sage Handbook of Governance* (pp. 402-418). London: Sage.
- Pierre, J., & Peters, B. G. (2000). *Governance, Politics and the State*. New York: Macmillan.
- Strumińska-Kutra, M. (2018). *Democratizing Public management. Towards Practice-Based Theory*. New York: Palgrave Macmillan.
- Surachikulwattana, P., & Philipps, N. (2017). Institutions as process. In A. Langley & H. Tsoukas (Eds.), *The Sage Handbook of Process Organization Studies*. London: Sage.
- Sørensen, E., Hendriks, C. M., Hertting, N., & Edelenbos, J. (2020). Political boundary spanning: politicians at the interface between collaborative governance and representative democracy. *Policy and Society*, 1-40. doi:10.1080/14494035.2020.1743526
- Sørensen, E., & Torfing, J. (2015). Enhancing Public Innovation through Collaboration, Leadership and New Public Governance. In A. Nicholls, J. Simon, & M. Gabriel (Eds.), *New Frontiers in Social Innovation Research* (pp. 220-256). New York: Palgrave Macmillan.
- Sørensen, E., & Torfing, J. (2018). Governance on a bumpy road from enfant terrible to mature paradigm. *Critical Policy Studies*, 12(3), 350-359. doi:10.1080/19460171.2018.1437461
- Tolbert, P., & Zucker, L. (1996). The Institutionalization of Institutional Theory. In S. R. Clegg, C. Hardy, & W. Nord (Eds.), *Handbook of organization studies*. London: Sage.
- Torfing, J., Peters, B. G., Pierre, J., & Sørensen, E. (2012). *Interactive Governance*. Oxford: Oxford University Press.
- Wenhong, Z., Chen, S., Zhao, Y., & Dang, B. (2019). Institutional Intrapreneurship Inside Organizations: Outside-In or Bottom-up? Paper presented at the Academy of Management Proceedings.
- Zietsma, C., & Lawrence, T. B. (2010). Institutional Work in the Transformation of an Organizational Field: The Interplay of Boundary Work and Practice Work. *Administrative Science Quarterly*, 55(2), 189-221.



Appendix 1: EC summary requirements

Changes with respect to the DoA

The deliverable deadline was extended due to COVID-19 - original deadline: 31 September 2020, new deadline: 30 November 2020. There are no changes in scope of the deliverable. As a result of the literature review and the SIE typology developed in Deliverable D1.1. the contents of this deliverable were extended to capture novel governance arrangements (instead of barely focusing on collaborative governance arrangements).

Dissemination and uptake

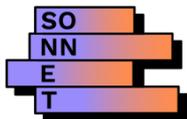
This deliverable is an important reference point for the empirical work conducted by all tasks within the socio-political work package (WP2) and to a certain extent for empirical work within case studies of SIE fields (WP3). The SIE typology and propositions will be further developed and submitted for publication in a peer-reviewed journal, and they will also be used in SONNET's dissemination activities, e.g. in webinars. This will be discussed with SONNET's city partners.

Short summary of results (<250 words)

In reference to SONNET objectives, the goal of this report addresses the research questions: What are governance arrangements related to SIE and how (under what conditions) do they evolve over time (O2)? How can (novel) governance arrangements encourage the development of SIE (O5)? These questions are investigated based on new institutionalism and its reception in social innovation and sustainability transitions literature. Based on the previous SONNET conceptual and empirical work, interviews, reflection circles and documentary analysis, a SIE governance typology was developed. In particular, the research reported here focused on the emergence and institutionalisation of SIE-related governance performed by public administration. The report presents the SIE governance typology that illustrates the diversity of governance arrangements and four propositions on SIE governance emergence and institutionalisation. The SIE typology emerges from a matrix constructed on two variables: (a) social interactions (cooperation, exchange, competition, conflict), and (b) governance modes (hierarchical, market-based and network-based). Propositions were constructed in an iterative process of empirical data and theory comparison. The propositions describe the significance of (1) mimetic isomorphic pressures that work through peer pressure among professional city and regional networks, (2) the existence of institutional infrastructure that supports and operationalises SIE agendas, (3) the role of institutional entrepreneurs (intrapreneurs) who work from bottom-up to support and develop SIEs, along with political and top management leaders of city administration who work from top-down for the same goal, and 4) the role of external resources in the shaping of sustainability and SIE agendas in city administrations.

Evidence of accomplishment

Interview records, transcripts and consent templates signed by interviewees are stored in a password-protected folder in a SONNET-owned cloud with limited access to the WP2 team on Fraunhofer server and on a password-protected OneDrive folder on a Kozminski University server. All documents sent by the interviewees or gathered independently by researchers are stored in the password-protected OneDrive folder on the Kozminski University server.



Appendix 2: Interview topic guide

In-depth interview for WP2, Task 2.1 (novel governance arrangements)

Interviewees: In 2.1. we are interested in talking with those who create conditions for SIE functioning, in other words with public administration representatives who perform public and collaborative governance.

Criteria for selection: **leadership position** (a person in position to influence city policies and organisational operations), a person engaged or overseeing **collaborative processes** (inclusion of external actors into decision-making processes), **many years of experience** in public administration, responsible for issues in the **field of energy and the broader field of sustainability**.

There are two interviews per city. It might be useful to diversify sampling in line with the criteria above, e.g. choose one person with many years of experience in public administration and one person relatively new to the sector.

Research question from D1.2 [for the interviewer only]:

How can (novel) governance arrangements encourage the development of SIE?

Plus, a sub-question:

What kind of institutional and organisational infrastructure is needed to enact governance and learning for SIE?

Invitation letter:

Information sheet is distributed with an invitation for the interview. Moreover, the information sheet is supplemented in this email by information related to Task 2.1. Part of the SONNET research focuses on the role that local governments play in the development of energy-related social innovation processes. We imagine that these roles can be very diverse, ranging from occasional support of existing self-governing initiatives to initiating and coordinating social innovation processes. In the interview, I would like to ask you about **examples of social innovation in energy** (SIE) from your city and learn about how SIE is approached by the city administration.

1. Introduction

1.1 Can you tell me a little bit about your background?

1.2 What is your connection to *SIE*?

- specifying connection with *SIE/field*
- specifying role(s) of the person in relation to SIE
- specifying responsibilities

2. SIE in your city

2.2. Can you tell us a little bit about one or two examples of social innovation in energy (SIE) that was introduced in your city (and which you know well)?

- What are the general trends in SIE?

3. Governance of SIE in your city

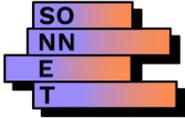
3.1. How are the SIE you have mentioned governed? (Who is involved? How were they initiated? What were the related decision-making processes?)

3.2. What was the role the city played in the development of these social innovation initiatives? (And which city actors specifically?)

- What were the enabling and impeding factors (and actors) in social innovation initiatives development?



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837498.



3.3. Generally speaking (not only in relation to the examples mentioned), with whom does the city administration collaborate in terms of SIE?

- What are the roles of different partners?
 - ✦ Which collaboration works well? Which one is challenging? Typology: conflict, competition, exchange, and cooperation.

3.4. What policy fields are impacting the development of SIE initiatives and how?

4. Governance change

4.1. How is this collaboration different from similar activities a few years ago? What are the most significant changes?

- What has changed **in public administration itself**? (expectations/attitudes, processes/procedures, new roles/positions; in other words, new ways of organizing, thinking, and acting)
- How has **the role of city administration** in energy transitions changed?
- What has changed **outside of public administration**? (expectations/attitudes, processes/procedures, new roles/positions; in other words, new ways of organizing, thinking, and acting)

5. Reasons for change

5.1. According to your opinion, what are the major reasons for the change in how your city approaches the issues of and social innovation in the energy sector?

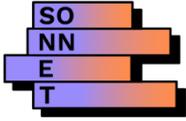
- **Who** has influenced the change?
 - ✦ Are you able to identify **regional/national/European policies** that influenced this change (of the city's role in energy transition)?
- How was the change pushed forward: what was done by whom? What has been argued? What were the goals that different people/groups pursued?
- Is your city involved in policymaking for SIE on higher governance levels (regional, national, EU)? If yes, then how?
- What were the major discussions about the change (maybe there were controversies)?

6. Outcomes/impacts of new approaches (governance arrangements), the influence of institutional environment on developments of SIE/initiatives/field over time

6.1. In your opinion, what are the main results of these changes (in how your city approaches SIE)?

- In terms of how SIE-related policies are created and implemented;
- In terms of how energy issues are managed/approached by the city and in terms of organisational means and tools used;
- In terms of power relations: who has more influence on decisions and practice; who is included and who is excluded, who wins and who loses?
- In terms of networks: have these changes initiated new collaborations/networks (and how)?
- In individual terms: how do the changes influence how officials approach issues of energy? How they approach the issue of collaboration? What knowledge and skills are needed? Which of them are considered less relevant?





7. What are future challenges and opportunities for SIE in your city?

7.1 If you were to draw lessons from your city's experiences with governing social innovation in energy, what would these be?

- Moreover, how do you think your city's experience compares to those of other cities in your country and in other European countries?

7.2 If you look at experiences in your city and elsewhere: how would you assess the potential of social innovation in energy in your city and elsewhere?

7.3 If you look at experiences in your city and elsewhere: what constitutes the most important challenges for social innovation in energy?

8. Open reflections

8.1 Do you have any other thoughts on the topic of our interview?

8.2 Who would you recommend to interview so as to better understand the SIE policy networks in your city?

Thank you very much!

