



# SPARCS

## D7.3 Governance Models for Sustainable Smart City Business Ecosystems

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Description of the related task and the deliverable. Extract from DoA	<p><b>T7.3 Governance model for smart city business ecosystem (CiviESCO) - M12 - M30</b></p> <p>T7.3 will co-design the baseline version of the governance model aiming to create the 2050 Smart City Vision, implemented in T1.5 as part of the new economic paradigm. This will be achieved through an open process of engagement according to the principles of the Quadruple Helix (QH) methodology, applied at municipal level. In this way, it will be ensured the commitment of the whole knowledge society and economy toward a socio-ecological transition. To ensure a successful implementation of the Smart City Roadmap developed in T7.2, together with the SPARCS Start-up competition in the LCs (and FCs), viable business models and alternative financing strategies will be defined under a complete governance model, background of Innovative Smart City Business Ecosystem. The Governance Model proposed will ensure a dynamic and evolving Smart City vision and scenario according to the forthcoming mega trends but also evidence based. This methodological approach will ensure that informed decisions on urban, technical, financial, social and legal aspects can be made, bringing together: GOV (politicians, city administrations), IND (large industry players, local businesses, along with financing institutions and insurance companies), CIV (citizen associations), UNI (research centres and academia) and ENV (natural capital) as quintuple additional helix. Furthermore, the Governance Model will analyse the fundamental standards in terms of stakeholders' acceptance and business model innovation. The model will profile an agreement structure for new business models, leveraging the impact on each involved cities' needs and boosting the replication effect. The overall aim of the SPARCS governance model is to reinforce local innovation capacity by creating strong partnerships (and win-win situations for all involved stakeholders) on urban innovation and delivering innovative business models generating new revenue streams for local authorities and citizens. Finally, the task produces the D7.3, a structured management tool, properly modelling the smart city process by addressing the political, technological and economic value of it, with a ready-to use social architecture and supported by a risk assessment tool. This deliverable will be also transformed in a MOOC instrument, addressed to all the local actors involved in the Smart City legacy' interventions.</p>		
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		Cassisi, Massimo Bolzicco, Martina Di Gallo	and to the Executive Board, Sharing items with partners
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## About SPARCS

Sustainable energy Positive & zero cARbon CommunitieS demonstrates and validates technically and socioeconomically viable and replicable, innovative solutions for rolling out smart, integrated positive energy systems for the transition to a citizen centred zero carbon & resource efficient economy. SPARCS facilitates the participation of buildings to the energy market enabling new services and a virtual power plant concept, creating VirtualPositiveEnergy communities as energy democratic playground (positive energy districts can exchange energy with energy entities located outside the district). Seven cities will demonstrate 100+ actions turning buildings, blocks, and districts into energy prosumers. Impacts span economic growth, improved quality of life, and environmental benefits towards the EC policy framework for climate and energy, the SET plan and UN Sustainable Development goals. SPARCS co-creation brings together citizens, companies, research organizations, city planning and decision making entities, transforming cities to carbon-free inclusive communities. Lighthouse cities Espoo (FI) and Leipzig (DE) implement large demonstrations. Fellow cities Reykjavik (IS), Maia (PT), Lviv (UA), Kifissia (EL) and Kladno (CZ) prepare replication with hands-on feasibility studies. SPARCS identifies bankable actions to accelerate market uptake, pioneers innovative, exploitable governance and business models boosting the transformation processes, joint procurement procedures and citizen engaging mechanisms in an overarching city planning instrument toward the bold City Vision 2050. SPARCS engages 30 partners from 8 EU Member States (FI, DE, PT, CY, EL, BE, CZ, IT) and 2 non-EU countries (UA, IS), representing key stakeholders within the value chain of urban challenges and smart, sustainable cities bringing together three distinct but also overlapping knowledge areas: (i) City Energy Systems, (ii) ICT and Interoperability, (iii) Business Innovation and Market Knowledge.

## Partners



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## EXECUTIVE SUMMARY AND DISCLOSURE

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SPARCS (Sustainable energy Positive & zero cARbon CommunitieS) is a multipartners project funded by the European Union's Horizon 2020 research and innovation program. It supports European cities in transforming into *Sustainable energy Positive & zero cARbon CommunitieS* by creating citizen-centric ecosystems. SPARCS consists of more than 60 Partners and Associated Partners, all with expertise in deploying integrated smart city solutions. Task 7.3 has delivered the outputs described below:

- An analytical framework was built reviewing the relevant academic and practitioner literature. The framework allowed to analyze and assess how multi-actor systems were organized and functioned in the Lighthouse Cities (Leipzig and Espoo);
- Based on the analytical framework, Lighthouse Cities were analyzed and assessed to appreciate their multi-stakeholder governance arrangements. The analysis was performed through documental analysis and in-depth interviews with staff and external stakeholders;
- Case analysis revealed two rather different stakeholder engagement formats in the two LH cities, which both lead to successful results, although some obstacles and weaknesses emerged in both cases;
- On the basis of the above-mentioned findings, a set of prescriptions to design a model for stakeholder engagement were developed;
- Finally, the concept for a MOOC (Massive Online Open Course) was drafted in order to ensure a structured learning approach with a syllabus and specific learning objectives, learning materials and support activities, an evaluation system based on quizzes, exercises or projects, a certification process.



## 1. INTRODUCTION

The report showcases the result of the mapping made under the Design of the Governance Models for Sustainable Smart City Business Ecosystems activity. As highlighted in the above disclosure part, a Governance model matching the two lighthouses’ experiences with knowledge-based tools would feed in to one of the main SPARCS’ objectives: to create 2050 Smart City Vision. The model is a management tool addressing the political, technological and economic value of the interventions.

Based on the analytical framework in the table below and the case studies<sup>1</sup>, a governance model for stakeholder engagement has been developed. This public report offers the outline of the proposed model. Finally, the deliverable has been adapted into a MOOC<sup>2</sup> instrument, addressed to all the local consortium partners involved in the SPARCS activities and interventions. The MOOC structure has been placed at the end of the final chapter.

Phase	Methodology	Deliverable
Design of the analytical framework	Literature review	Analytical framework
Case study analysis: Lighthouse Cities	Documental analysis performed and remote interviews with LCs’ staff	Short case report
Design of the Governance Models for Sustainable Smart City Business Ecosystems	Iteration case study- literature	Proposed governance model
Design of the MOOC	Iteration governance model - literature	MOOC concept, prescriptions for course delivery

Table 1 -Analytical framework

The report presents the output of the phase “Design of the analytical framework”. The analytical framework will allow to analyse and assess how multi-actor systems (including technical partners) are organized and function in the Lighthouse Cities (Leipzig and Espoo). The framework is built reviewing the relevant academic and practitioner literature, which are quoted time per time.

### 1.1 Analytical Framework: overall logic

The United Nation’s Sustainable Development Goal nr.11 refers to the cities to become more safe, secure and resilient. The cities are complex human settlements, and the diffusion of advanced digital technologies will augment from the one side the connections and the dependency, and from the other side the public trust in municipal administration. As such, collaborative relationships can generate value through actors’ multiple interactions (Best et al., 2019; Mason et al., 2020; Vespestad and Clancy, 2018).

<sup>1</sup> As per case studies, it has been considered Espoo and Leipzig experiences in start up the Smart City overall process, taking care of all the variables interested in.

<sup>2</sup> Massive Open Online Courses (MOOCs) are free online courses available for anyone to enroll. MOOCs provide an affordable and flexible way to learn new skills, advance career and deliver quality educational experiences at scale. <https://www.mooc.org>



The underlying logic of the framework is that:

- the value that is generated can be both internal value (i.e. for each individual stakeholder) and external value (i.e. among stakeholders and for the broader community), and
- organizational arrangements, i.e. the way stakeholder engagement is arranged, are a fundamental determinant in creating value through co-production.

### **1.1.1 Effects of stakeholder engagement: internal value and external value**

The **Internal value** accruing to stakeholders can be characterized by four components (Austin and Seitanidi, 2012):

- a. associational value, that is higher visibility and credibility, increased public awareness of issues of interest and greater support for a stakeholder's mission;
- b. transferred value, that is increased resources such as financial support in cash or kind and complementary assets;
- c. interaction value, that is opportunities for learning, access to networks and knowledge creation with greater capabilities and technical expertise;
- d. synergistic value, that is innovation, organizational and behavioural change, sharing leadership, increased long-term value potential and more power within stakeholder networks and society.

As for the **External value**, stakeholder engagement is a complex task as it incorporates the value of collaboration and interaction (Koppenjan, 2008). Most contributions claim that interactive decision making allows to overcome veto powers that often hijack “go-alone” decision making (Bryson et al., 2013; OECD, 2001). Consequently, reaching a shared decision can be considered an “external” outcome that interactive decision making can achieve (Ianniello et al., 2012). However, this instrumental view does not capture the intrinsic value of interaction. Other contributions point out that stakeholder engagement has a positive impact also in terms of creating trust among stakeholders (Wang and Wan Wart, 2007).

The most eloquent feedback loops in this respect should then be users' opt-in, in other term the decision to engage again in collaborative decision-making buy or use the service that has been co-designed or co-delivered (Hollebeek et al., 2016). Typically, engaged users display greater loyalty (Jaakkola and Alexander, 2014) and are more likely to display a favourable attitude to repeat their decision or re opt-in. Similarly, engaged stakeholders are more likely to continue co-producing. In other terms, stakeholder engagement can improve retention<sup>3</sup> (Oliver, 1999) which is another facet of value that can be generated.

On the other hand, stakeholder engagement has wider value creation effects in terms of impacts beyond the involved stakeholders. When public services are concerned, engagement can increase public services' efficiency and their overall quality, finally leading to superior societal outcomes (Loeffler and Bovaird, 2018).

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<sup>3</sup> Both practitioners and academics understand that consumer loyalty and satisfaction are linked inextricably. They also understand that this relation is asymmetric. Although loyal consumers are most typically satisfied, satisfaction does not universally translate into loyalty. To explain the satisfaction-loyalty conundrum, the author investigates what aspect of the consumer satisfaction response has implications for loyalty and what portion of the loyalty response is due to this satisfaction component. The analysis concludes that satisfaction is a necessary step in loyalty formation but becomes less significant as loyalty begins to set through other mechanisms. These mechanisms, omitted from consideration in current models, include the roles of personal determinism (“fortitude”) and social bonding at the institutional and personal level. When these additional factors are brought into account, ultimate loyalty emerges as a combination of perceived product superiority, personal fortitude, social bonding, and their synergistic effects. As each fails to be attained or is unattainable by individual firms that serve consumer markets, the potential for loyalty erodes. A disquieting conclusion from this analysis is that loyalty cannot be achieved or pursued as a reasonable goal by many providers because of the nature of the product category or consumer disinterest. For some firms, satisfaction is the only feasible goal for which they should strive; thus, satisfaction remains a worthy pursuit among the consumer marketing community. The disparity between the pursuit of satisfaction versus loyalty, as well as the fundamental content of the loyalty response, poses several investigative directions for the next wave of post consumption research. <https://www.jstor.org/stable/1252099>



As concerns service efficiency, early writing on co-production in the public sector (Brudney and Duncombe, 1992), have analysed how the inclusion of stakeholders' inputs in policy design and delivery could increase efficiency by:

- ✓ decreasing production costs keeping output level constant
- ✓ increasing output within a given budget or making output increase more than proportionally compared to inputs (Brudney, 1984; Garlatti et al., 2020).

In terms of quality, since service users and stakeholders contribute resources, such as expertise, resources and information, not available from service providers, service quality can be improved (Loeffler and Bovaird, 2018) both in terms of service coverage, differentiation and customization.

### **1.1.2 Arrangements for stakeholder engagement**

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Organizational design, especially formal (or Institutional) structure, has been claimed to be central in shaping decisions and behaviours (Egeberg, 2003) since it provides bounded rational actors<sup>4</sup> with selection mechanisms to make choices (Simon, 1947). Furthermore, as highlighted in more general terms by most institutionalist literature, the “rules of the game” are fundamental in shaping outcomes since they select who participates and what options are easier (Peters, 2011). Therefore, many contributions on stakeholder engagement have looked at organizational arrangements as the antecedents of stakeholder engagement's effects (Fung, 2006, Fedele et al., 2016). To carry out the empirical analysis, this assessment narrows down organizational arrangements to accessibility, formalization and type of coordination device (Fedele et al., 2016; Ianniello et al., 2012).

Accessibility is the extent to which stakeholders can access the process and influence the decision. Most literature has, in fact, considered two arrangements as central to every interactive design (OECD, 2001; Berry et al., 1993)<sup>5</sup>. The first is which stakeholder can participate, defined as “width” of participation or “inclusiveness” in stakeholder' selection. Width refers to which extent all stakeholders can participate and how and by whom they are selected. The second is to what extent stakeholder can influence the decisions at stake, variously defined as “depth” of participation or “extent of authority” or “process openness” (Ianniello et al., 2012).

Formalization, that is a central component in organizational design (Burns and Stalker, 1961), means to what extent process, outputs and overall functioning of the interactive practice are ex-ante defined by formal rules and procedures (Mintzberg, 1980). Formalization matters for stakeholder engagement since it bestows upon the administrator power and influence (Walsh and Dewar, 1987), that is: a) whether the process flows along predefined steps; b) whether the expected outputs are specified ex-ante.

Furthermore, it is important to understand at which phase of the policy cycle stakeholders are engaged. Following Nabatchi et. Al (2017), it is possible to distinguish four alternative situations: Co-Commissioning, Co-design, Co-delivery, Co-assessment.

Lastly, in terms of coordination device, the framework adopts the taxonomy suggested by Bouckaert et al. (2010), who classified several coordination devices that can be centered on either structural solutions (for example a unit or position), or management system, for example such as a planning system.

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<sup>4</sup> It has been described explaining the administrative behavior; a study of decision-making processes in administrative organization.

<sup>5</sup> The OECD issued an explorable guide helps policy makers design and implement Mission-oriented innovation policies. With the support of policy makers and building on partnerships with selected institutions, the toolkit aims to become the reference platform for all those who set up, implement or research and advise on mission-oriented innovation policies. <https://stip.oecd.org/moip/>



## 1.2 Analytical framework: variables

To investigate how value is co-created through stakeholders' interaction in multistakeholder settings and to grant theoretical replication, this report has developed a qualitative analytical framework (Yin, 2014) to better understand what value co-production creates for stakeholders and how stakeholder engagement can be enhanced.

The framework's variables and constructs have been specified ex-ante from the literature. As underlying logic:

- ✓ on the one hand stakeholder co-production creates value both for the stakeholder themselves and for their community
- ✓ on the other hand, that organizational arrangements (how stakeholder engagement is arranged) are a fundamental determinant in creating value through co-production.

The internal effects produced by stakeholder engagement (associational value, transferred value, interaction value, synergetic value) are analysed simply according to three nominal categories, i.e. "yes, value created" or "limited value created" or "no value created" as per the interviews with key informant. As concerns external effects, shared decision is very simply categorized as "Yes/No", while efficiency will be assessed specifying whether efficiency has increased and why, that is "decreasing production costs keeping output level constant", "increasing output within a given budget" or "making output increase more than proportionally compared to inputs" (Brudney, 1984).

	Dimension	Component	Status
Value creation	Internal value	Associational value (visibility/support)	Yes/limited/no
		Transferred value (increased resources)	Yes/limited/no
		Interaction value (Learning/network access)	Yes/limited/no
		Synergetic value (innovation/change)	Yes/limited/no
	External value	Shared decision	Yes/no
		Trust building	Opt-in and/or retention vs. neither
		Efficiency	1. Decreasing production costs keeping output level constant 2. Increasing output within a given budget 3. Making output increase more than proportionally compared to inputs 4. No service efficiency effects
		Quality	Enhanced coverage and/or enhanced differentiation and/or enhanced customization vs. no enhancement
Arrangements	Phase in the policy cycle	Level of coproduction	1. Co-commissioning 2. Co-design 3. Co-delivery 4. Co-assessment
	Accessibility	Width of engagement	1. Authority decides 2. Any stakeholder can decide/self-selection 3. Some inclusiveness
		Depth of engagement	1. Authority decides 2. Any stakeholder can decide 3. Some openness
	Formalization	Of the process	Yes/no
		Of the output	Yes/no
	Coordination	Device	1. Structural dimension 2. Management system

Table 2 - Overall analytical framework



The same logic will be followed for quality to highlight what quality features, if any, were improved among coverage, differentiation and/or customization. Thus, the framework reports any enhancement in coverage, differentiation and/or customization, or no enhancement at all.

To analyse changes in trust building, the framework specifies whether there has been any opt-in, any retention or neither. As concerns the arrangements for stakeholder engagement, accessibility is meant as width and depth of participation. Width can vary as follows: “authority decides”, “any stakeholder can decide/self-selection”, “some inclusiveness”.

There are three possibilities:

1. authority decides
2. any stakeholder can decide
3. some openness.

Formalization is meant as formalization of output (whether the expected outputs are specified ex-ante) and of the process (whether the process flows along predefined steps). In both case the result can be “yes” or “no”. Finally, coordination device can be “structural solutions” or “management systems”.

### 1.3 Collaborative approach

According to what is described above, the multi-stakeholder governance arrangements adopted in Leipzig and Espoo to engage stakeholders in participative processes have been analysed and assessed.

As concerns Leipzig, the focus is on the engagement processes which occurred when passing from being a Fellow City inside Triangulum<sup>6</sup> project (which reply on the definition of a feasibility study and a capacity building learning approach) to the preparation phase of the SPARCS project (where Leipzig is a full Lighthouse city with a full scale Positive Energy District demonstration with almost half billion € of overall investment programme); as concerns Espoo, the analysis focuses on the Sustainable Espoo Development Program.<sup>7</sup>

City	Stakeholder group	Interviewee
Leipzig	Internal (municipality)	Director, Digital City Unit
		Senior project manager, Digital City Unit
		Head, Urban redevelopment dept., Office for Housing and Urban Renewal
	External	Corporate strategist, LVV - Leipzig Supply and Transport Company
Espoo	Internal (municipality)	Specialist, Sustainable Development, City of Espoo, Centre of excellence for sustainable development
		Development Manager 1, Sustainable Development Centre of excellence for sustainable development, Strategy, Mayor’s Office
		Development Manager 2, Sustainable Development, Strategy Centre of excellence for sustainable development, Mayor’s Office
		Development Manager, City Strategy Unit
	External	Asset Manager, Fortum - Energy Company

Table 3 - Collaborative approach

<sup>6</sup> [https://triangulum-project.eu/?page\\_id=82](https://triangulum-project.eu/?page_id=82).tr

<sup>7</sup> Sustainable Espoo - Espoo’s sustainable development work involves developing, testing and implementing sustainable urban solutions of the future together with partners and residents. The goal is a safe, healthy and smooth daily life in a carbon-neutral city. <https://www.espoo.fi/en/kestava-kehitys/sustainable-espoo>



The case selection was agreed with the Lighthouse Cities' representatives. The analysis was performed through documental analysis and interviews with staff in each city in charge of managing multi-stakeholder settings related to the SPARCS project, as well as interviews with other internal and external stakeholders involved in such participatory processes.

The analysis allowed to identify several takeaway lessons emerging from each case, which will serve as the basis to design the Governance Models for Sustainable Smart City Business Ecosystems. This document offers a short report of findings from each of the two case studies.

## 2. BACKGROUND : STAKEHOLDER ENGAGEMENT

Engaging external stakeholders (partners, users, associations, civil society, the public, etc.) in a wide range of policy areas, at different stages in policy development using deliberative methods and processes is an accepted and legitimated practice in several policy areas (Garlatti et al., 2020; Cass, 2006). Indeed, the literature provides theoretical justification for the adoption of stakeholder engagement in areas as varied as the health sector (Abelson et al., 2001), nanotechnology development (Russell, 2013), natural resource management (Halseth and Booth, 2003), waste management (Petts, 2005) and environmental policy (Owens et al., 2004).

Stakeholder engagement has been described as a process where a range of people learn, discuss and work out solutions together. It may involve time and space being provided to enable participants to gain new information and to discuss in depth the implications of their new knowledge in terms of their existing attitudes, values and experience (Involve, 2008). The writing of Habermas (1975, 1984) heavily influences the normative arguments for engagement. This calls for an extension of both participation and inclusion through deliberation to address the power inequalities present in most forms of communication between 'decision-makers', such as those formulating or implementing policy and the public.

The engagement process can encourage the conditions in which communication should take place in a form of rational deliberation where strategic (that is, interested action) is suspended and actors seek to motivate each other towards understanding rather than seeking to influence one another (Hunt et al., 2003).

This process leads to a reasoned discussion between decision-makers and the public and achieves one or both goals of widening democratic participation and pursuing a common or public goal. In general, the literature suggests four motives to adopt participatory governance (Kübler et al., 2020):

- A response to deficits of representative democracy. The most common line of argument is to view participatory governance as a remedy for the crisis of representative (local) democracy (Klijn and Koppenjan, 2002: 142). More particularly, it is argued that decreasing participation in traditional democratic institutions has led to legitimacy deficits that, in turn, increase the pressure for democratic renewal and ultimately foster the introduction of participatory governance (Fung, 2015; 2006).
- A strategy to improve governance effectiveness. Authorities seek to achieve effective governance and expect participatory mechanisms to contribute to governance effectiveness (Fung, 2015). Klijn and Koppenjan (2002) offer two expectations that governments formulate in this respect: the improvement of policy quality; and the increase of policy acceptability by the public.
- The electoral benefits of participatory governance. Few scholars have discussed mechanisms of participatory governance in terms of the electoral benefits that it could bring to politicians who introduce and practice them. Yet, on the one hand, for elected politicians, these mechanisms thus offer a stage to present themselves to the public, as well as opportunities to engage in personal contacts with citizens and reach out to the electorate; for politicians standing for



election, good direct connections with their citizens are particularly important against the background of weakening party ties in most established democracies (Wampler, 2008).

- Participatory governance as a public administration fad. Several studies on participatory governance convey the notion that participatory procedures are part of professional administrative practice. Administrative theory nowadays emphasizes the importance of stakeholder inclusion and dialogue (Heinelt, 2010). The introduction of participatory governance is thus related to initiatives taken by public administrators, who promote them as part of state-of-the-art administrative practice, and seek to strengthen networked forms of governance that highlight the participation of citizens and service users in the management or monitoring of public services (Torfing et al., 2012).

## 2.1 Types of Stakeholder Engagement

There are different forms of stakeholder engagement, and any typology will rest on both the participation contexts and the purpose of the process. As such there is no single universal typology or definition which can be applied to stakeholder engagement and numberless taxonomies have been developed over the years.

As an insightful example, the National Coalition for Dialogue and Deliberation (NCDD, 2013) developed a framework designed to help practitioners decide which types of approaches are the best fit for their circumstances. The framework is a series of two charts that categorize engagement techniques into four ‘streams’ based on the primary intention of the process (Exploration, Conflict Transformation, Decision Making and Collaborative Action) and the best-known methods proven to be effective in each stream. A summary of the intention and methods is in table below.

Purpose	Description	Methods
Exploration	People learn more about themselves, their community or an issue and perhaps come up with some innovative ideas	World Café, Open Space, Socrates Café, Bohm Dialogue etc.
Conflict Transformation	Poor relations or a specific conflict among individuals or groups is tackled	Sustained Dialogue, Mediation, compassionate listening etc.
Decision Making	A decision or policy is impacted, and public knowledge of an issue is improved	Citizens Jury, Deliberative Polling, consensus conference etc.
Collaborative Action	People tackle complex problems and take responsibility for the solutions that they come up with	Study Circles, Appreciative Inquiry, future Search etc.

Table 4 - NCDD engagement streams framework

Stakeholder engagement can produce a range of effects (Loeffler and Bovaird, 2018). One view of stakeholder engagement is that the inclusion of more members of the public in deliberative processes can be seen as an end in itself, notwithstanding any claims for improved policy or decision making. In this view the public is characterized as disenfranchised by technical forms of assessment, values are seen as important inputs to decision-making, and it is felt that deliberative approaches are justified on the grounds of democratization and empowerment alone regardless of process outcomes (Fiorino, 1990).

An alternative view of stakeholder engagement is based on the premise that it positively influences the quality of decisions, policies and assessments through the inclusion of a multiplicity of viewpoints. Stakeholder engagement enables factors that escape technical forms of appraisal to be captured and integrated into the processes and outcomes (Cass, 2006). In this view engagement is a means to an end rather than an end. The end point in the case of our project is more informed decision making by city governments.



A further product of the stakeholder engagement process is the ‘social learning’ that is often valued by participants and manifest in a variety of ways including empowerment and agency, social intelligence, self-fulfilment, and a sense of belonging to a shared undertaking (Hunt and Szerszynski, 1999). Stagl (2006) provides a typology of social learning associated with the participation process including cognitive learning (largely informational), mutual understanding (an ability to appreciate the values of others through offering and receiving justifications for positions), trust and respect in group-building and learning about societal needs and the institutional changes required to satisfy them.

From a policy perspective, stakeholder engagement has been seen by policy makers to improve policy but more importantly to create legitimacy (Fiorino 1990). This legitimacy can be seen as being attached to the resulting outcomes, to decisions taken after the DE process or to the institutions and organizations that sponsor, commission, or conduct such processes. In an era when trust in a variety of public and private sector institutions has been eroded, stakeholder engagement is seen as an approach which can help to sustain or restore credibility and lead to more inclusive and effective decision making.

It is important to note that in most of the literature there is a consensus that public participation in decision-making, particularly when facilitated in deliberative modes, is thought to be an important response to the shifting power or agency from the state to those of markets and civil society. This is important in the move from government to governance<sup>8</sup> through the creation of more widely legitimate consensus. Hobson and Niemeyer (2011), in a study of the deployment of deliberative processes around climate change in Australia warn that claims about specific deliberation platforms as ‘an effective and efficient means of fostering broader adaptive capacity require a more staid and agnostic response’ (Hobson and Niemeyer, 2011p.969).

## 2.2 Towards successful engagement

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A major criticism is that stakeholder engagement often does not deliver the benefits that are promised. For example, too few citizens are involved in participation for it to have a truly democratizing effect and small deliberative groups can be unrepresentative of the wider population and may impact on the equity of input across the population, the generalizability of findings (O’Neill, 2001b) and the legitimacy of the process (Stirling, 2006). The practice of co-opting and enrolling potential opponents into deliberative processes can tame or reduce radical views and has existed for at least a decade as a managerial orthodoxy (Taylor, 2001). Random selection is put forward as a way of mitigating potential bias but operationalizing such approaches can be challenging and problematic and may not be advisable for selection that require a more purposeful sampling of the stakeholder to be engaged.

The most frequent critique to stakeholder engagement is that of ‘decision justification’. This is associated with the idea that stakeholder engagement is used by influential actors to legitimize a particular outcome (Stirling 2006). For example, sponsors may translate the ‘real needs’ into those that agencies can realistically provide (Mosse, 2001). Far from being a transformative process in which stakeholders can exert influence over decision making, it becomes a well-honed tool for engineering consent associated with decisions already made in advance (Hilyard et al., 2001).

A substantive issue in areas such as science and technology are the role that privileged groups or ‘experts’ play in the discourse (Flyvberg, 1998). Some note that stakeholder engagement serves to benefit those who are ‘expert’ in conducting such processes be they academics, practitioners or policy makers, whose ability to create and sustain this discourse is indicative of the power that they possess in the construction of a particular reality (Cook and Kothari, 2001). Facilitation plays a key role in many approaches to stakeholder engagement and there is potential for this ‘expert’ to abuse their role and act strategically. In effect, the purpose of the facilitation should be to expressly counter the possibility of strategic behaviour, especially in preventing discursive dominance of individual participants or experts.

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<sup>8</sup> <https://www.jstor.org/stable/1181557>; [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1752191](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1752191)



It is widely acknowledged, even by its advocates, that stakeholder engagement can be a time-consuming, costly and intensive effort. The intangible benefits claimed to accrue from deliberation namely legitimacy, trust and social learning are mobilized in response to criticisms associated with the cost-effectiveness of the process. They provide, however, only a partial riposte. In one of the only studies to compare deliberative and more traditional public engagement (in the realm of the development of innovative transport policies in Munich), the more inclusive stakeholder engagement study did not compare favourably (Hajer and Kesselring, 1999). In a review of the growing body of learning and evidence Involve and the National Consumer Council (NCC, 2008) identify nine principles underpinning effective public engagement and identified good practice may inform the design and underpin effective engagement.

These are that the process:

- makes a difference - to participants, decisions, and policy
- ensures that the information provided to participants, the reporting of participants' views, and the channels by which their views feed into policymaking are transparent
- ensures integrity and openness
- is tailored to circumstances and is designed to meet specific aims and objectives, and to meet the needs of participants as well as those of the decision or policy makers
- involves the right number and type of people
- treats participants with respect and values their contribution
- gives priority to participants' discussions, learning and feedback
- is reviewed and evaluated to improve practice
- keeps participants informed.

### 2.3 Obstacles to engagement and solutions

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Several contributions have analysed practical examples of participation processes in order to obtain a comprehensive understanding of the problems, barriers and threats to the implementation of this practice, as well as of the techniques and processes that have characterized successful public inclusion (Ianniello et al., 2019; Fedele et al., 2016). The emerging pattern and recurrent themes that have contributed to successful participation are clustered around three categories:

- Contextual factors;
- Organizational arrangements;
- Result-related issues.

### 2.4 Contextual factors and Organizational arrangements

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By contextual factors it is meant those given variables which influence the engagement process but can hardly be modified. These variables include information deficit and asymmetries among participants as well as the attitude of officials.

As far as information deficit and asymmetries are concerned. Indeed, it will be pointed out as the two real cases analysed (Espoo and Leipzig) shown different stakeholders have often little knowledge of the issues and motives of others, each stakeholder engages with situations from their different traditions of understanding, and the more the issue at stake is complex or technical, the knowledgeable stakeholders may find it difficult to participate.

The meta-analysis by Ianniello et al (2019) reveals that the main consequences of information deficits and asymmetries for engagement processes have been limited focus and unrealistic expectations. While asymmetric information limits the goals and agenda of many involvement efforts to the goals and agenda of the organizers, participants may have unrealistic expectations about the actual influence they could



have precisely because they do not properly share in the involvement efforts. Many wicked problems<sup>9</sup>, such as climate change, are increasingly global in scope, and stakeholder at local level may not be able to understand just how their actions can resolve the issues of concern.

On the other hand, officials often see civil dialogue as a palliative for the challenges posed by exclusionary or unpopular policies. This implies not wanting to let go of power and control with a “ticking the box” attitude which shows little appreciation for public involvement and deprives the processes of influencing the real issues at stake, while decision-making is effectively carried out somewhere else. Official support matters for participation: bureaucratic structures (e.g., “red tape” and hierarchical authority) are a major barrier to effective participation.

Differently to contextual factors, organizational arrangements can be influenced (Bryson et al., 2013). The real-world examples revealed that among these variables the ones which contribute most to engagement are community representation and process design. The main potential problems that have been identified in terms of representation can be grouped in three categories: selection of participants is never “neutral”; participation is generally limited; representation is often problematic. Similarly, process design and management are vital for the success of participatory processes<sup>10</sup>, especially in relation to the choice and implementation of “appropriate” tools of dialogue and the dynamics of public involvement, which may otherwise jeopardize the outcome of such efforts.

Confused definitions of public engagement mechanisms and little understanding of the advantages and disadvantages of different participation methods have often undermined the inclusion process, or even made it pointless.

## 2.5 Result-related issues

The final category of the factors that most influence participation concerns outcome-related issues and in particular group dynamics and the overall performance of the engagement process itself.

1. On the one hand, “leaders” and “elites” within participatory groups may influence civil dialogue as the gatherings tend to be dominated by well-organized minority groups or vocal individuals who may have extreme views. The threat is that group dynamics can become dominant, giving only ritualistic attention to participatory practice in the face, for example, of radical positions, economic pressures or political directives.
2. On the other hand, while public inclusion helps engaging people, holds policy makers more accountable and offers an aura of legitimacy to their decisions, it does not guarantee that participatory processes deliver improved outcomes compared with traditional representative democracy. If the aim is policy change, collaborative arrangements are often less efficient and effective at achieving it. Moreover, there are normative and instrumental concerns: if involvement efforts are not carefully designed or implemented, civil dialogue may delay decisions, increase conflict, disappoint participants, and lead to more distrust. Little or no impact have had important consequences for involvement efforts, as well as for the policies under discussion.

## 3. CASE STUDY: LEIPZIG

Leipzig is the most populated city in the state of Saxony in Germany with 597,493 inhabitants (31.12.2020, [www.de.statista.com](http://www.de.statista.com)). This makes it the 8th largest city in Germany before cities such as

<sup>9</sup>[https://www.sympoetic.net/Managing\\_Complexity/complexity\\_files/1973%20Rittel%20and%20Webber%20Wicked%20Problems.pdf](https://www.sympoetic.net/Managing_Complexity/complexity_files/1973%20Rittel%20and%20Webber%20Wicked%20Problems.pdf)

<sup>10</sup> Governance models do not necessarily mean participatory processes, as public engagement do not necessarily mean the activation of participatory processes.



Berlin, Dortmund, Essen, Bremen, Dresden (Saxony's capital), Hannover or Nurnberg, and the second largest city in the former Eastern German states after Berlin. Ten years ago, Leipzig was the 13th largest German city according to the 2011 census with 502,979 inhabitants.

After the German reunification, Leipzig initially lost citizens, but over time has built on its culture, history, and meeting-point tradition to create a vibrant economy: musicians such as Johann Sebastian Bach and Richard Wagner were from Leipzig. Its trade fairs and conventions before the Covid pandemic attracted over 1.2 million visitors a year. Leipzig University is one of the world's oldest universities and the second oldest in Germany.

It was founded in 1409 and its alumni include people like Johann W. Goethe, Gottfried W. Leibniz, Friedrich Nietzsche, and more recently Angela Merkel and nine Nobel laureates. Leipzig's economy is successfully turning from a post-industrial to a knowledge-based economy. The city's strategy focuses on five clusters:

- automotive;
- healthcare and biotech;
- energy and the environment
- logistics and services;
- and media and creativity.

Although four large companies belonging to the automotive industry (Porsche, BMW) and logistic sector (DHL, Amazon) have their headquarters in Leipzig, small and medium enterprises (SMEs) form the backbone of the local economy. Two out of three employees in Leipzig work for companies with less than 250 employees. Leipzig prides itself of being the fastest-growing sustainable city in Germany: the city has participated since 2011 in the "European Energy Award" and received its gold certification in 2017. Since 2018 Leipzig together with the city of Dresden is one of the 12 Digital Hub Initiative regions recognized and supported by Germany's Federal Ministry for Economic Affairs and Energy.

Each hub is responsible for making advancements in certain areas of technology. Leipzig is the official Hub in Germany for smart infrastructure with an emphasis on energy, smart city, e-health, and cross-sectional technologies. In 2019 it was named European City of the Year at the 2019 Urbanism Awards for its excellence in combining industry, sustainability, and liveability. Both BMW and Porsche have their main development centres for electric cars in Leipzig. The city is committed to reduce gas emissions and becoming a smart city with innovations in the energy, mobility, and IT sectors.

### 3.1 The vision<sup>11</sup> for the City of Leipzig

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The overall city vision can be analysed observing its main city-wide strategic plan, i.e. "INSEK Leipzig 2030" (Integrated Urban Development Concept), an integrated urban development strategy approved in 2018 under the principle "Leipzig is growing sustainably!" which followed from "SEKo Leipzig 2020" endorsed in 2009. Such strategic vision is based on ensuring economic strength, handling financial resources responsibly, ensuring the use of democratic principles, the creation of social cohesion, and using natural resources responsibly to preserve and improve environmental conditions. The City of Leipzig predicts 10 challenges that will arise because of the strong growth in its population:

- affordable housing,
- cultural identity,
- education infrastructure,
- green spaces in the city and quality of the built environment,
- high quality growth,

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<sup>11</sup> As a step toward the City Vision 2050 that will be defined for each LH and FC in the Work Package 1, Deliverable1.11 and synthesized in a comprehensive document, covering urban, technical, financial and social aspects. A draft version developed by M12 (October 2020) has been considered. The final vision, fed with the inputs from the tasks and deliverables, will be finalized in M60.



- modern and local administration,
- precautionary land and property management,
- social justice,
- sustainable mobility
- urban safety.

The city of Leipzig developed INSEK to deal with these challenges in a strategic manner and divided its strategic goals and action fields in four groups:

- ensure life quality,
- create social stability,
- succeed in competition and strengthen the economic base through innovative impulses,
- strengthen its internationality.

To do this, the city of Leipzig has embraced a holistic approach and wishes to implement smart and forward-looking initiatives for and with the community. Collaboration is to be the focal approach of new initiatives to promote communication, synergies, common technologies, shared objectives for the community, and innovative financing models, with the City of Leipzig as the catalyst and pinpoint.

### **3.2 Stakeholder engagement: Triangulum and SPARCS projects**

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Since 2015 the City of Leipzig has been participating in the Triangulum project to become one of the followers of the first Lighthouse Cities, that is cities which become living labs for conceiving, financing, and testing smart city solutions. In 2019 Leipzig was one of the initiators of the SPARCS project in which it plays the role of a Lighthouse City.

Initially a coordination unit from the Office for “Urban Renewal and Housing Construction Subsidies” (ASW) of the City of Leipzig was responsible for the participation process as well as the development of the Smart City Implementation Strategy within the Triangulum project. This unit was financed only by funds from the Triangulum project. Already during the initial phases of the project, it became apparent that Leipzig was facing stakeholder engagement and digitalization issues.

Hence, a realignment of the working structures was deemed necessary: the “Digital City Unit” (DCU) was established in 2019 under the department of “Economy, Labor and Digital Affairs” and given its own budget to deal with the development and implementation of innovation projects. It would act as a competence centre for digitization within and for the city administration as well as external actors, working as an interface particularly between the municipality and its subsidiaries, that is public utilities and other enterprises.

However, the DCU must work together also with academic and research institutions, private companies, and citizen associations, because smart city issues need to be elaborated and implemented in collaboration between city administration, businesses, civil society and research institutions. One key project is the establishment of an urban data platform to connect the municipality with its public utilities that includes the so called Leipziger Gruppe, that comprises the Leipziger Stadtwerke (energy and heating), the Leipziger Verkehrsbetriebe (public transport) and the Leipziger Wasserwerke (water works).

Furthermore, all topics related to e-government are led by the Department of General Services together with the different city departments which needs to be involved in such consultations.

### **3.3 Stakeholder engagement analysis**

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The stakeholder engagement regarding Smart Cities has evolved during time due to the new organisational structure (Digital City Unit) and the increasing number of topics and projects this unit is dealing with. During the initial phases of the Triangulum project (2015-2017), the coordination unit from the Office for “Urban Renewal and Housing Construction Subsidies” (ASW) engaged internal and external stakeholders inviting them to three different participation formats:



1. Future Forum (Zukunftsforum), an advisory and decision-making council to promote knowledge exchanges between the municipality and its public utility companies and to set the framework for joint smart city strategies and projects;
2. Future Expert Lab, more practice-oriented discussion groups which brought together the working levels of the city departments and the public utility companies concerned with a specific issue or involved in a specific project;
3. Smart City Workshops, meetings which involved the relevant local stakeholders, from citizens to businesses to inform them about smart city developments and discuss possible pilot projects in the district of Leipzig West, which was identified as a test area.

With the establishment of the DCU in 2019, new engagement structures were settled building on past experiences: Future Forums were identified as the most valuable meeting format, while Smart City Workshops revealed ineffective because too few people were involved with different interests and with limited appreciation for the smart city concept, which was still being developed. Future Expert Labs worked fine as working level meetings but had to be given more structure in terms of agendas and expected outputs, while the involvement of higher-level decision-making people within internal and external stakeholders was missing all together to steer the discussion and engagement on important topics.

Since 2019 the work of the Digital City Unit has focused not only on smart city issues, but also on digital issues. The DCU is supported and acts as a facilitator for four different engagement forums to engage selected stakeholders:

- A. Future Forum, inherited from the initial phases of the Triangulum project;
- B. Expert Commission (Expertenkommission), which consists of 12-15 members representing high level decision makers within civil society, universities, the local business ecosystem, and urban innovation experts plus the Mayor of Leipzig; the group meets 3-4 times per year to advise on current issues, the potentials for a smart city and its digital transformation and to initiate joint projects;
- C. Digital Conference (Digitalkonferenz), which brings together the heads of the different departments and offices within the city administration and the middle-management level of the public utilities (energy supplier, public transport company, etc.) to allow for cross-functional and cross-sectoral exchanges and discussions; it meets once or twice a year;
- D. Digital Accomplices (Digitalkomplizen), a more open working group which addresses all employees of the city administration and public utilities concerned with or interested about smart city and/or digitalization issues; it brings together 60-70 people twice a year to discuss the actual details and implementation of specific strategies and initiatives decided at higher level.

All four engagement formats are mainly concerned with co-commissioning, which is about defining priorities and needs, and co-designing, that is defining together selected strategies and projects.

The Expert Commission often sets the agenda for future developments but can neither take decisions for the City nor allocate budgets, which are prerogatives of the Mayor and the City Council. The engagement model foresees that the Mayor and the Vice Mayors of the City meet regularly (4-5 times p.a. or as necessary) in the Digital Board (Digital Dienstberatung) with the CEOs of the Leipziger Gruppe and the Head of the DCU to discuss and decide on strategic smart city issues and digitalization projects.

The DCU is responsible for the preparation of these meetings and the implementation of decisions through the support of the various engagement structures set up with the municipality and its key stakeholders. Eventually all decisions must be approved by the City Council.

The initial engagement structure revealed to be relatively complicated and over the past two years it has been made more flexible and informal, so that the Digital Conference has met only once a year of the foreseen two and the Digital Accomplices only twice of the planned 3 or 4 times, while the Future Forums have once more revealed the most successful format and are in their 19th edition since 2015.



From an organizational point of view, participant selection and agendas are mostly decided by the DCU, even though Future Forums and Digital Accomplices are more flexible. An invitation is not necessarily needed to participate in a Digital Accomplice, while stakeholders can ask to join a Future Forum they were not directly invited to. Agendas have become more formalized over time to gain more focused engagement, even though future agendas might be influenced by the inputs offered by stakeholders in the various meetings.

Indeed, all formats are open and consultative, allowing for different viewpoints and information to be shared freely, even though no final decision regarding city strategies and policies is taken. Similarly, to agendas, desired outputs are shared from the very beginning so that participants are aware of what is required. Some stakeholders report that over time the formalization of agendas, deadlines and output have been increasing, since the engagement processes have move into actual decision-making on salient issues.

Over time it became obvious that participants appreciate the visibility they can gain through these engagement processes, in particular external stakeholders value the exposure to the Mayor in the Expert Commission and the opportunity to gain even more visibility in the Future Forums, which are always well attended.

Stakeholders also appreciated the learning and networking they enjoy from participating in all engagement formats, but they do not find that their participation leads to increased resources or funding, which are a longer shot in the future (for example European funds), nor that it leads to changes or innovations within their organizations, but rather adaptation, probably once more because real change and innovation take time.

	Dimension	Component	Finding
Value creation	Internal value	Associational value (visibility/support)	Yes
		Transferred value (increased resources)	No, only long term
		Interaction value (Learning/network access)	Yes
		Synergetic value (innovation/change)	Limited
	External value	Shared decision	Some
		Trust building	Yes, retention
		Efficiency	No efficiency effects (for now)
	Quality	Enhanced strategies and policies	
Arrangements	Phase in policy cycle	Level of coproduction	Co-commissioning, Co-design
	Accessibility	Width of engagement	Authority decides, minor inclusiveness
		Depth of engagement	Some openness
	Formalization	Of the process	Yes, increasing over time
		Of the output	Yes
	Coordination	Device	Structure

Table 5 - Summary findings according to the analytical framework

**Stakeholders recognize that the engagement process improves the quality of the strategies and policies which will be decided upon, that some consensus is reached, and that trust has been built among participants, so much that stakeholders have continued participating over time and involvement has grown.**

**Yet, they realize that such processes are not necessarily efficient as they require a lot of time in exchanges and negotiations, even though they will hopefully lead to quicker decisions and policy implementation than would have been otherwise.**



### 3.4 Critical issues

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From several remote interviews with external and internal stakeholders some critical issues have emerged:

- Difficulty in dealing with new, non-core issues: until 2017 the concept of smart city was a nice, fashionable issue, and digitalization was neither a key policy issue nor a priority for key decision makers such as the Mayor or the CEOs of key public utilities.
- Digital Conference: this engagement forum has not achieved its objectives and needs to be rethought or eliminated. Indeed, municipal department do not appreciate the cross-functional impact of smart city issues and digitalization and send their key responsible people for such issues rather than attending themselves. Managers from external stakeholders do not find such meetings useful as they are very much focused on internal stakeholders and no real decision or discussion happens. Finally, it was a confrontation with operational municipal staff which already happens at the Digital Accomplices.
- Efficiency to be further verified: many resources have been invested in these engagement processes and the learning phases since the early phases of Triangulum project; an overall evaluation with a cost and benefit analysis might be worthwhile.
- Remoteness from citizens: the initial engagement experiments in Leipzig West to involve citizens and local businesses directly did not work; hence the process is now involving only large institutions and organizations and mainly public utilities; yet smart city concepts and digitalization to work will require people's engagement.
- The Covid-19 pandemic has postponed or forced many meetings online in 2020, which has made their organization more cumbersome with less engagement, sharing and consensus building in comparison to the final phases of the Triangulum project in 2019.

### 3.5 Lessons learnt in Leipzig

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The case study of the City of Leipzig has led to important learnings and take away lessons for stakeholder engagement.

It is important to recognize stakeholders of different nature (municipality departments vs. public utilities vs. experts) and at different levels (decision-making vs. working/organizational level) and offer the right engagement formats. This could lead to establish different fora for the general public and the specialists.

As concerns the municipality, it is crucial to involve both elected and unelected officials.

- ✓ Specifically, it is necessary that key elected officials support both the engagement process and the issue around which the engagement process is built.
- ✓ It is fundamental to design how to link the stakeholder engagement structure to the formal structure of the municipality and its procedure.
- ✓ The unit tasked with managing the engagement process needs to be endowed with a sufficiently large budget and staff and cannot be too detached from the municipality's formal organizational structure and decision-making procedures.
- ✓ The organizational arrangements designed to engage stakeholders need to be flexible so to be modified according to the critical issues which emerge.
- ✓ Efficiency needs to be verified in the long run, to justify an engagement process which usually requires greater resources initially but guarantees a smoother, faster, and more cohesive implementation and delivery phase.
- ✓ It is necessary to think of all risks and consider alternative options in case of major events, such as a pandemic, to be able to continue to successfully engage stakeholders.



## 4. CASE STUDY : ESPOO

Espoo is the second largest city in Finland after the capital Helsinki and with over 292,913 inhabitants (November 2021, StatFin) it is its fastest growing city. It is a “network” city with five urban centres and forms a major part of the large metropolitan area known as Greater Helsinki, which is home to over 1.5 million people.

At the beginning of the 19th century Espoo was a rural municipality of about 9,000 inhabitants. Agriculture was the primary source of income, with 75% of the population making their living from farming. It started to grow rapidly in the 1940s and 1950s, developing from a rural municipality into a fully-fledged industrial city, gaining city rights in 1972. Due to its proximity to Helsinki, Espoo soon became popular amongst people working in the capital. In the fifty years from 1950 to 2000, the population of Espoo grew from 22,000 to 210,000.

Today Espoo is a thriving technology centre, where over 200 international corporations have established operations including Nokia, HMD Global, Tieto-Evry, KONE, Neste, Fortum, Orion Corporation, and Foreca, as well as video game developers Rovio and Remedy Entertainment.

It also hosts the VTT Technical Research Centre of Finland and the Aalto University, which contains the Aalto University School of Business and Aalto University School of Arts, Design and Architecture, where Chemistry Nobel prize winner Artturi Virtanen taught at the former TKK’s Chemistry Department. Espoo is part of the national sustainability strategy network 6Aika<sup>12</sup>, which focuses on sustainable development of the 6 largest Finnish cities by facilitating smart solutions, more open approaches, and the development of new businesses.

In 2017, Espoo was named the most sustainable city in Europe in a benchmarking study using the Sustainable Development Goals (SDGs) and based on the idea of continuous improvement of its natural, socio-cultural, and economic assets<sup>13</sup>.

### 4.1 The vision for the City of Espoo<sup>14</sup>

The Espoo Story is Espoo’s official strategy, which was developed with its citizens and approved by its City Council in 2017 for the council term 2017-2021. In 2021, the newly elected city council approved a new Espoo Story for 2021-2025. This study focuses on the current Espoo story.

Its name pays homage to Espoo’s over 500-year history. The Espoo Story is based on three values and operating principles:

- Espoo is resident- and customer-oriented: its best resources are its residents, communities, and companies. An active involvement of residents in the development of services and a comprehensive cooperation with partners ensure effective services that meet the needs of the residents; hence Espoo needs to be a good place for everybody to live, learn, work and be an entrepreneur and a place where residents can truly make a difference;
- Espoo is a responsible pioneer: its people need to be broad-minded, creative, and open; they need to challenge the status quo and have the courage to be innovative using research and international experience to develop Espoo as an economically, environmentally, socially and culturally sustainable manner;

<sup>12</sup> <https://6aika.fi/en/city/espoo-2/>

<sup>13</sup> Espoo conducted Voluntary Local Review (VLR) about the SDGs/Agenda 2030 in 2020: <https://www.espoo.fi/en/city-espoo/sustainable-development/sustainable-development-goals/espoo-voluntary-local-review-vlr>

<sup>14</sup> As a step toward the City Vision 2050 that will be defined for each LH and FC in the Work Package 1, Deliverable1.11 and synthesized in a comprehensive document, covering urban, technical, financial and social aspects. A draft version developed by M12 (October 2020) has been considered. The final vision, fed with the inputs from the tasks and deliverables, will be finalized in M60.



- Espoo is fair: people need to be open and treat each other with equality, humanity, and tolerance. Hence, the city plans to attract enterprises and innovative businesses and maintain an open, participatory city administration based on trust and collaboration. According to the Espoo Story, key objectives in 2017-2021 have included: increased public participation, building upon the dynamic culture and economy, sustainability, and citizen health.

As far as sustainable development is concerned Espoo intends to reach carbon neutrality by 2030 and reduce overall emissions 80% in comparison to 1990<sup>15</sup>. In 2018, Espoo joined the Covenant of Mayors for Climate and Energy 2030, though its goals surpass even those of the over 1000-city movement. In addition, Espoo is a part of UN's SDG City Leadership program, acting as an official pioneer for goals 4 (quality education), 9 (industry, innovation and infrastructure) and 13 (climate action). The city is planning to reach all SDG targets by 2025 to demonstrate the ability for other cities to follow suit.

To achieve this vision, four cross-administrative development programs have been established as platforms that allow the city, together with its partners, to develop innovative solutions through experiments and pilot projects in line with the Espoo Story 2021-2025. The four cross-administrative development programs are:

- The Dynamic Espoo development program;
- The Healthy Espoo development program;
- The Sustainable Espoo development program;
- The Events together in Espoo development program.

Just to compare, in Espoo Story 2017-2021, the development programs were:

- A participatory Espoo
- Inspiring, dynamic Espoo
- Sustainable Espoo
- Healthy Espoo

The projects of each cross-administrative development program help find solutions that will allow Espoo to reach the SDG targets such as low-carbon mobility, clean energy and circular economy, while facilitating the daily life of Espoo residents and tackling the future challenges of a smart city. The goal of the City of Espoo is to find local solutions for solving global challenges.

#### **4.2 Stakeholder engagement: Sustainable Espoo development program**

The Sustainable Espoo<sup>16</sup> development program is currently in its third wave for the period 2021-2025. Under the program the three big targets for Espoo are:

- maintaining the status of most sustainable city in Europe;
- becoming an SDG city by 2025;
- being carbon neutral by 2030.

Within the Sustainable Espoo development program, the city has identified different working areas<sup>17</sup>, that are smart city solutions, climate action, and circular economy, and target benefits to achieve its goals, that is:

- smart city and digitalization with an emphasis on innovative solutions;
- low-carbon transport to revamp mobility;
- the Espoo goals go beyond just modifying generation;
- sustainable lifestyles through the personal responsibility of residents; and

<sup>15</sup> <https://www.espoo.fi/en/kestava-kehitys/espoos-climate-goals>

<sup>16</sup> The official Finnish name is Kestävä Espoo



- increased access to local nature for recreation to reinforce the importance of the efforts the city is making.

This is to be achieved in partnership with citizens, private sector, RDI institutions, universities, NGOs, national and regional government, international institutions and networks. The objectives set by the City Council for the Sustainable Espoo program 2021–2025 are:

- implementing, through extensive cooperation with partners, innovative, local and sustainable urban solutions that will serve as global examples of how to achieve carbon neutrality and protect biodiversity;
- developing and spreading activities that will open Espoo, its developing areas and nature solutions as an increasingly interesting research and development area for companies and research institutes;
- creating a roadmap for the climate work done by the city and together with the Espoo community, assessing and strengthening its carbon handprint and supporting in a significant way the achievement of carbon neutrality goal included in the Espoo Story;
- contributing to strengthening all aspects of sustainable development in the city corporate group's operations and creating solutions to ensure that the UN's Sustainable Development Goals (SDGs) are achieved in Espoo and other cities.

The Sustainable Espoo development program is promoted by a Steering Group composed by 10 council members representing all parties present in the Council, 9 office holders including the Mayor, and a few permanent experts, which coordinate and manage its workings through a Sustainable Development Unit within the Strategy Department of the City of Espoo.

The Steering Group meets ca. five times a year and agrees on projects that need to be developed to achieve the targets set by the Espoo Story. The team within the Strategy Department which coordinates the work was initially a small unit composed by 3 people within the Technical and Environment Department. Between 2017 and 2021 it obtained more funding, hired more people, and became the Centre of excellence for sustainable development<sup>17</sup> with 30 people directly under the Mayor office, which increased its relevance for the City and made it more influential, central to decision-making, and effective.

This growth and institutionalization allowed it to manage more and more projects decided by the Steering Group. For example, in 2018 a total of 23 projects were developed. For each project the Steering Group sets, and Centre of excellence for sustainable development manages, task forces and working groups composed of anywhere between four and ten people representing top municipality officials and senior civil society experts, such as the top management of utilities, research outfits, etc.

Projects have yearly targets, which are regularly reviewed by the Steering Group, because conditions may change especially when dealing with fast changing technologies and innovations and to ensure progress towards the overall objectives set by the Sustainable Espoo development program and the Espoo Story.

The projects of the Sustainable Espoo development program have focused on:

- creating urban districts where clean and smart solutions can be developed and tested;
- promoting digitalization and developing smart city ecosystems using 5G smart poles and IoT applications together with Nokia and other industry leaders;
- developing new operating models for circular economy to promote the development of business activity, sustainable economic growth, and sustainable lifestyles;
- working together with local stakeholders to develop commercial energy, mobility and ICT solutions for positive energy districts as EU Lighthouse City within the SPARCS project and beyond;

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<sup>17</sup><https://www.espoo.fi/en/kestava-kehitys/centre-excellence-sustainable-development>



- promoting low carbon transport and developing travel chains by improving business opportunities of companies enabling trials of new mobility services, travel chains, autonomous buses and electric means of transport.

### 4.3 Stakeholder engagement analysis

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The city has implemented a participatory approach to the Sustainable Espoo development program with over 200 external stakeholders involved in 2021 beyond internal stakeholders from the City of Espoo. Internal and external stakeholders are engaged in three different formats:

- a. the Steering Group which establishes projects and their targets based on the City Council's decisions and is composed by council members, office holders including the Mayor and some permanent experts, including representatives from the Centre for Sustainable Excellence;
- b. small task forces and working groups each responsible for specific/thematic projects with 2 to 5 top officials from the municipality and 2 to 5 top managers from utility companies, research institutions, expert associations, etc., with expertise and capabilities in the specific field;
- c. larger gatherings such as seminars and world cafes with citizen associations, business representatives, etc.

They are organized both at project level and for the overall Sustainable Espoo development program.

Their format may change:

- most of them have an informative function because most are supported by European funding which require result dissemination
- some of them have helped authorities shape the next steps especially in the initial phases of an initiative.

They helped the City of Espoo, particularly the Steering Group, appreciate the issues that were important for the community and helped shape its strategies. Currently, the community is mostly informed of the progress made with respect to the objectives of the Sustainable Espoo development program and the Espoo Story and at times it is engaged to debate new issues and help inform new initiatives.

Therefore, in terms of the level of the policy cycle in which stakeholders are engaged, co-commissioning based on decisions made by the City Council is a prerogative of the Steering Group; all engagement formats are involved in the phases of co-designing and co-assessment, while co-delivery is demanded to task forces and working groups.

As far as accessibility is concerned, which stakeholders can participate (the “width” of engagement) and to what extent they can influence the decisions at stake (the “depth” of engagement) vary in the different formats, but they tend to be demanded to a higher authority: the City Council decides which Council members participate in the Steering Group and what they can decide upon; the Mayor chooses the office holders for the Steering Committee on the suggestion of the Centre of excellence for sustainable development; the Steering Group decides who participates in the task forces/working groups and their targets; the Centre of excellence for sustainable development decides who to invite to larger gatherings and what their role is.

However, in larger gatherings involving the entire community of Espoo invitations have often been more flexible, some stakeholders have been able to suggest others, and citizens have been able to participate more freely, which has increased the number of external stakeholders engaged to 200. Within each format the engagement process is open with stakeholders being able to influence agendas and set-ups building consensus, yet outputs and targets are decided upon beforehand to ensure the engagement is worthwhile.



Therefore, there is no properly institutionalized structure for stakeholder engagement, but a more flexible system with some management elements and some more formal set-ups. Such arrangements are particularly appreciated because different stakeholders have different roles in the engagement process, have clear goals, and are given the opportunity and flexibility to carry them out. For example, external stakeholders welcome the independence and effectiveness task forces and working groups enjoy once tasks, composition and targets have been decided upon by the Steering Group.

The representative of one of the top utilities remembers that once the Mayor explained the aims and perimeter of a particular project as defined by the Steering Group to the task force composed of top officials from the municipality and from the utility company. At the end of the meeting a handshake about key performance indicators with no formal contract was sufficient to get the ball rolling: the task force would work at the project with no further interference and progress would be reviewed every year to ensure targets would be met.

Stakeholders appreciate the support and networking they can gain through these engagement processes. External stakeholders value that their activities are in line with the City's strategy and that the political, administrative and legal obstacles they might normally encounter are reduced to a minimum when carrying out projects under the Sustainable Espoo development program.

Stakeholders appreciate the involvement in such projects: they may gain easier access to external funding, such as from the European Union. Even if this is a secondary motive because utility companies generally have (or can easily gather) funds which they invest in projects, which are secured by public authorities. In addition, European and similar funding programmes tend to be slow. Projects running under the Sustainable Espoo development program must be profitable and have targets to be met in the short and medium term, that is 1 to 4 years.

Looking at the ecosystem's value the engagement process has managed to:

- achieve shared decisions
- increase efficiency with more effective cooperation among stakeholders and lower costs for more sustainable services in the long run
- improve trust among engaged stakeholders so much that their number has increased.



Table 6 - Summary findings according to the analytical framework

	Dimension	Component	Finding
Value creation	Internal value	Associational value (visibility/support)	Yes
		Transferred value (increased resources)	No, only long term
		Interaction value (Learning/network access)	Yes
		Synergetic value (innovation/change)	No
	External value	Shared decision	Yes
		Trust building	Yes, retention
		Efficiency	Yes
		Quality	Enhanced sustainable services
Arrangements	Phase in policy cycle	Level of coproduction	Depending on engagement format: -Co-commissioning: Steering Group -Co-design: all -Co-delivery: task forces/working groups -Co-assessment: all
	Accessibility	Width of engagement	Authority decides, some exceptions for larger gatherings
		Depth of engagement	Authority decides, yet working by consensus
	Formalization	Of the process	No, in each format members decides by consensus
		Of the output	Yes, yet working by consensus
	Coordination	Device	Mixed structure and management

**Stakeholders recognize that the engagement process improved the quality of services which has allowed to achieve a cleaner and more sustainable city; these positive results have led to a growing stakeholders' involvement over time.**

#### 4.4 Critical issues

From the interviews with external and internal stakeholders some critical issues have emerged:

- ✓ For the process to be effective enough decision makers needed to be involved: over time it was important that the Steering Group included more council members representing all political forces in the Council;
- ✓ Now, however, the Steering Group is far too large, making decisions has become more complex, and not all members always manage to say something during a meeting; hence a steering committee made up of the Chair of the Steering Committee, her/his deputy, and the representative from the Centre of excellence for sustainable development, meet beforehand to decide upon agendas, procedures, and outputs;
- ✓ Office holders often did not participate in the Meeting of the Steering Group as they felt the political side would take all decisions anyway; to stimulate their engagement, they have been given more responsibility and formal tasks, such as presenting issues, reports, etc., during the Steering Group meetings;



- ✓ Traditions and the way of doing things stakeholders are used to at times clashed, influencing negatively and slowing down the process; it would have been easier to select open-minded people to get involved in the engagement process giving them the necessary authority;
- ✓ The involvement of the community at times seemed more of a public-relation or funding-requirement exercise than a genuine effort to engage citizens directly; hence, in 2022 a project on citizen engagement has started<sup>18</sup>;
- ✓ Some funding for the current expenditures of the Centre of excellence for sustainable development is gathered from own resources, but most funding comes from European sources and therefore the Sustainable Espoo development program ends up being organized in projects which rely on external funding which help pay even most of the employees within the Centre of excellence for sustainable development;
- ✓ Information has not always flown fluently within the City of Espoo because of different interests, workloads, and so on; more and more internal communication has been centralized under the Centre of excellence for sustainable development to make it more efficient and effective.

#### 4.5 Lesson Learnt: Espoo

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Groups of key stakeholders need to be clearly identified. In Espoo, three key groups of stakeholders have emerged in the engagement process in what can be described as a triangular approach:

- the City of Espoo with its top officials, council members, and Centre of excellence for sustainable development;
- utility companies with their top managers;
- citizens and businesses represented through their associations.

Different stakeholders have different roles which need to be respected and promoted:

- public authorities representing a community have the right and duty to set goals and the overall strategies to achieve them
- citizens and the community at large should influence and assess such priorities and their fulfillment
- utility companies have the expertise and are better at running plans and projects to operationalize those strategies, whose implementation would often become too cumbersome and bureaucratic if left to public officials and would often take too much time if the citizens were directly involved.

One fundamental trade-off to keep in mind when designing the engagement system is that smaller groups are more effective in operational terms, even though a larger engagement as representative as possible is needed for building consensus and gathering political support. One potential solution is to design two separate forums to address both needs.

Flexible agreements such as memoranda of understanding or umbrella frameworks may be more effective than strict contracts, as they allow each stakeholder the flexibility to carry out its tasks following the approach it believes best.

People involved in an engagement process need to have the necessary authority, but also the right mindset; top managers are not always the right solution, especially if the process is innovative and a stakeholder is rather traditional in its approach and organization. Targets and key performance indicators should be set from the very beginning and monitored regularly, especially in a fast-changing

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<sup>18</sup> As a matter of fact, there has been citizen engagement in previous projects as well, but this is the first Sustainable Espoo project explicitly focusing on citizen engagement (in sustainable development issues).



environment. The structures that run the day-to-day operations for stakeholder engagement need to be close to top decision makers and bodies to be influential, central to decision-making, and effective.

## 5. THE EXPERIENCE

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### 5.1 Stakeholder engagement, smart cities and sustainability issues

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Global, interconnected and chronic problems such as ensuring sustainability present ‘wicked problems’ that require connected actions by industries, citizens and governments. These problems combine high complexity with a limit to the direct actions that government can take. Furthermore, the most effective actions are likely to be ones that are integrated and coordinated across all levels.

The evidence about their impact is uncertain and all the policy choices open to governments carry levels of risk that are often difficult to quantify. These policy choices will have significant, yet varied, impacts on different groups of citizens and businesses and will create short-term winners and losers even if society is better off years down the line. Anderson et al (2010) contend that existing engagement processes have tended to struggle with these types of problems.

The choice about whether to deal with an issue, as well as how to deal with it, is based more on values and priorities than on expert advice or ‘hard’ evidence. Traditional decision-making structures are ill-suited to build the consensus needed to chart a course to a shared destination.

This summary of aspects of stakeholder engagement and some of the issues related to its use shows how these techniques can be helpful in endeavours to engage stakeholder in smart cities and sustainability issues. Stakeholder engagement is a process, which brings together parties with a common interest and allows them to work together through information sharing and the development of ideas to find solutions to problems which have proven to be too difficult to resolve by government, people or organizations working in isolation.

Stakeholder engagement is a technique often used in a context of democratic public decision making and the tools used can be effective for bringing stakeholders together and enable a process of innovation. A big part of the wicked problem of engaging external stakeholders in smart city and sustainability strategies is getting them to engage in the first place. If the promise of stakeholder engagement is that it can bring positive outcomes, then this makes that engagement more likely. Nevertheless, it is important to recognize the perspectives and motivations of external stakeholders in relation to being engaged in smart cities and sustainability issues.

Implementing new and innovative stakeholder engagement processes, which attempt to bring Smart Cities and their external stakeholders together pose a range of challenges, from methodological issues of ensuring that information is presented fairly at the multiplicity of meetings, to developing ways to prevent capture by one or other participants of the debate, to developing effective mechanisms for feeding results of events into the policy process and back to participants. Evidence from case studies suggest that to be successfully implemented these engagement approaches need to be devolved, well promoted, collaborative, open rather than closed, mixed methodology and influential.

### 5.2 Evidence from the Lighthouse Cities

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The case studies of the City of Espoo and Leipzig, carried out through a specific analytical model have led to important inputs for establish an efficient stakeholder engagement.

In principle, it is important to recognize stakeholders of different nature (municipality departments vs. public utilities vs. experts) and at different levels (decision-making vs. working/organizational level) and offer the right engagement formats. This could lead to establish different fora for the general public and the specialists.



As such, groups of key stakeholders need to be clearly identified because different stakeholders have different roles, which need to be respected and promoted:

1. public authorities representing a community have the right and duty to set goals and the overall strategies to achieve them;
2. citizens and the community at large should influence and assess such priorities and their fulfilment;
3. utility companies have the expertise and are better at running plans and projects to operationalize those strategies, whose implementation would often become too cumbersome and bureaucratic if left to public officials and would often take too much time if the citizens were directly involved.

Concerning local authorities, it is crucial to involve both elected and unelected officials; specifically, it is necessary that key elected officials support both the engagement process and the issue around which the engagement process is built. People involved in an engagement process need to have the necessary authority, but also the right mindset; top managers are not always the right solution, especially if the process is innovative and a stakeholder is rather traditional in its approach and organization.

It is fundamental to design how to link the stakeholder engagement structure to the formal structure of the municipality and its procedure. The structures that run the day-to-day operations for stakeholder engagement need to be close to top decision makers and bodies to be influential, central to decision-making, and effective. The unit tasked with managing the engagement process needs to be endowed with a sufficiently large budget and staff and cannot be too detached from the municipality's formal organizational structure and decision-making procedures.

One fundamental trade-off to keep in mind when designing the engagement system is that smaller groups are more effective in operational terms, even though a larger engagement as representative as possible is needed for building consensus and gathering political support. One potential solution is to design two separate forums to address both needs.

The organizational arrangements designed to engage stakeholders need to be flexible so to be modified according to the critical issues which emerge. As such, flexible agreements such as memoranda of understanding or umbrella frameworks may be more effective than strict contracts, as they allow each stakeholder the flexibility to carry out its tasks following the approach it believes best.

Targets and key performance indicators should be set from the very beginning and monitored regularly, especially in a fast-changing environment. Efficiency needs to be verified in the long run, to justify an engagement process which usually requires greater resources initially but guarantees a smoother, faster, and more cohesive implementation and delivery phase. It is necessary to think of all risks and consider alternative options in case of major events, such as a pandemic, to be able to continue to successfully engage stakeholders.

## **6. DEVELOPING A PARTICIPATORY GOVERNANCE MODEL**

### **6.1 Why develop a stakeholder engagement approach?**

As discussed throughout this document, by working together through a stakeholder engagement approach, public authorities can combine their expertise to benefit the planning process. Local authorities can liaise with local communities and provide local knowledge which can determine the achievability of the plans that are developed. This can achieve multiple benefits, helping authorities to:

- Ensure coherency between local and higher-level plans: a collaborative process can help to integrate plans and policies at higher and local levels (for greater efficiency)



- Develop clear and consistent visions: sharing knowledge and ideas between authorities can enable ambitious and realistic visions to be created. Proper attention is paid to local realities, alongside the strategic needs (helping to achieve targets)
- Establish more favourable financing mechanisms: partnering up with other authorities can create more secure and stable conditions to attract investment
- Communicate more effectively: defining objectives collaboratively ensures that messages are harmonized between stakeholders (avoiding confusion)
- Establish consistent monitoring and reporting tools or reporting structures, to ensure plans are monitored more coherently
- Share expertise, skills and knowledge: this can fill important skills gaps in the planning process and facilitate the spread of good practices and innovative actions.
- Resources, skills and techniques can be pooled: through joint-working different skills, planning techniques and resources can be combined to make limited resources go further, taking advantage of economies of scale, for instance through joint procurement or to access a specific energy planning tool. This can save time and ease workloads as local authorities 'share the load'
- Agree clear roles and relationships: this can create better ownership for actions
- Better manage resource conflict: collaborative working facilitates the link between spatial and sustainable energy planning processes. This can support the development of climate-friendly spatial planning procedures

It is about effective decision making. It is about empowering local governments and their stakeholders to take shared ownership. It is about listening, sharing knowledge and delivering results.

## 6.2 Implementing stakeholder engagement: a step-by-step methodology

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A city can adapt this methodology at any time to suit its local circumstances. For instance, depending on the scope of the project, timeline and budget, the local authority may decide to implement some activities in parallel.

Three main steps are proposed:

### 1. Initiate the collaborative process

- A) Identify the local authority's needs
- B) Identify key stakeholders
- C) Identify their level of participation
  - C1) Informing stakeholders about the collaborative process
- D) Develop a common vision and objectives

### 2. Developing the stakeholder engagement model

- A) Define the coordination and governance processes
- B) Develop the engagement strategy
- C) Define responsibilities and decision-making process
  - C1) Ensuring transparency in the decision-making process
- D) Define the evaluation process

### 3. Implementing the engagement model

- A) Mobilize stakeholders and formalize their commitment
  - A1) Formalizing the commitment
- B) Evaluate and improve the engagement model
  - B1) The benefits of evaluation



- B2) Collecting data
- B3) Improving the collaborative approach

### Step 1. Initiate the collaborative process

This preliminary step serves to identify stakeholders and engage them in the process to develop a common vision, joint objectives, and expected results. It is advisable to identify the different needs of the various stakeholders involved. This can provide an initial draft of the vision which will evolve as other stakeholders become involved.

#### A) Identify the local authority's needs

Several tools could be used to bring together those who can define the needs of the local authority. This depends on the structure of the local authority but could include creating:

- Internal cross-functional working groups
- An internal network of advisers/observers (to support the working group)
- Internal information campaigns

To define the motivations and objectives at the local level, ask:

- Do we want to develop specific tools?
- Do we need a collaborative approach in a specific area?
- Is this an experimental or generalized approach?
- What are our expectations for this approach?

#### B) Identify key stakeholders

Once local authorities' needs have been established, discussions among other key stakeholders (the local authorities as a minimum) should be held to bring their needs to light and develop a common vision of the objectives and expected results.

There are numerous benefits to involving different stakeholders at this stage:

- Improve the quality of the decisions, by benefitting from stakeholders' expertise at the very start
- Help to identify controversial issues or difficulties before a decision is made
- Bring together stakeholders with different viewpoints and help different parties find common ground, reducing the risk of opposition in later phases
- Reduce delays and costs in the implementation phase
- Better inform stakeholders about the objectives and the issues at hand
- Lead to better acceptance of the decisions and measures that are taken
- Increase the confidence of the public about decision-makers
- Help more stakeholders commit to action, so that more ambitious goals can be agreed

Involving key stakeholders, and keeping them engaged and informed throughout the process, is one of the keys to the success of the collaborative process. Therefore, it is important to identify the types of stakeholders to engage with, and their roles in the process. The roles and motivations of stakeholders will change depending on their expectations, the resources at their disposal, and their willingness to be involved.

The identification of key stakeholders will help to determine the degree of openness (which information should be communicated, and how widely) to maintain with stakeholders and start to determine the governance process that should evolve to achieve the visions and objectives.

Key stakeholders' identification should depart from the categories included in the well-known Quadruple Helix approach. Empirically, the approach has been followed by the experiences learnt from the case studies. The QH is an innovation and collaboration model with a citizen/end-user perspective that involves representative public authorities, industry, academia and citizens.



More specifically: public authorities include government and regional development agencies and other policy makers; industry consists of businesses as well as business clusters; academia includes universities or research & development bodies; citizens, finally, are single individuals or civil society organizations. Within these broad four categories it is possible to identify:

1. Primary stakeholders – those who are (positively or negatively) affected by the issue
2. Key actors – those who have power or expertise
3. Intermediaries – those who have an influence on the implementation of decisions, or have a stake in the issue

It is therefore critical to thoroughly understand the expectations and plans of local authorities and to help them build ownership of the process through joint efforts to achieve the expected results.

The local authority can request help in identifying stakeholders from partners with whom it regularly works on sustainability issues of interest. The local authority can also rely on organizations with expertise in regional or national planning. Thus, regional or national agencies are often involved in several governance agreements for sustainability plans and initiatives.

### C) Identify the level of participation

Identifying how to involve stakeholders in the visioning stage (the scope of intervention) and the level of openness it has with them is key.

To determine this, the local authority will need to conduct a thorough analysis of the different stakeholders. This could cover:

- The role and mission of the organization
- Existing relationships with local authorities
- Their competencies and ability to provide value-added assistance (technical expertise, financial capacity, communication between target groups, support to target groups)
- Their ability to influence their environment (opinion leaders)
- Their availability, and willingness, to become involved
- Their expectations or requirements regarding the project

People must also be involved at the right time; that is, when they are able to make a value-added contribution. Structures, as well as individuals, must also be clearly identified to get them involved in an appropriate and timely manner. Different degree of involvement is possible (Nabatchi et al., 2017):

- Co-develop: invite stakeholders (elected officials, technical experts, citizens, etc.) to jointly develop a project, starting with the collective analysis of an issue. Pedagogical tools should be used to ensure that everyone can actively contribute
- Dialogue: present a specific project and request input, to make changes to the project if needed. The authority may justify any decision that doesn't take the public's suggestions into account. This helps stakeholders accept the project
- Consultation: consult with the public to get their input. This doesn't necessarily imply that the authority will take the input into account or provide a response
- Information and awareness-raising: inform citizens, stakeholders, and the public about the project, without expecting a response. Minimum level of participation is maintained

In general, the higher it goes up the list, the more engaging the method is – but the process involves less people. Therefore, if it merely want to issue information, 'Information and awareness-raising' is useful, whereas if it want stakeholders to take ownership of actions in a strategy, it is advisable to use 'Co-develop' or 'Dialogue'.

Depending on the context and the number and types of stakeholders, several tools can be used to help identify key stakeholder's needs and expectations. These could include use of different tools: one-on-



one meetings; workshops or seminars; a working group to consult specific stakeholders; organization of a citizen day with a panel; or, for instance, an online survey<sup>19</sup>.

Benefits	Survey	One-on-one	Multi-stakeholder meetings consultation
A range of inputs	X	X	X
Increased stakeholder satisfaction with the final decision	X	X	X
An opportunity for real dialogue		X	X
An opportunity to build consensus			X
An opportunity to build ownership of the project and its objectives		X	X
An opportunity for participants with different opinions to talk with and learn from one another			X
An efficient use of time	X		X
Inexpensive (if no travel is required)			X

Table 7 - Comparative analysis of the three main types of consultation

### C1) Informing stakeholders about the collaborative process

Key stakeholders will need to be informed about the collaborative process being initiated by the local authority. Most often, this will take the form of a consultation phase conducted by the local authority that will involve at least other administrative levels such as national (when possible) and local authorities. Information tools that could be used to communicate about the launch of the collaborative process:

- Information on the local authority's website, partners sites, or a dedicated site
- Press releases, mailings, videos, social media
- Sharing information during events – or launching the approach at a special event

This launch of the process should provide context that will allow stakeholders to understand and take ownership of the issue. Therefore, it is extremely important to use clear and simple language. The objective is to inspire people to participate and to win them over. The approach should remain positive, reassuring and focus on realistic opportunities to act, rather than presenting distressing information about sustainability.

### D) Develop a common vision and objectives

Once stakeholders have been informed about the collaborative process, the local authority will organize consultation activities to finalize the common vision and objectives for the city. During this phase, collaborative work with local authorities begins. This phase must also identify the kind of support that is needed to reach these objectives.

Holding multi-actor consultations during this phase makes it easier to develop a common vision and brings up issues that may be controversial. At this point, it is advisable to create an operational steering committee with representatives from local authorities, institutional bodies, and other key players.

<sup>19</sup> Adapted from CIVITAS handbook "Involving stakeholders: toolkit on organising successful consultations"



The committee will analyse the stakeholders' objectives to more clearly define the collaborative process by answering the following questions:

- What are the objectives of the collaborative approach?
- What are the expected results?
- What kind of support is needed to reach the objectives?

The "SMART" method is often used to define objectives:

- S for specific
- M for measurable
- A for accessible
- R for realistic
- T for time-related (short, medium, or long-term objectives)

At this point, political approval of the common vision and objectives is necessary. This political statement will be widely communicated at local levels and highlight the joint development of the common vision and objectives.

## Step 2. Developing the stakeholder engagement model

Once the outline of the collaborative process has been drawn up (common vision, objectives, support tools, expected results), several steps will need to be implemented to develop the most adequate and efficient engagement model.

During this step, a more detailed analysis of the stakeholder engagement process and governance mechanisms will be carried out, in a joint manner, to define the most appropriate governance structures, decision-making processes, and operational methods to use.

### A) Define the coordination and governance processes

The engagement mechanisms will need to be adapted to the local context based on the common vision and objectives (defined in Step 1), the importance or scope of the project, and the influence and expectations of stakeholders.

Local governments have an important role to play to:

- Supervise and coordinate the process. This could be assigned to an operational steering committee (if one has been formed) or to a dedicated agency or unit
- Ensure the governance model has clear objectives that are effectively monitored
- Coordinate interactions between the different governance levels (e.g., facilitate meetings; propose the methodology for the work; the frequency of communications)
- Ensure responsibility within the model (propose a reporting structure; agree roles/responsibilities; identify how decisions are made; how issues are escalated etc.)

The authority (or operational steering committee) must determine the most appropriate governance structure (stakeholder engagement model) to use. The operational methods must also be clearly defined and then explained to stakeholders:

- The project timeline (start date, key steps, etc.) and objectives
- The forums for discussion (e.g., meetings, networks, formalized partnerships)
- The duration and frequency of meetings (a tentative timeline can be presented)
- The resources that are available (information, working papers, etc.) and the expected results

To set up an effective engagement model, the following 2 rules must be kept in mind:

- Limit the number of committees and discussion groups to avoid wasting too much time coordinating all their activities



- Clearly identify the functions, composition, and relationships between the different levels of the governance system

To set up an effective engagement structure in the city:

- Use or adapt existing governance structures or energy planning processes (e.g., an existing meeting; steering committee; or network of local authorities). This can avoid duplication and take advantage of existing momentum
- Use or create a political steering committee to engage elected officials through the process and facilitate the implementation of decisions
- Use thematic or territorial working groups to look at specific or technical areas of its energy planning
- Use a simple governance structure that can be easily understood. Schematics and diagrams can help to communicate the structure clearly to everyone involved
- Have clear lines of accountability and reporting to create ownership for actions and facilitate delivery
- Encourage stakeholders to participate outside of specific groups, e.g., hold information meetings; consultations; exhibition; or events focused on a specific theme
- Use public perception surveys and public consultation as tools to assess the public's views on energy and environment issues
- Include different administration departments (transport, economy, health, etc.) in the engagement structure to help involve them in sustainable issues

## **B) Develop the engagement strategy**

Cooperation is not self-regulating; different stakeholders do not participate on equal footing and their contributions and limits must be determined to shape the governance process. It is therefore helpful to develop a strategy for how to engage and consult key stakeholders and decision-makers in the process.

Stakeholders, beyond the ones already involved during Step 1 (when developing the common vision and objectives), should be invited to join the collaborative approach (e.g., additional local authorities; spatial planners; data providers; financial partners; or citizens). The stakeholder engagement strategy should answer:

- Who should get involved and why?
- When should they get involved?
- What will be the level of engagement of each group of stakeholders?
- What will their roles and responsibilities be throughout the entire process?
- What will the schedule and budget look like?

As for the development of the strategy

- Consider the different interests, resources and capacities of stakeholders
- Provide sufficient, transparent, information. This enables informed stakeholder involvement and prevents negative perceptions (such as secrecy or corporatism)
- Implement follow-up mechanisms to ensure that stakeholders' views are taken on board, and can be fed back into the decision- making process
- No one size fits all – different involvement techniques (such as the 4 levels of participation explained in Step 1) must be adapted to the type of stakeholder. For example, SMEs may be hesitant to get involved due to limited resources (time, means, etc.). Specific discussion groups that are adapted to these constraints (breakfast or lunchtime meetings, for example) could be held
- Efforts should be made to work with authorities that are less aware of the issues or more hesitant to act e.g., it could collect their feedback by questionnaire
- Remember that stakeholders must become involved at the right moment i.e., when their views can provide added value and can be considered. Stakeholders do not need to be involved in every decision-making process



**\*Useful tools for engagement:** The influence-interest matrix<sup>20</sup>

According to the SPARCs overall goal the energy is the KEY factor. As such, to roll out an urban energy transition that interact with citizen and buildings, it could be useful to exploit the influence-interest matrix, that would help in mapping and categorizing stakeholders according to their stake in the sustainable energy planning topic, as well as their influence. Clustering its stakeholders in this way can help to identify potential conflicts, gaps in the stakeholder selection, and determine how best to engage the stakeholders. It is most important to engage with stakeholders who have a high degree of influence/stake in the work. Stakeholders with a low level of influence/stake may require less involvement.

	Low influence	High influence
Low stake	Lowest-priority stakeholder group	Useful for decision making opinion forming and brokering
High stake	Important stakeholder group perhaps in need of empowerment	Most critical stakeholder group

Table 8 - The influence-interest matrix

### C) Define responsibilities and decision-making process

This step consists in specifically defining the responsibilities of each participant, as well as the decision-making process:

- How is the decision taken?
- Who makes the final decision?

The local authority is responsible for providing easy-to-understand information about the project and the governance agreement. Specific rules must be defined for each stakeholder’s responsibilities and level of participation in the decision-making process.

Responsibility (accountability) is a key aspect for building trust and supporting the governance process. Stakeholders should clearly understand their role and be responsible and accountable for their actions, activities and decisions. The effective exercise of responsibilities includes:

- Transparency of the information
- Clearly stated rules concerning relationships between different groups of players (particularly between the public, politicians, local officers etc.) – and their responsibilities
- An independent review of results, or in the absence of such, the need for controls

#### C1) Ensuring transparency in the decision-making process

Governance processes are often intended to nurture policy developments and decision making through ideas, perspectives, and expertise. However, to avoid frustration and mistrust in the governance process, it is important to clearly state when the work of consultation groups will end, and to identify the decision makers and the people responsible. This is a condition for effective governance.

This must be clarified at the start; for example, by defining the general governance framework and the reporting structure (hierarchy) between different groups participating in the process, and by informing the intervening parties and the general public on the different steps leading to the decision.

### D) Define the evaluation process

The governance mechanism (engagement model) that has been chosen should be evaluated to ensure that the collaborative approach has been successful and to make any necessary improvements. A list of

<sup>20</sup> Adapted from: UN Habitat 2001, p.24



indicators should be drawn up at this point to ensure results can be compared against objectives, and any data that is required to evaluate can be collected.

The evaluation might include the following aspects:

- Ability to achieve the objectives and expected results
- Comparing the governance agreement to existing models or traditional collaborations
- Effectiveness given the allocated resources and means (budget, expertise, etc.)
- How well it has been accepted both internally and externally

Particular attention must be paid to the choice of indicators, for they are above all a means of communication between all the stakeholders involved in the process. They help summarize and simplify complex ideas to present them to a diverse range of stakeholders. Indicators are useful for providing information, but also facilitate decision-making.

This should be a collaborative evaluation that involves stakeholders and allows for continuous improvement of the process. The frequency and schedule of the evaluation should also be defined, such as once a year.

### Step 3. Implementing the engagement model

in this step a governance system must be established, which requires good communication and the active involvement of all stakeholders throughout the entire process. A participatory evaluation and continuous improvement of the process is implemented.

At this stage in the project, the collaborative process has already been initiated. So far it must:

- Involve key stakeholders, including local public authorities, in developing a common vision and objectives (Step 1)
- Identify other key local stakeholders to ensure the vision and its project is supported across political and officer-levels
- In a co-design, develop and adapt suitable engagement mechanisms and processes (Step 2)
- Collaboratively develop a method for evaluating the process (Step 2)

#### A) Mobilize stakeholders and formalize their commitment

Some key stakeholders were already involved in the design of the common vision, objectives and engagement processes. This implementation phase is now about carrying out the actions planned within its stakeholder engagement strategy, to get their buy in and formalize their engagement.

To guarantee the transparency of the governance model and ensure widespread stakeholder participation (two of the pillars of “good governance”), the following elements must be explained to all stakeholders:

- The objectives of the governance model
- The expected results
- How the agreement operates and is organized (timeline, meeting frequency, types of discussion forums, etc.)
- The responsibilities of participants
- How contributions are considered during the decision-making process
- The evaluation methods

Depending on the objectives and the stakeholders that are involved, information about how the governance model functions can be provided during a seminar - after which stakeholders will have the opportunity to sign a pledge of commitment.

Information can also be provided via traditional channels e.g., websites; local media; presentations during events throughout the area; social networks; and mailings.



### **A1) Formalizing the commitment**

The commitment of all stakeholders involved in the process is critical, to ensure the collaborative approach is successful.

In most of the collaborative processes that were studied, stakeholder participation was formalized in some way, such as a resolution, a multi-party agreement, a participation charter, etc. It is therefore worth considering implementing the following activities to gain commitment for the multi-level, collaborative approach:

- Compile all information about the governance model in a single document that can serve as a reference for all stakeholders. This document can be signed, following an informational meeting about the process, to formalize stakeholder commitment
- For all stakeholders to contribute to the collaborative process, a “learning phase” may be necessary. Stakeholders need to fully understand the context of the process, the issues involved, and the work that has already been done. The authority could also present similar actions taken in other cities
- In some cases, training sessions may be useful. They may even be necessary when specific skills or knowledge is required to understand the issues at hand
- To ensure effective participation throughout the entire process, it is critical to share information about the project, its progress, and to take stakeholder contributions into account. Stakeholders must be regularly informed about the ways in which their opinions, concerns, and/or suggestions have been considered, as well as the progress that has been made since the beginning. Meeting minutes and reports on different actions should be written up and shared with participants.

### **B) Evaluate and improve the engagement model**

The evaluation of the governance framework may be useful - especially because indicators (e.g., number of participants in meetings; number of publications distributed; decisions made or not made, etc.) may be insufficient to assess governance.

Governance processes must be examined as whole elements and must be open and advanced. This may be an external evaluation, a peer evaluation, or a self-assessment. The evaluation of the governance framework should include the following elements:

- Lessons learned
- The relevance of the governance framework (compared to other engagement governance processes or standard approaches)
- Its strategic positioning
- Its effectiveness: expected outcomes in terms of expectations and objectives
- Its efficiency with respect to dedicated resources and means (relationship between results and financial resources, expertise, organization, etc.)
- Its acceptance at internal and external levels

An identified course of action to improve the process

### **B1) The benefits of evaluation**

The evaluation can add value to the future governance of climate change action. Indeed, climate change is often an area of public policy where experiments are conducted (through the involvement of stakeholders, the organization of debates, or creation of new partnerships). However, the evaluation can also be regarded restrictively as a performance review. It is therefore important to clearly communicate the objectives of the assessment and to ensure that evaluators can carry out their analysis at all levels of the organization (including management and political levels) and beyond.



## B2) Collecting data

As the governance process progresses, data to measure indicators should be collected. Data for indicators related to the governance process will generally be collected at the end of the project, or following an event, using questionnaires or interviews with key stakeholders. A thorough definition of the evaluation process in Step 2 will ensure necessary data is collected.

## B3. Improving the collaborative approach

Depending on the frequency of the evaluation, the indicators should be evaluated to make improvements to the governance model. A committee could be set up to conduct an analysis and suggest changes. The results of any evaluations should be widely communicated.

Table 9 - Applicable 13-governance principles

Apply the 13-governance-principles
<ol style="list-style-type: none"> <li>1) Start to build a collaboration scheme only when there is a real need for it or a common vision.</li> <li>2) Be open and encourage bottom-up approaches, listen to what key stakeholders really need</li> <li>3) Involve and get clear and effective support from people and institutions with decision making responsibilities, or those who can influence the process</li> <li>4) Often working with busy individuals. They need to have a clear personal benefit to get involved. Make working life easier for them. Help them to save time or money in their personal field of work. Praise them for their efforts, much more than think would be necessary. Provide them with personal experience that makes them feel good or with possibilities to develop their career (mentorship, training, etc.)</li> <li>5) If there is a bias – e.g., if only the local level wants to collaborate or vice versa – it needs to give clear incentives to the other part</li> <li>6) Collaboration takes time – and it needs to. For each step, plan more time than is necessary</li> <li>7) To keep the momentum going, ensure that a first success is reached very fast, even if it is a minor one, the second one shortly after that etc.</li> <li>8) Trust between people/institutions/stakeholders: working together is key</li> <li>9) Do a lot of communication and keep the process going. Try to reach at least some visible results</li> <li>10) Communicate results: say it more often, clearer, simpler than ever thought it could be necessary!</li> <li>11) Celebrate successes with all who are involved</li> <li>12) Think about how politicians can benefit from the process and get their buy-in early enough</li> <li>13) Think about timing: for instance, when are the next elections and what does this mean for the project?</li> </ol>

## 6.3 Replicating engagement approaches in other cities

Several factors have been identified as essential for ensuring an engagement model can be effectively replicated from one city to another.

*Top tips for replicating engagement models:*

- A. Get commitment from decision makers to make replication happen.  
Officialise the commitment to work together in the long-term and commit resources to work together: this will ensure effectiveness share practice and techniques and have the time to implement them properly within city.
- B. Understand local contexts.  
It is important to understand the local context, governance structures and frameworks in both cities. Identifying differences and similarities will enable both partners to identify the most



realistic and effective way of replicating a model from one city to another. Allow extra time to build this understanding and communicate regularly, documenting what has been agreed.

- C. Resource allocation  
Budget for both time and for the costs of having some personal and remote meetings between partners. It takes time to build trust and to understand the partnership approach (engagement model) another city has taken. Don't forget to budget for implementing this engagement model and for follow-up!
- D. Meeting Organization  
Arrange smaller meetings where engagement models can be discussed in depth, with clear Q&A session and confidential conversations. Often more useful for replication models rather than big workshops or conferences. Well prepared prior communication between partners is a must to ensure rewarding work and results;
- E. Face-to-face communication  
While there are more and more tools for distance learning with each other, face-to-face meetings are helpful to build trust, enable clear communications and discuss in detail how good practice in one city can be replicated to the other;
- F. Sharing  
Share the lows as well as the highs – share any barriers or lessons learnt, as well as the successes of the model. Learning about what went wrong, why, and how this was overcome, is an effective exercise for determining how an engagement model can be replicated;
- G. Involve stakeholders early  
Consider involving external stakeholders in meetings early on – they will be more positive to replicating the model as a result;
- H. Be specific!  
Try to focus on one or two models to reach concrete results and make limited resources go further;
- I. Benefits  
Both cities – the learning process is rarely 'one-way' – and partners will learn from each other. However, exchanging knowledge with a very similar city offers more chances of equal and mutual learning, while exchanging with a dissimilar city might have more potential for innovation on both sides.
- J. Long-term collaboration  
Established contact will hopefully last and grow even after the implementation of one specific engagement model. To achieve this, look beyond the engagement model and be open to further fields of collaboration. This is really rewarding!

## 6.4 Checklist

This checklist serves as a handy reminder of the activities that can be undertaken to set up a collaborative, engagement approach to sustainable planning activities.

Step 1: initiate the collaborative process
I have determined which local authority departments need to be involved, and in what way.
I have discussed with the local authority, their vision, needs and objectives in relation to collaborative sustainable energy planning.
I have identified key stakeholder groups and defined how they can participate in defining the common vision and objectives.



I have involved key stakeholder groups (local authority as a minimum) in the definition of the common vision and objectives
On a scale of 1 to 5, I have mobilized stakeholders to co-develop the common vision... 1: not at all 2: somewhat 3: moderately 4: very 5: completely
On a scale of 1 to 5, I have mobilized local authorities to co-develop the common vision... 1: not at all 2: somewhat 3: moderately 4: very 5: completely
I have documented the objectives and expected results of the collaborative process
On a scale of 1 to 5, the objectives are “SMART”... 1: not at all 2: somewhat 3: moderately 4: very 5: extremely
On a scale of 1 to 5, the objectives consider stakeholders’ objectives and expectations... 1: not at all 2: somewhat 3: moderately 4: a great deal 5: completely
The local authority has politically validated the launch and objectives of the process (and this validation has been evidenced)

Table 10 - Checklist Step1

Step 2: developing the engagement model
I have identified existing governance structures or processes at the local level. These have been documented.
I have identified structures and processes that can be adapted to the engagement agreement (e.g., use of co-development over consultation)
Where an engagement process already exists, I have evaluated the governance agreement to make improvements during the engagement process revision process
I have documented the different components of the governance agreement (e.g., using a schematic to detail the different groups and reporting mechanisms)
I have documented the roles and responsibilities of all participants in the governance model and documented the partnership agreement
I have documented the evaluation of the collaborative process including who is responsible for monitoring the evaluation, its frequency, and how participants will be informed of the results
I have agreed indicators to: <ul style="list-style-type: none"> <li>- Evaluate the collaborative process</li> <li>- Evaluate the impact of the collaborative process</li> <li>- Evaluate the results of the process in relation to objectives/expected results</li> </ul>
On a scale of 1 to 5, these indicators measure the objectives and expected results of the process...



1: not at all 2: a little 3: moderately well 4: very well 5: extremely well

Table 11 - Checklist Step2

Table 12 - Checklist Step3

Step 3: implementing the engagement model
<p>Stakeholders have been informed of their role in the governance system. This has been through the following methods (delete/add as appropriate):</p> <ul style="list-style-type: none"> <li>- Seminars</li> <li>- First meeting of a working group</li> <li>- Through a website Newsletter</li> <li>- Article in press a mailing other: .....</li> </ul>
<p>Stakeholders are officially committed to the process (and this commitment has been evidenced)</p>
<p>On a scale of 1 to 5, the tools and informational materials have helped different stakeholders to understand the issues ...</p> <p>1: not at all 2: somewhat 3: to a certain extent 4: very well 5: extremely well</p>
<p>On a scale of 1 to 5, stakeholders are satisfied that their input was heard and considered...</p> <p>1: not at all 2: somewhat 3: to a certain extent 4: very well 5: extremely well</p>
<p>On a scale of 1 to 5, information about the progress, the results, and the evaluation was communicated to participants...</p> <p>1: not at all 2: somewhat 3: to a certain extent 4: very well 5: extremely well</p>
<p>On a scale of 1 to 5, the evaluation process enabled ongoing evaluation of the governance agreement...</p> <p>1: not at all 2: somewhat 3: to a certain extent 4: very well 5: extremely well</p>

## 7. CONCLUSIONS

In exploring the role of stakeholder engagement in value co-creation, the analysis has not only confirmed the centrality of stakeholders in the scope of value creation processes, but it has also allowed to better appreciate how value is co-created by the complex interaction of a network of stakeholders.

Stakeholder engagement enhances the creation of value both at individual stakeholder level (internal value) and at community level (external value). More in general, internal value creation seems intrinsic to stakeholder engagement.

Similarly, efficiency is increased through a reduction in production costs and service outcome is increased with both positive user opt-in and retention. On the other hand, stakeholder engagement has generally resulted in an improvement in quality.

Moreover, comparing the two case studies allows to appreciate how the determinant factor for creating value is accessibility. Whether a structural or managerial coordination device is adopted and whether processes are formalized through defining ex-ante process flows and outputs, the important issue is how inclusive and open the engagement is.



This argument confirms a mechanism highlighted by previous studies in the field of interactive governance in the public sector. Stakeholder engagement should allow to incorporate stakeholders' points of view into decisions. The precondition to make this happen is that some discretion is granted to stakeholders. Therefore, accessibility matters: it is ultimately a choice about how much discretion is attributed to stakeholders and how much control is instead retained by the administrator.

It is strongly suggested that the context for smart cities stakeholder engagement leads towards the selection of governance model and processes with the purpose of exploration or the development of collaborative action and a purpose related to decision making.

This then leads to consider a range of approaches to be explored and developed.

Stakeholder engagement has been subject to critical review associated with for example, relatively low levels of participation, the legitimacy of the process and the costs associated with it.

Smart cities need to take account of these issues and potentially other challenges that surface in the design and implementation of stakeholder engagement. The nine principles underpinning effective public engagement as well as the good practices to solve the obstacles to stakeholder engagement may also be used to inform the development and design of successful governance models.

The promise of stakeholder engagement is that it will bring different actors together to discuss smart cities and sustainability issues in a process that will support the engagement of external stakeholders and help them to work collaboratively.



## 8. ANNEX 1 – MASSIVE OPEN ONLINE COURSE (MOOC)

### MOOC concept

According to the literature (Bates 2014, Chatti et al. 2014, Downes 2013, Hayes 2015), a MOOC (Massive Online Open Course) can be defined as a teaching product which:

- ensures a structured learning approach with:
- a syllabus and specific learning objectives;
- learning materials and support activities;
- an evaluation system based on quizzes, exercises or projects;
- a certification processes
- accessible through an online platform
- designed and managed to ensure its scalability to many people
- accessible to all because there is no binding prerequisite for participation

Overall, a MOOC for stakeholder engagement for sustainable smart city business ecosystems is designed as follows.

#### *a. Title*

The suggested title for the MOOC course is: “Stakeholder engagement for sustainable smart city business ecosystems”. Alternatively, the title could be defined according to the project or initiative it is related to.

#### *b. Target audience*

The intended target audience is formed by city officials and other local authorities’ officials. All participants should be in charge or involved, at least prospectively, in developing smart city policies and face the challenge of engaging relevant stakeholders.

#### *c. Course learning objectives*

The course aims at achieving learning objectives, both in terms of knowledge to acquire and skills to be developed. More specifically, after the completion of the course, participants should acquire the following knowledge:

- be familiar with the logic of stakeholder engagement;
- be familiar with the advantages and potential problems of stakeholder engagement;
- be familiar with the role stakeholder engagement plays in designing and implementing smart cities policies and initiatives.

After the completion of the course, furthermore, participants should acquire the following skills:

- be able to identify and classify the main stakeholders in a smart city environment;
- be able to design a well-functioning governance structure to engage stakeholders in smart city policies and initiatives.



#### d. Course detailed structure

	Module	Learning objectives	Format
1	Course introduction. Smart cities: the challenges	Develop an understanding of the challenges for smart cities	-Narrated slideshows -Animation
2	Stakeholder engagement: a primer	Become familiar with the logic of stakeholder engagement	-Narrated slideshows -Animation
3	Stakeholder engagement: organizational arrangements	Improve the ability to identify and select the main stakeholders within a smart city environment. Improve the ability to design the main steps of the engagement process.	-Green screen lecture
4	Designing the governance structure	Develop the ability to design a well-functioning governance structure	-Green screen lecture
5	Case studies: the Lighthouse cities	Become familiar with two alternative successful governance models	-Documentaries -Interviews

The following contents should be developed for the syllabus of each module:

#### Module 1 - Course introduction: the challenges for smart cities

- Course objectives, organization and “rules of the game”
- Definition of smart cities as cities using technological solutions to improve the management and efficiency of the urban environment
- Focus in the EU on smart cities as “a place where traditional networks and services are made more efficient with the use of digital solutions for the benefit of its inhabitants and businesses” (EC, eu.europa.eu)
- Challenges for smart cities in the EU:
  - Smarter urban transport networks
  - Upgraded water supply and waste disposal facilities
  - More efficient ways to light and heat buildings
  - More interactive and responsive city administration
  - Safer public spaces
  - Meeting the needs of an ageing population

#### Module 2- Stakeholder engagement: a primer

- Definition of stakeholder engagement as:
  - engaging external stakeholders in a wide range of policy areas, at different stages in policy development using deliberative methods and processes
  - a process where a range of people learn, discuss, and work out solutions together
- Effects of stakeholder engagement: improved policy or decision making, democratization and stakeholder empowerment, policy legitimization and increased consensus, social learning. Insights on the motives to adopt participatory governance:
  - A response to deficits of representative democracy



- A strategy to improve governance effectiveness
- Electoral benefits of participatory governance
- Participatory governance as a public administration fad
- Insights on the motives for participation: internal vs. external value creation
- Forms of stakeholder engagement: purposes, levels and methods of participation

### Module 3 - Stakeholder engagement: organizational arrangements

- Stakeholder identification and selection:
  - Primary stakeholders: those who are (positively or negatively) affected by the issue
  - Key actors: those who have power or expertise
  - Intermediaries: those who have an influence on the implementation of decisions, or have a stake in the issue
- Formalization: ex-ante definition by formal rules of processes and procedures, outputs, and overall functioning of the interactive practice
- Successful engagement
  - Good practices
  - Obstacles to engagement and possible solutions

### Module 4 - Designing the governance structure

- Levels of institutionalization
- Coordination mechanisms: structures vs. management systems
- Pros and cons of well-defined structures vs. more flexible approaches
- Contextualization to a smart city environment
- Checklist of the activities that can be undertaken to set up a governance structure which engages stakeholders

### Module 5 - Case studies: the Lighthouse cities

- Leipzig: the Triangulum and SPARCs projects
- Espoo: the Sustainable Espoo Development Program and SPARCs project
- Overall learnings and take-home messages: the importance of contextual factors and expected outcomes

#### *e. Course duration and schedule of learning activities*

The course is designed to be completed in 5 weeks. The schedule is based on 5 modules, organized in two sessions each. The duration of each session it is to be determined depending on the audience, its knowledge of the actual topics and their familiarity with MOOC.

#### *f. Assessments*

Assessment is based on multiple choice quizzes to be taken at the end of each session. The quizzes can be accessed online, and machine graded.

#### *g. Course community*

The course activity will be complemented by a participants' community, based on a thematic forum. The forum will allow the interaction among participants on the topic of stakeholder engagement within smart cities initiatives.



#### *h. Instructional personnel*

The instructional staff should involve the following

- 1 instructor in charge for designing the contents of module 1-2 and to deliver the lectures relative to module 3-4, which could be recorded
- 2 key experts to be interviewed for module 5 + 1 expert to conduct the interview
- 1 technical expert to produce the slideshows, the animations, and the interviews and to organize the community

#### *i. Gathering feedback*

Participants completing the course will be kindly asked to fill a standard satisfaction survey online, including a space for qualitative remarks. Such feedback should be used to monitor and eventually improve the MOOC.

#### *j. Certificate*

Participants completing the course and taking the assessments at the end of each session, shall receive a simple certificate of attendance.

### **Prescriptions for course delivery**

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When designing and organizing the MOOC the following issues should be taken into consideration:

- “SMART” method to define and communicate objectives:
  - S for specific
  - M for measurable
  - A for accessible
  - R for realistic
  - T for time-related (short, medium, or long-term objectives)
- Development of support materials to be delivered to the participants
- Popularity of platform chosen for MOOC delivery
- Language of course delivery
- Appropriateness of day and time for course delivery according to local specificities
- Design of an adequate promotion strategy for the MOOC

When delivering the MOOC, the following aspects should be taken into consideration:

- Level of preparation of the audience
- Need to share documents in advance
- Need to repeat contents more than once
- Level of interaction
  - Possibility for participants to write comments in a chat, board or similar
  - Possibility for participants to submit questions to be collected by theme and answered in real-time, at the end or after the course section



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