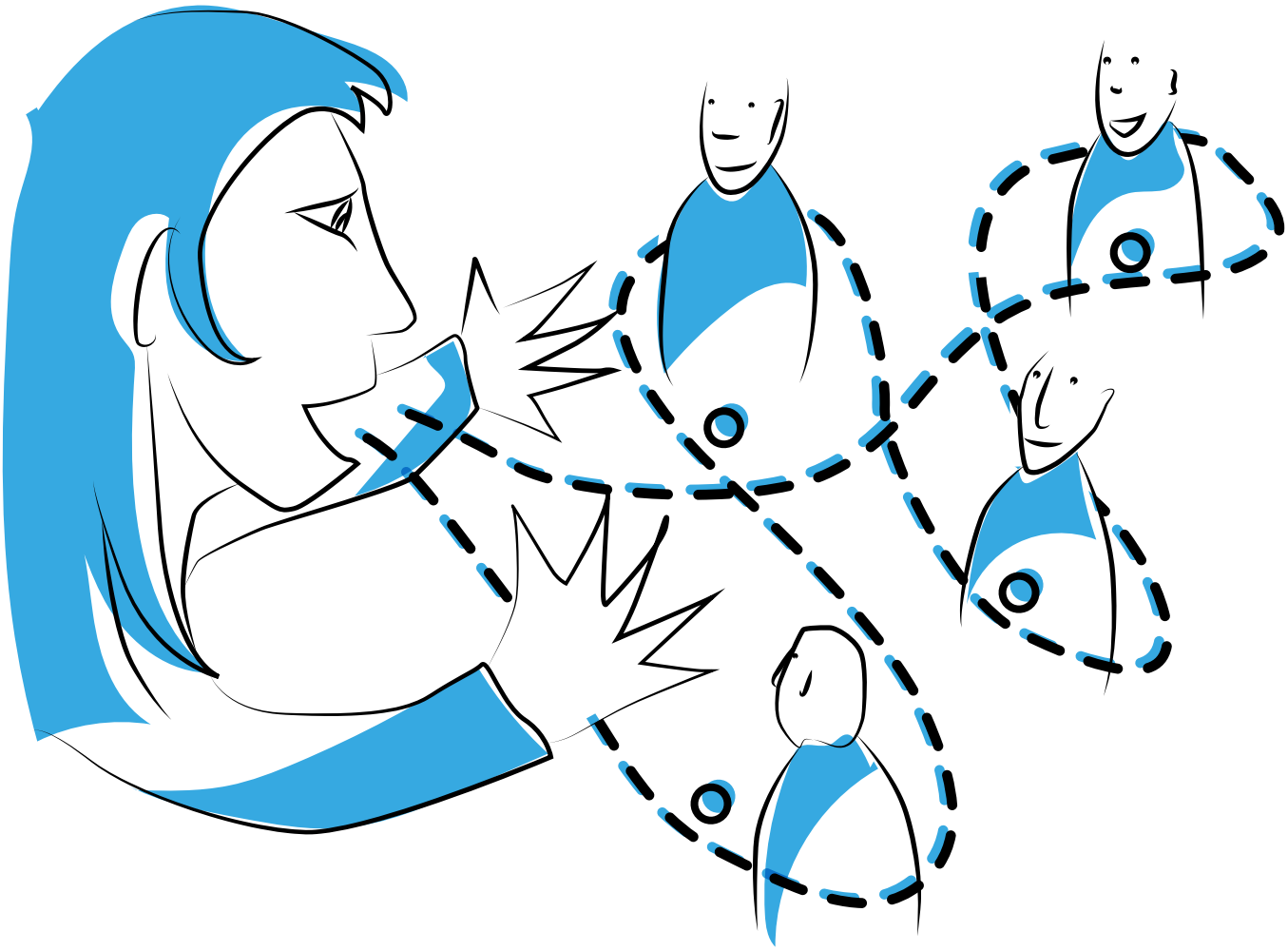

STORYTELLING

SHAPE ENERGY facilitation guidelines for interdisciplinary and multi-stakeholder processes

SHAPEENERGY

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Contents

1. SHAPE ENERGY and storytelling

The SHAPE ENERGY - *Social sciences and Humanities for Advancing Policy in European Energy* - project will develop Europe's expertise in using and applying energy related Social Science and Humanities (energy-SSH[1]) to accelerate the delivery of Europe's Energy Union Strategy. SHAPE ENERGY brings together those who 'demand' energy-SSH research (policy workers, business, NGOs and community groups) and those who 'supply' that research (academics, research consultants) to collaborate in 'shaping' Europe's energy future. A key deliverable will be a 'Research & Innovation Agenda 2020-2030' to underpin post-Horizon 2020 energy-focused work programmes. This Agenda will highlight how energy-SSH can be better embedded into energy policymaking, innovation and research in the next decade.

The SHAPE ENERGY Platform aims to involve >12,114 stakeholders in a wide variety of activities between 2017 and 2019. Following a number of scoping activities the Platform will deliver: multi-stakeholder workshops in cities across Europe, an Early Stage Researcher programme, Horizon 2020 sandpits, interdisciplinary think pieces, a research design challenge, and a pan-European conference. Interdisciplinary and multi-stakeholder working is integral to these activities, and using innovative methods proven to enable collaboration and mutual understanding is a central pillar of the Platform.

One of these innovative methods is storytelling. Storytelling involves communicating in a way which emphasises plot, characters, and narrative, and is an instinctive form of talking or writing which humans have used for a very long time to transfer essential life lessons or for other learning purposes. Storytelling as a research and collaboration tool is grounded in several social science disciplines, including Anthropology and Sociology. The storytelling methodology will facilitate productive working in several SHAPE ENERGY activities, notably at the 18 multi-stakeholder workshops in 18 European countries, the four Horizon 2020 sandpits with H2020/FP7 project partners, and finally within our own communication approaches and more incidental workshops such as the SHAPE ENERGY Solutions Workshop at the eceee summer study 2017.

The storytelling methodology that SHAPE ENERGY will use is developed and coordinated by SHAPE ENERGY project partner Duneworks, with a further 10 project partners co-facilitating activities using the methods outlined[2]. Duneworks has prior experience using storytelling elements in many different projects, most notably through the groundwork laid via the International Energy Agency Demand Side Management (IEA DSM) Technology Collaboration Programme Task 24[3].

This report details the guidelines for facilitators of the SHAPE ENERGY multi-stakeholder workshops and sandpits. However, these guidelines are also designed to enable wider use by others aiming to facilitate interdisciplinary and/or multi-stakeholder collaboration. As such, the report first describes several key challenges one faces when dealing with interdisciplinary and/or multi-stakeholder collaboration, and how the storytelling methodology can help overcome these challenges. The report then provides concrete scripts for the SHAPE ENERGY multi-stakeholder workshops, sandpits and details other planned communication approaches, before concluding with further illustrative examples of storytelling tools in the Appendix.

1 The SHAPE ENERGY Platform thus encompasses, amongst other disciplines: Business, Communication Studies, Development, Economics, Education, Environmental Social Science, Gender, History, Human Geography, Law, Philosophy, Planning, Politics, Psychology, Science and Technology Studies, Sociology, Social Anthropology, Social Policy, and Theology.

2 Acento Comunicación, Anglia Ruskin University, Black Sea Energy Research Centre, Energy Cities, École Nationale des Travaux Publics de l'État, Karlsruhe Institute of Technology, Middle East Technical University, Norwegian University of Science and Technology, Politecnico di Torino and Tomas Bata University.

3 See http://www.ieadsm.org/task/task-24-phase-2/. Task 24 is an international collaboration, the current phase 2 is led by Dr Sea Rotmann of Sustainable Energy Advice Ltd.

2. What is storytelling and why is it valuable for processes such as SHAPE ENERGY?

2.1. Challenges in interdisciplinary and multi-stakeholder working

When dealing with complex challenges in complex systems - such as energy transitions and climate challenges - there are a wide variety of relevant bodies of knowledge. These include academic research, policy expertise, sectoral expertise from those attempting to embed new initiatives, and the experiences of laypeople / citizens. None of these communities have all the tools on their own to meet future societal challenges, instead future challenges need to be tackled using tools and knowledge from a multitude of stakeholders (Schneidewind et al., 2016). In recognition of this, interdisciplinary and multi-stakeholder (policy, practice, innovation and research) processes are increasingly promoted, with the aim of creating collaborative roadmaps or agendas for future activities.

These type of cross-boundary projects have several key characteristic challenges, and many existing collaborative approaches have arguably had limited success. Amongst other reasons, this can be because interdisciplinary projects must allocate time to the development of shared vocabularies and understandings, time which is often not designed into projects (Bracken and Oughton, 2006). Commonly experienced collaboration challenges have contributed to a large body of literature on the difficulties of interdisciplinary working and transformative science (Lyall and Meagher, 2012; Lang et al., 2012; Bruce et al., 2004; Schneidewind et al., 2016). Further, many studies across social sciences and humanities have demonstrated ways in which it may be hard for different groups to interact on a level playing field. Below a brief summary of such challenges is given:

- Researchers from different communities may bring fundamental differences in their research ontologies (what exists), epistemologies (what we can know about what exists), and methodologies (how enquirers can study what can be known) (Guba and Lincoln, 1994). Different research communities, in addition, often work in disciplinary siloes (Mourik and Rotmann, 2013).
- Academics and non-academics often find they approach research problems very differently, indeed non-academics may well not even think in terms of 'research problems', and may not find discussions of different ontologies very useful (Gieryn, 1999; Renn, 1995; Irwin and Wynne, 1996; Mourik, 2004).
- Siloes and in-built areas of conflict exist between different sectoral stakeholders in the energy system (Mourik and Rotmann, 2013).
- There is a bias towards asking and answering questions that fit the current academic, political or social direction, which can be limiting and impede empathy towards different perspectives and voices, and make it hard to even recognise one's own perspective (Hoffman and Ventresca,1999; Woolgar and Latour, 1986).
- Science often stands for credibility, for legitimacy and thus scientific knowledge often is preferred to non-scientific knowledge when searching for solutions (Gieryn 1995,1999; Renn, 1995, Irwin and Wynne, 1996). See Figure 1.
- Many authors have demonstrated how in the energy transition the more quantitative social science and humanities disciplines are preferred by policymaking over the more qualitative disciplines (Sovacool, 2014). The IEA (2014) for example demonstrated that, since many benefits are usually monetised so that they can be integrated into existing policy assessment frameworks, many policy evaluators prefer quantitative over qualitative data. However, both quantitative and qualitative methods are necessary, because although quantitative methods may provide information on the 'what', it is the qualitative interpretation that provides answers as to 'how and why' (Mourik et al., 2015).

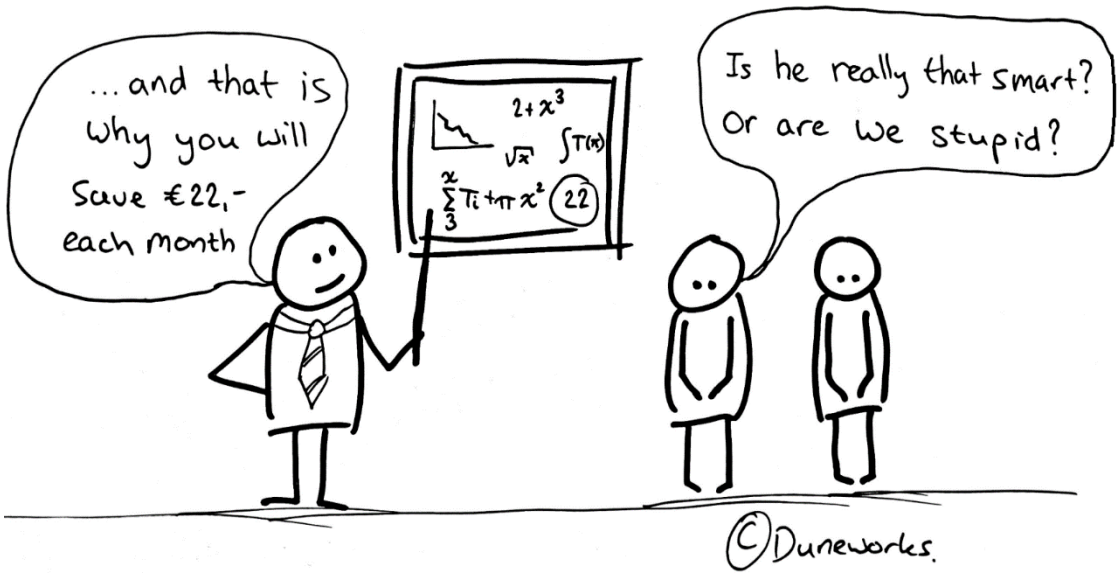

Figure 1: Different types of knowledge may include or exclude different audiences.

2.2. Increasing the challenge: aiming to solve wicked problems

An additional complexity of the interdisciplinary and multi-stakeholder collaborations SHAPE ENERGY aims to facilitate is that they are being used to tackle very complex issues. Moving towards a more sustainable energy system and subsets of this challenge (such as: energy efficiency and using less; creating a low carbon, secure, competitive supply system; increasing smart technologies and energy system optimisation; and decarbonising the transport sector) represent so-called 'wicked problems'. Such problems are very difficult to address for a set of interrelated reasons, which Kolko (2012) identifies as follows:

- the problems are characterised by incomplete or contradictory knowledge;
- there are usually a very diverse and high number of stakeholders are involved;
- many different and often conflicting norms, values and perspectives exist on what the problem is;
- the problem is often connected to high economic costs; and finally
- the problem is often strongly interconnected with other problems.

Wicked problems are characterised by the multitude of perspectives which exist in relation to them, often not only based on 'facts' but also on values and norms. Wicked problems are consequently often characterised by strong disagreements about both what the problem definition is, what kind of knowledge is valid, and what values are relevant. This fundamental element of wicked problems (i.e. the lack of a common problem definition) needs to be acknowledged, and dialogue processes should not be aimed at early consensus; instead, articulation of differences, particularly at the beginning but sometimes also right up until the end of such a process, is imperative.

Kolko (2012) argues that if this element of wicked problems is not acknowledged, the solutions which emerge end up being 'one shot' design efforts which do not appreciate the myriad norms, values, perspectives, problems and causes that actually exist. Van Eeten (1999) calls the dialogues that insufficiently appreciate this diversity and necessary articulation of difference, and where science follows dominant policy perspectives, 'dialogues of the deaf', and argues for greater democratisation of knowledge inclusion in processes aimed at solving wicked problems. Instead of finding and aiming for complete consensus, the starting point for a collaborative story is to find some common ground, and acknowledging where real difference lies.

2.3. The importance of considering the value of each voice

In reaction to these challenges of collaborative working, and to attempt to solve wicked problems, processes emerge that try to create interaction between these different, and sometimes conflicting, knowledge claims. This is sometimes called 'boundary work'. The concept of boundary work was developed to identify and analyse the drawing and redrawing of boundaries within and between the sciences (including social sciences) and different forms of knowledge (Gieryn, 1999). This framing recognises that there is no *a priori* boundary between relevant and irrelevant knowledge. Indeed, many of the (relatively narrow) frameworks science has to offer are not able to encompass the multiple connections and interactions of systemic problems.

The processes of boundary work and sense-making occur most notably in settings (hybrid forums) where tacit assumptions about the content, use and application of scientific and other forms of knowledge are made more explicit (Mourik, 2004). This unpacking of tacit assumptions is something we will facilitate and aim for in the SHAPE ENERGY workshops and sandpits. SHAPE ENERGY sees value in reflecting on different positions, including those we know we don't agree with, are not 'scientifically' grounded but based on norms and values, are generally thought not to be achievable, or that we don't want to work towards. This critical reflection can help unpick why that is and what assumptions our own position is based on. As such, boundary work and sense-making processes can provide the basis for a learning process, discussed in more detail next.

2.4. The importance of creating shared learning

Based on the above mentioned key challenges, we argue that it is important for the success of any process such as SHAPE ENERGY that aims at tackling wicked problems, to create shared learning through a dialogue that is levelled, open, empathetic, and non-judgemental with respect to different ways of working, defining and approaching problems. SHAPE ENERGY activity participants will be encouraged to try and understand the multiple work modes and approaches of multiple stakeholders, with the aim of learning how to more effectively collaborate and generate impact. The focus of any such process must therefore be on exploration and explanation instead of judging, and on unpacking the mechanisms that explain how and why some disciplines, policies, and interventions work or fail in different contexts across history and place (Pawson et al., 2005). This type of reflexive, shared learning is sometimes called 'double loop' learning, and in the remainder of the text we use the term double loop learning to refer to the collaborative, shared or social learning process we are aiming for. Argyris and Schön (1978) first developed the concepts of single and double loop learning to highlight differences in learning about what we do and what we get, in contrast to why we do what we do. See Figure 2 for an overview of interconnections between single and double loop learning, and Table 1 for an overview of the differences between single and double loop learning.

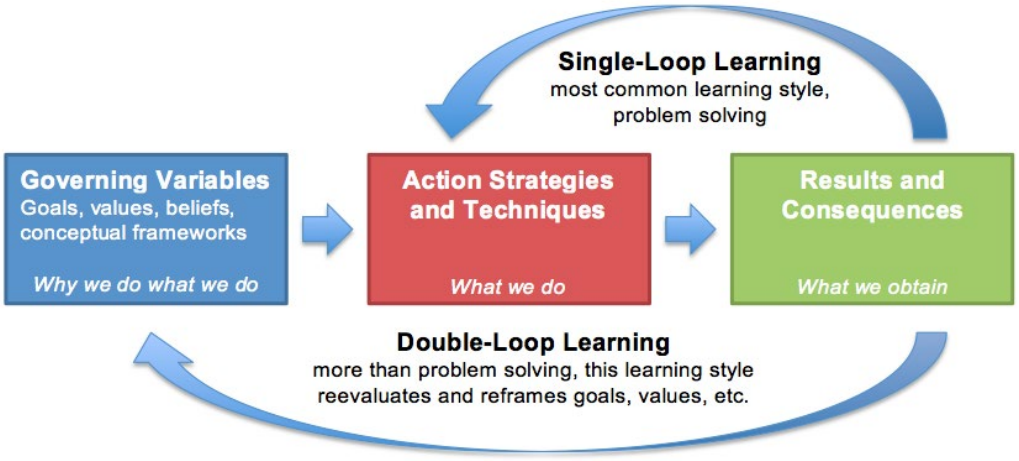

Figure 2: Double vs. single loop learning. Retrieved from https://woca.afs.org/afs-announcements/b/icl-blog/posts/single-loop-and-double-loop-learning-model.

Single loop learning:	Double loop learning:
• *is instrumental* • *is focused on short-term learning about effectiveness in meeting goals* • *is outcome focused*	• *is reflexive* • *is context- and time-dependent* • *focuses on both strategic and operational results* • *is process-oriented, focused on interactions* • *is focused on analysing the quality of interaction* • *is focused on the how, when, where, how, how long, for whom* • *is about questioning goals and prevailing norms and rules underlying these goals* • *is focused on learning by doing and doing by learning* • *is focused on aligning stakeholders* • *changes the way stakeholders frame problems, find solutions and manage and understand their own role* • *is an important precondition for systematic transitions to take place*

Table 1: An overview of the differences between single and double loop learning. Based on Breukers et al. (2009).

2.5. Summary

Summarising, interdisciplinary work and multi-stakeholder processes, especially when focused on wicked problems, face a number of key challenges:

1. Contestation between different forms of knowledge, and thus different voices, due to a lack of understanding, appreciation of and learning about the relevance and validity of different knowledge claims, approaches and definitions.
2. A lack of opportunities to 'unlearn' one's own position and appreciate the importance of other voices and perspectives.
3. A focus on consensus and solution too early in the process, instead of learning and sense-making through exploration and explanation, allowing conflict and overcoming it by creating empathy for different perspectives.
4. Consequently a difficulty in creating inclusive processes focused on a diversity of voices and perspectives.
5. A lack of impact due to no collaborative construction of future visions and agendas and/or little alignment between stakeholders.

In the next section we discuss in turn how the storytelling approach can contribute to overcoming each of these five challenges, in subsections: 3.1., 3.2., 3.3. / 3.4., 3.5., and 3.6 / 3.7. respectively.

3. Contribution of storytelling to learning and unlearning, empathy and conflict solving, inclusion and participation of different voices

One approach that combines many of the identified essential elements for cross-boundary collaboration between disciplines and sectors, allowing for so called reflexive, shared or 'double loop' learning (as discussed earlier), and enables this learning to take place in a non-threatening manner between experts and non-experts, is storytelling (Alterio and McDrury, 2003; Diedrich et al., 2011; Dhalstrom, 2014).

Before discussing why storytelling is relevant to the boundary crossing work SHAPE ENERGY is performing, it is important to highlight what a story is and the distinction between a 'story' and a 'narrative', as both words are commonly used. Whilst the term narrative is often used when referring to a text (oral or written) that provides a (relatively) chronological account of an event or action, a story is a more deliberately constructed and not necessarily chronological account. The biggest difference thus between a story and a narrative is that a story has an additional layer because it has been explicitly and purposefully 'emplotted' (following a plot or 'story spine'[4]) with a sequence of events and the principle of cause and effect (Diedrich et al., 2011). What this distinction between narratives and stories highlights is the active construction or plotting of stories with specific purposes (e.g. to excite or spark interest, to elicit certain emotional reactions), versus narratives which aim to more narrowly to provide an account of events.

3.1. How storytelling supports learning

Star and Griesemer (1989) worked to identify why people are able to learn better from, and feel comfortable with, stories. They found the structures underpinning stories are often common across contexts and therefore recognisable and non-threatening. Cultural learning is another element that explains why we feel comfortable around stories, and communicating through telling stories ourselves. Cultural learning is part of the function of most stories we know: to transfer knowledge and understanding. This age-old form of interaction has even led to humans physiologically interacting with stories, and we are much better at remembering a story than any other account (Bruner, 1991; Bhalla, 2013; Rotmann et al., 2015).

Considering that stories are thus as old as humankind, and even physiologically intertwined with how we think and act, it is of utmost importance to make a very conscious choice as to what *type* of story to choose when using storytelling in events. This choice could depend on what emotional response you want to achieve with the group you are working with. Straker (2008) identified a few examples of the forms and functions of stories, for example:

- Adventure and action stories can raise safe arousal;
- Science fiction, fantasy, and romance stories are about providing a means of escape from daily life;
- Tragic and comic stories are able to release inner tensions.

When using stories explicitly aim at learning and teaching, as in SHAPE ENERGY, a different set of categorisations emerge. Learning stories can include for example children's stories, journey stories, and hero and villain stories (Straker, 2008; Janda and Topouzi, 2013). One further learning story, particularly relevant for exploring different perspectives, is one which flips the dominant perspective upside down, and uses the end-user (or sometimes the underdog or underrepresented voice) as the protagonist in the story.

According to Davies and Dart (2005), for storytelling to contribute to double loop learning, as we aim for in SHAPE ENERGY, it needs to focus on exchange of views between groups of participants who work and think differently. Alterio and McDrury (2003) identify five stages in undertaking such an exchange through

4 A story spine is literally the spine of the story, it is the idea of the plot, which incorporates the purpose and aim of the story, and which can involve guiding sentences that provide a sequence and causal relationship between paragraphs. Story spines are a key tool used in the storytelling activities of SHAPE ENERGY, as detailed in section 4.

storytelling: story finding; storytelling, story expanding, story processing and finally story reconstructing. Our events are thus structured around these five stages.

A further element of learning is recall. Simply writing a text in the form of a story is already a powerful recall method (see Figure 3), Hillier et al. (2016) found that writing in a more narrative style increases the uptake and therefore influence of articles in climate literature. The visual sense is also very powerful and, consequently, one of the best ways to engage people into action and facilitate recall is by pairing words with pictures (O'Neill, 2013). Further evidence of the impact of storytelling methods on learning and engagement comes from Hajer (1995) who demonstrated that the symbolic picture of the earth seen from space, with a protective hand beneath it, was a strong influence in the discourse on the human impact on the earth, and influenced engagement positively.

Figure 3: Storytelling can aid recall.

3.2. How storytelling supports 'unlearning' and seeing things differently

Counterintuitively, storytelling furthermore can help facilitate another important element of double loop learning, which is 'unlearning' individual, sectoral or disciplinary perspectives and ways of knowing which are taken for granted and often not even 'front of mind' anymore (Brown and Gray, 1995). Realising the implicit frames of mind that shape our thinking is the first step in realising there might be other relevant ways of thinking and doing, and realising that knowledge and methods are situated in specific contexts. To create double loop learning, an openness of mind, readiness to let go of norms, values and or knowledge claims is important. The intuitive and emotional element of telling and listening to stories helps provide this condition.

Mourik et al. (2015) discuss how, in stories, bias is not avoided but rather embraced as a learning element because it helps us understand why a character holds to a certain perspective. Alvesson and Sköldberg (2008) state that bias is inherent in any account, as a result of the social position of the storyteller, and the origins and quality of the information sources. By being explicit about bias and perspectives, storytelling thus has the potential to create a deeper appreciation for the fact that there is not one truth, but that all knowledge is situated and context-dependent (Jasanoff, 1995). When explicitly aimed at unpicking bias and perspectives, the storytelling approach can create an open atmosphere where interests, mandates,

restrictions, needs, opportunities, risks etc. can be discussed and taken on board in a more collaborative approach (Hanleybrown et al., 2012; Rotmann, 2017).

Straker (2008) also mentions that bias is perfectly acceptable in storytelling, although we note that in the current context of discussing energy challenges, we are aiming for 'realistic' stories about common futures, rather than complete fantasy. Storytelling is an approach that allows us to move beyond the presented and pretended 'objectivity' of both quantitative and scientific approaches, one of the key challenges in cross-boundary working. Storytelling *"...allows for different morals to be discussed, it almost demands it, we are all aware of the almost inherited right of stories to have multiple interpretations depending on the reader, so instead of either accepting or opposing a story, readers are encouraged to try to understand a story and its multiple interpretations"* (Mourik et al., 2015, pp. 27-28). Of course there are (cultural and moral) boundaries as to how much understanding a story can receive, and thus the storytelling approach can work best in groups that share a basic normative framework to some extent.

3.3. How storytelling supports sense-making

Because of the 'learning mode' we enter when hearing teaching tales or learning stories, storytelling then becomes a very useful approach for sense-making when dealing with complex systems, and for reporting on these complex systems (Snowden, 1999, 2000, 2002; Sukop et al., 2007). Storytelling aimed at learning and teaching actively creates meaning, linking one stepping stone of experience with the next (Josephs, 2008). Stories are a safe way of learning the lessons of life and making sense of things through proxy instead of through our own direct experience which may come with potentially negative consequences (Straker, 2008). We all know this use of stories, such as with children's fairy tales and other bedtime stories, but also oral history and reality drama on television which are very clear examples of transmission of social knowledge through storytelling. Because we all grew up with the use of stories as learning tools most of us feel comfortable and not threatened around stories (Straker, 2008). This specific function of storytelling with respect to sense-making through a collaborative boundary crossing process is undertaken quite often, but is relatively under-researched. Diedrich et al. (2011) argue that too little attention has been paid to this specific role of narratives or storytelling as a process of sense-making.

3.4. How storytelling supports empathy and overcomes conflict

Another key feature of storytelling is that it promotes empathy between different stakeholders through the principle of association with the characters in the story[5]. Empathy is a key condition for double loop learning because it helps create a level playing field, allowing for greater equality of perspectives. For empathy to emerge however, hierarchical relations need to be removed (Star and Griesemer, 1989). Boase (2008, p. 2) states that *"narratives are a basic agency for human empathy because they address the listener, reader or viewer ....as a human being, rather than as members of a class, sect or university. Thus a story allows us to relate to each other as another self."* In her research, Weinschenk (2014) describes several key steps in building empathy through storytelling: unnecessary facts and figures should be avoided; sensory details and images need to be evoked; and jokes and metaphors are helpful.

Performing collective storytelling in workshops and sandpits, whether in the form of writing down stories, or using a combination of words and visuals can thus be a very helpful methodology to discuss cross-disciplinary issues that could become confrontational.

When potentially conflicting elements or painful relations are to be discussed, such as can be the case when bringing together disciplines, methodologies or science and non-science stakeholders, the real time drawing of cartoons or cartoonlike reporting of the discussion can also be very useful because conflicts and/or contradictory knowledge or perspectives can be immediately highlighted and discussed.

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5 The principle of association in storytelling is defined as follows: *"I mentally connect things together, and then automatically follow the links I have made."* See http://changingminds.org/principles/association.htm; http://www.blog.theteamw.com/2014/11/04/your-brain-on-stories/; http://changingminds.org/disciplines/storytelling/articles/story_purpose.htm

Boase (2008, p. 8) argues that *"when collaborating on making a story, the narrative is tested by members of the group, evaluated and revised to represent a consensually validated account and interpretation of the event or situation. This process requires collaboration, negotiation and accommodation. In working together to create a mutually acknowledged / accepted truth, the storytellers increase their understanding of each other. This fact makes narrative transactions a useful tool for encouraging social reflection and producing mutual understanding and potentially, social cohesion."* As such the story can become a boundary object that overcomes conflict (Polman and Hope, 2014), creating sharing meaning across disciplinary and sectoral or social borders through the plotting of stories (Lindberg and Czarniawska, 2006). Storytelling can thus help develop and maintain collaboration and coherence across intersecting disciplinary and sectoral worlds through working together to see how and where all stories meet.

3.5. How storytelling supports inclusion and participation

Because storytelling allows and explicitly invites multiple voices and perspectives, and if the approach is as inclusive and deliberative as possible, it is also a legitimising process for outcomes of the process such as an agenda, programme or scenario (Paschen and Ison, 2014; Miller et al., 2015; Selin et al., 2015; Carbonell et al., 2017).

Stories are a linguistic currency accessible to everyone and as such open up deliberative processes for those people, perspectives and voices that might not feel competent or able to participate otherwise (Miller et al., 2015). This makes stories a good translation tool across worlds, something which was also experienced in the international work of the IEA DSM Task 24 (Rotmann, 2017).

3.6. How storytelling supports the creation of possible visions, scenarios and planning for impact

Storytelling, and the double loop learning processes discussed above, can also help generate impact in transition processes or with respect to the solving of wicked problems. This impact however requires commonly defined desirable future visions and collective agenda setting. Goodchild et al. (2014) found that stories are especially good at constructing such desirable futures, based on multiple narratives (see Figure 4), and with plots that explains actions, actors and causal relationships. Diedrich et al. (2011) furthermore state that, if well designed, storytelling can form the foundation for inclusive and participatory future thinking or visioning exercises aimed at creating emplotted narratives (those carefully written using a specific plot), including lists of future actions, descriptions of settings, and a chain of past and future actions connected a way that make sense. Storytelling has often been used to help develop shared visions and goals and to explore potential futures (Davies and Dart, 2005).

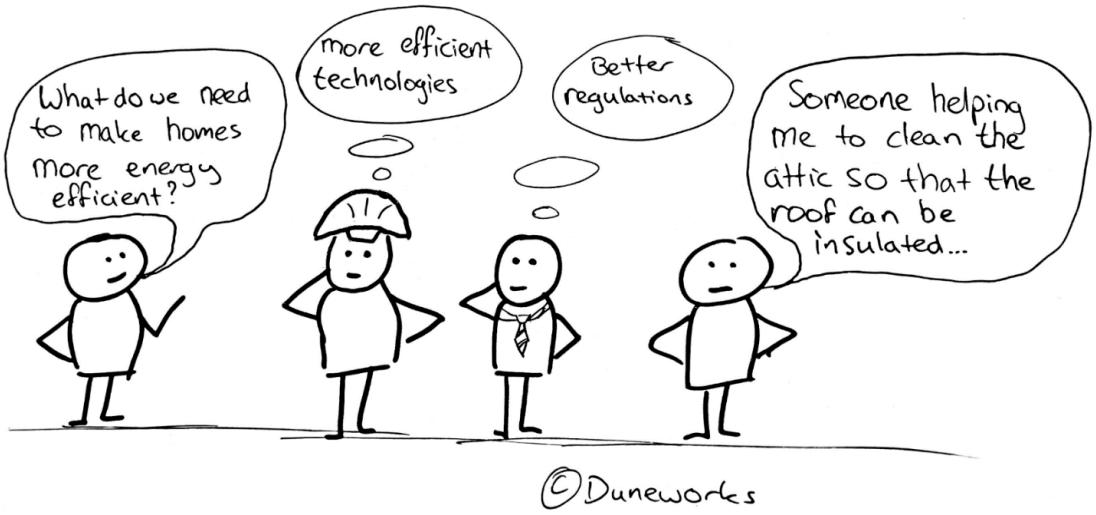

Figure 4: Understanding and acknowledging different visions can involve 'unlearning' one's own predispositions.

The use of narratives in scenario planning for example, and relatedly in the energy and climate change field, is well established as a means to build collective and shared frames of reference (Jarva, 2014; Selin et al., 2015). Miller et al. (2015) for example, explicitly used storytelling in a scenario planning workshop as a means to encourage individual and collective meaning construction to meet future energy governance challenges and to facilitate capacity building in public deliberative spaces similar to the SHAPE ENERGY platform. Narrative creation can in particular enable strategic planning, motivate transformative change and help create informed programmes and pathways (Miller et al., 2015).

Wolsink (2007) highlights potentially the most powerful element of using storytelling for future work, by describing that narratives enable the envisioning of futures from an individual perspective, allowing people to experience the significance and impact of that future for them and their work and life. Storytelling, in addition to providing this unique end-user perspective, because of its potentially levelling, empathetic, inclusive and participatory nature, can also allow discussion of more radical (less easily achievable, less realistic) alternatives (be they theoretical, methodological, policy-related, etc.) and what that can mean for future pathways.

3.7. How storytelling supports construction of collaborative agendas

Dimond et al. (2013) state that storytelling is not only a good method to create visions, agendas and undertake planning, but that it is also a powerful approach for activism and for generating collective and shared action around such a new agenda, through collaborative storytelling. Collaborative storytelling has long been used in different settings, for example around the creation and sharing of collective histories, promotion of healthy eating habits, and post-conflict reconciliation (Dimond et al., 2013). Storytelling aimed at collaboration and resolving conflict, and where possible building consensus, such as we aim for in SHAPE ENERGY activities such as the 'Research & Innovation Agenda 2020-2030', is also called 'persuasive storytelling' (Throgmorton, 1992, 1996; Rotmann et al., 2015) and is often widely used to improve planning and policymaking, often using the 'drama' story (van Hulst, 2012; Janda and Topouzi, 2013; Bushell et al., 2017).

'Participatory Narrative Inquiry' is yet another form of the storytelling approach relevant to collaborative visioning and agenda setting activities. This approach follows from a combination of the anthropological Participatory Action Research, and Narrative Inquiry which is by definition aimed at addressing the multiple variations in values, beliefs, and perspectives, the feelings accompanying them, and trying to make sense of them (Kurtz, 2014). Participatory Narrative Inquiry is used to understand conditions for new collaboration, but also in situations where conflict and contrast need to be preserved (Kurtz, 2014). This specific approach is relevant because in complex unstructured problems, such as the wicked problems SHAPE ENERGY addresses, it is important to first articulate the conflicts and even organise confrontation before negotiation can take place and collaborative actions towards common ground and a common story can start.

Diedrich et al. (2011) demonstrated that creating future stories is indeed a valuable tool to organise the (beginning of) a collaborative visioning processes. In their own storytelling approach they found that storytelling can play a crucial role as a device for coordinating boundary work by *"connecting different social realities and competing interests, thereby enabling and coordinating joint action across social worlds"* (Diedrich et al., 2011, p. 4). What storytelling as a boundary work approach thus can do is integrate and mediate knowledge, and coordinate collective future actions (Trompette and Vinck, 2009, 2010).

Good stories that can be used to align stakeholders around a common future agenda should be aimed at solutions and written as actionable strategies (WAPTAC, 2010). The story form (plot or story spine) that is chosen defines what knowledge is included, which biases are allowed, which voices count, what perspectives are invited to contribute, how the process of collaboration will take place and how multidimensional the future can be that is constructed. It is critical therefore, when collaboratively constructing a story that aims at creating a set of potential futures in the form of, for example, a programme of actions or research agenda, to make sure the beginning of the story spine reflects something the broad community of participants in the process relate to or feel connected to, such as a specific societal problem (i.e. on a local scale if possible) (WAPTAC, 2010). In each of the multi-stakeholder workshops (held in cities across Europe) this will indeed

be the starting point. A second key element is to make sure that the storytelling exercise allows for one challenge to be told and tackled from multiple disciplines and perspectives, thus allowing double loop learning about how roles, values, goals and expertise are relevant to addressing what is considered to be the problem, according to whom, and understanding these different problem definitions and their origin (WAPTAC, 2010). Finally, Diedrich et al. (2011) mention that a 'purpose-means-effect' type of plot where cause and effect and action and outcome are told, works best as a plot to overcome potential problems, paradoxes, and conflicts, and create shared meaning across worlds.

3.8. How storytelling supports monitoring of alignment

Finally, as well as being an effective dialogue tool, storytelling can also be used as a monitoring and evaluation methodology for assessing the learning processes taking place and if and how the co-existence of multiple perspectives and alignment of perspectives were enabled (Mourik et al., 2015). As mentioned earlier, Alterio and Mc Drury (2003) propose five phases for storytelling: story finding; storytelling, story expanding, story processing, and story reconstructing The final stage of this five-stage process - story reconstructing - can be used for such an evaluation. In the evaluation process, the emplotted story can be used to analyse the status quo of a collaboration, and whether stories are starting to align. Alignment, not necessarily towards consensus on the problem, but towards common ground where the diversity of perspectives is articulated and acknowledged, demonstrates that the process of double loop learning has effectively taken place. To do this evaluation, instead of collectively drafting the final future story or programme, a mid-term step can be inserted, where participants in a workshop first draft their own individual new future story based on all they have heard and learnt. Then these stories can be compared (have people's positions changes as a result of the storytelling work?), or even merged. This merging is one of the ways we have used storytelling as an evaluation tool in IEA DSM Task 24 (more about this in the Appendix 8.1.2.). Another valuable assessment tool is the 'Most Significant Change' technique developed by Davies and Dart (2005) and also used in the IEA DSM Task 24 workshops. This involves comparing stories and identifying significant differences between stories as the focal points for next efforts (Rotmann, 2017).

3.9. Summary

In summary, storytelling can thus accommodate diverse voices and perspectives, it can create an environment where there is respect and empathy for diverse ways of knowing and (un)learning, a necessary condition for cross-boundary collaborations as aspired to in the SHAPE ENERGY workshops and sandpits, and for the success of the wider Platform. The storytelling approach can be instrumentally used as a dialogue instrument or boundary procedure to coordinate participation and inclusion of different perspectives across social sciences and humanities and other sectors. The collaborative storytelling methods we will use in the SHAPE ENERGY project will thus help catalyse meaningful discussion between different groups. They will help our participants engage effectively with us and each other, across geographical, sectoral, gender and disciplinary boundaries to combat climate change and create a more sustainable energy future. Finally storytelling will enable us to support the delivery of a key output of the Platform: the SHAPE ENERGY 'Research & Innovation Agenda 2020-2030' that will underpin post-Horizon 2020 energy-focused work programmes. Thus, in addition to discussing disciplinary and sectoral stories in workshops and sandpits, we will also be engaging many different stakeholders in co-producing a 'future' story that will support the development of a programme of work and common agenda for the energy-related social sciences and humanities.

In the next section we translate this knowledge about storytelling as a double loop learning process into concrete guidelines and scripts for the SHAPE ENERGY activities. A selection of alternative storytelling tools are also provided for inspiration in the Appendix.

4. Guidelines for storytelling in the SHAPE ENERGY multi-stakeholder workshops, sandpits and project communication

This section provides the practical guide for SHAPE ENERGY partners and collaborators (and, potentially, for others) to incorporate storytelling into face-to-face events, as well as a brief discussion of related communication approaches. Following an outline of the context of the relevant SHAPE ENERGY activities, the necessary atmosphere and preconditions for effective storytelling are discussed. For both the multi-stakeholder workshops and the sandpits descriptions are given of where storytelling fits into the indicative event schedules, and examples of concrete storytelling scripts to be used are provided, including information on the process for developing the final, tailored, story spines for each event. We note that these plans will be discussed and finalised at the partner storytelling training in September 2017, and that these are guidelines (not strict rules) which can be tailored to suit local context, co-host priorities, and participant needs.

4.1. Contexts: workshops, sandpits, communication

4.1.1. Multi-stakeholder workshops

SHAPE ENERGY will organise and facilitate 18 multi-stakeholder workshops in 18 countries[6] over 2017-2018. Each one-day workshop will involve 20-30 delegates from across local government, business, academia and NGOs. Attendees will focus on local energy challenges (linked to the four SHAPE ENERGY topics[7]), with the flexibility to focus on the specific issues of most importance to workshop attendees and local co-hosts. These challenges will be discussed in light of the next 10-20 years and key will be the discussion of how social sciences and humanities can help combat these challenges, as well as how non-academic stakeholders can help combat the challenges as part of their work. The workshops will be held in the local language: this will avoid an additional hurdle for effective interaction on top of the multi-stakeholder element and being able to write and communicate in one's own language aids telling a good story. At the end of each workshop both actions and research priorities around the challenges will have been identified. The aim of these workshops is thus to generate a diversity of perspectives on the nature of the energy challenges which exist, what their cause is and how to combat these challenges, and to also generate actionable advice for local government, academia, business and NGOs.

4.1.2. H2020/FP7 sandpits

Four Horizon 2020 sandpits in early 2018 will bring together members of current or recent EU-funded (Horizon 2020/FP7) energy-related projects. The sandpits will last for 2 days and each sandpit will be related to one of the four SHAPE ENERGY topics[8]. The language of these sandpits will be English, which is appropriate given this is the language of international scientific collaboration and thus the working language of these projects.

The main goal of the four SHAPE ENERGY sandpits is to gather people together who are interested in improving and innovating in energy research and other processes aimed at creating a more sustainable energy system, and who, crucially, are currently or have recently been involved in EU-funded projects on similar topics to the main issue of the sandpit. The idea is to stimulate new ideas and new contacts in order to encourage interdisciplinary and multi-stakeholder experimentation in future EU projects. Among the interested consortia, places will be allocated to achieve a good balance of expertise across disciplines, work of relevance to the topic in question, gender, and European geographical areas. Several members of each consortium will be present.

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6 In: Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Italy, Latvia, Macedonia, Moldova, Netherlands, Norway, Portugal, Romania, Serbia, Spain, Turkey, UK.

7 Energy efficiency and using less; Competitive, secure, low carbon energy supply; Energy system optimisation and smart technologies; Transport sector decarbonisation.

In part using storytelling methods, SHAPE ENERGY partners will facilitate the sandpits, thereby building the participating consortia's collective capacity to identify SSH opportunities in their project activities and develop impactful synergies between projects, helping consortia embed SSH into their remaining activities, and identifying synergies between their project outcomes, so as to maximise impact.

4.1.3. Project communication

Adopting the storytelling method, and using online channels / viral media where possible, SHAPE ENERGY will create animations for the Platform focused towards promoting the goals of the Platform and encouraging participation. We will also work with the energy practitioners and researchers involved in our multi-stakeholder workshops and sandpits to develop short storytelling videos; a number of such videos have already been produced from early SHAPE ENERGY activities. In addition, infographics will be developed in the course of the project as part of the general communication activities.

4.2. Atmosphere at face-to-face events

As discussed in subsection 3.7., once performed, collaborative storytelling can be transformational. However, attendees at workshops or other collaborative meetings need to be willing to participate in the process. This willingness is dependent on how the process is presented to them, and here the role of the facilitators is key. People first need to feel comfortable participating in storytelling exercises, but secondly they also need to believe that there is something to gain by telling their story (Mourik et al., 2015).

Feeling comfortable is linked to many factors. People need to see that whatever information they will share via the storytelling method will be dealt with in a careful manner. It is therefore imperative to reiterate the ethics procedures SHAPE ENERGY upholds, to be open about how their data will and won't be used (including assurance that data can be 'withdrawn' if they decide they don't want it to be used), and to ask all participants to be respectful of each other, and what is shared. Also, the facilitators (when planning the event in advance) need to be mindful of the positions of participants within their organisations, and what possible dependencies between participants exist. Identifying potentially hindering hierarchical or pre-existing professional relationships and addressing them in the group will help to create a level playing field. If not explicitly addressed and tackled (if necessary by reshuffling table participants) this can create a sense of risk and lack of openness amongst participants. In order to feel comfortable people also need to see that everyone participates, including the workshop facilitators. One way of achieving this is by the facilitators presenting their own individual story at the start of the activity. This will create empathy but also a more level playing field, as discussed in subsection 3.4.

The second precondition for a good atmosphere around storytelling is understanding its use and why it is chosen as an instrument. As well as setting out the overall aims of the event, and how these aims will be achieved during each session of the workshop, it is key to include a specific introduction on the why and what of storytelling in relation to SHAPE ENERGY at the beginning of each workshop or sandpit, after an individual story is told by the facilitators[8]. This should include a short repetitive brief on how all voices will be equal and that the discussions will not go into whether or not something is 'true', i.e. the discussions will not be about fact finding, but about highlighting values and norms, since it is about participation of all experiences, perspectives and thus about inclusion, not exclusion. The aim is to allow all the voices to provide input to the debate and collaboratively generate impact and a vision/agenda.

In the next section we briefly reiterate the specific role stories are playing in these events, to encourage learning, and thus the appropriate blueprint for the story spines that we will build on in the workshops and sandpits.

8 Duneworks/Anglia Ruskin University will create slides on this for the storytelling facilitation training in September 2017, which partners can later on use in their events.

4.3. Storytelling and the story spine: a brief recall of essentials for writing a good story

First, a reminder that a story spine is literally the spine of the story, it is the idea of the plot, which incorporates the purpose and aim of the story, and which can involve guiding sentences that provide a sequence and causal relationship between paragraphs. It thus can involve a set of the beginnings of sentences (*"I dream of..."*, or *"Once upon a time..."*) which, when completed, create a story following a certain pre-defined structure.

The story spines we will use in SHAPE ENERGY will be aimed at learning. Considering we also aim ultimately for some alignment of multiple perspectives and collaboratively creating future agendas and visions, we will use the journey story, which focuses on the learning process without the inherent conflict in hero and villain stories, and with a focus on realistic events (in contrast to most children's stories).

The purpose of our storytelling is twofold, and will thus have two corresponding phases during each event:

1. First we want to create a diversity of stories from individual perspectives allowing people to experience the significance and impact of the future imagined in the story for them and their work and life, as well as hear others' perspectives. These individual stories all need to have a plot that explains actions, actors and causal relationships.

2. Then based on the multiple stories created in the individual session (that both focus on the past and the future from individual perspectives) we want to collaboratively construct a desirable future, that aligns stakeholders around a common future agenda. These collaborative stories need to be aimed at solutions and be written as actionable strategies using the 'purpose-means-effect' plot structure.

The aim of the first phase is to enable participants to write their own stories. Participants will of course have creative freedoms here, but facilitators should emphasise that it is the story that matters, not necessarily detailed facts and figures, and thus that sensory details and images are helpful, and that jokes and metaphors can be used. The aim of the second phase is to have a focus on collaboration across roles and actions on the local level and a focus on drawing out recommendations for research and policy beyond the local context. As such the workshops will use storytelling as a coordinating and visioning procedure in the second phase.

See Table 2 for an overview of the two phases of our storytelling approach and how the individual sessions within each activity (discussed in detail in the subsequent subsections) connect to the five stages of storytelling that need to be present to allow for learning.

Phase	Storytelling stage	Storytelling sessions in workshops	Storytelling sessions in sandpits
1. Inviting diversity from individual perspectives	1. Story finding 2. Story telling 3. Story expanding	✓ Set the story scene ✓ Invite diversity ✓ Discussions between storytelling activities, e.g. group discussion	✓ Set the story scene ✓ Invite diversity from individuals, and each consortium group ✓ Discussions between storytelling activities, e.g. group discussion
2. Collaboratively constructing a desirable future and common agenda	4. Story processing 5. Story reconstructing	✓ First round of envisioning (individual) ✓ Second round of envisioning (collaborative) ✓ Videos	✓ First round of envisioning, in light of scenarios ✓ Second round of envisioning perfect project success from an end-user perspective ✓ Videos

Table 2: Overview of the phases, stages and activities in the SHAPE ENERGY workshops and sandpits.

A common blueprint from which each of the tailored story spines to be used in the SHAPE ENERGY storytelling sessions is provided below in Table 3. Several concrete story spines are detailed for the different activities in subsequent sections. The blueprint is also a background document that facilitators can use to explain to participants about the content of the stories that they will write individually and collaboratively.

FRAMING THE STORY This section needs to identify a shared problem for a broad community that needs to be solved. The description should set out a socially inclusive issue or challenge, thus allowing for one challenge to be told and tackled from multiple disciplines and perspectives, enabling learning about how each role, values, goals and expertise are relevant. Using sensory and personal details increases recall and empathy.
DESCRIBING THE SPECIFIC PROBLEM AND GOALS Now that you have framed the problem this section goes into detail, explaining actions, actors and causal relationships. Here the different interests, mandates, restrictions, needs, opportunities, risks are described. Previous steps taken to implement solutions and creative approaches and their (insufficient) outcome should be outlined. Use jokes and metaphors where possible, and strong active verbs to describe actions, and avoid vagueness about who did what. It is about developing a shared goal that benefits the target group by solving a defined problem and providing opportunity.
DESCRIBING THE SOLUTION AND IMPLEMENTATION Here you describe specific achievements towards success. It is about HOW things happened and WHO undertook what actions, what concrete steps and roles were needed. It is about details.
DESCRIBING THE OUTCOMES All narratives should end where possible with demonstrated successes or other outcomes, or - for stories which have not 'finished' - imagined successes. In the future visioning type of story, success should be envisioned from the individual perspective, including how to achieve it. Numbers can be helpful here, especially with respect to community and economic changes. A good story can end with a first set of successes followed by a vision for improvement through next steps.

Table 3: A blueprint for the SHAPE ENERGY story spine. This is based on the key points described in section 3. of these guidelines and builds strongly on the storytelling spine developed by the Weatherization Assistance Programme Technical Assistance Center (WAPTAC, 2010).In the next subsections the concrete timetables, activities and content of the storytelling in the workshops and sandpits is provided.

4.4.Multi-stakeholder workshops

4.4.1. Timetable

Four storytelling activities are proposed for the multi-stakeholder workshops: (i) setting the story scene, (ii) inviting diversity, (iii) envisioning (two rounds), and (iv) storytelling videos. In between the storytelling activities other types of activities (such as presentations or group discussion) will help provide background knowledge and reflections to feed into the stories to be written. The exact format of those other activities is highly flexible to allow for local context and participant make-up, and there is also potential to reduce the storytelling sessions in length. Storytelling however will be a guiding framework throughout the day. One model for a workshop is given in the indicative timetable in Table 4.

09:00-09:30	Coffee and networking
09:30-09:45	Welcome, introduction to the SHAPE ENERGY project and who's in the room
09:45-10:15	Plenary discussion/short presentation with workshop co-host on local needs
10:15-10:20	Individual stories by facilitators

10:20-10:30	Presentation on why storytelling is used in SHAPE ENERGY
10:30-10:45	Coffee
10:45-12:45	Inviting diversity 10:45-10:55: forming four roundtables 10:55-11:05: writing individual stories 11:05-12:05: reading out stories and discussion of key challenges 12:05-12:45: collaboratively identifying overarching challenges for the afternoon
12:45-13:30	Lunch (including storytelling videos with 1-2 participants)
13:30-14:15	Plenary discussion
14:15-15:45	Envisioning 14:15-14:20: forming (new) roundtable groups 14:20-14:30: writing individual futures around the challenges from the morning 14:30-15:00: reading out and highlighting conflicts, discussion 15:00-15:45: writing one collaborative story, conflict highlighting / resolving
15:45-16:15	Carousel, visiting the other tables and adding thoughts, over coffee
16:15-16:45	Wrap-up of day, take home messages, collecting participant feedback

Table 4: Guide outline of multi-stakeholder workshop timetable.

During the course of the day there will be a shift from individual, local and 'here and now' stories to a collaborative future vision story for the city. SHAPE ENERGY partners will also undertake participant observation during the day. Both the plenary group discussion in between the storytelling activities, as well as one of the roundtable discussions might be valuable scenes for this activity.

4.4.2. Setting the story scene

After a welcome and introduction to the SHAPE ENERGY project and to what social sciences and humanities are, aims of the day, an introductory round as to who's in the room, and potentially scene-setting on the theme of the workshop with the local co-hosts, the day will start with a short individual storytelling by the facilitators, to anchor empathy and comfort with storytelling (2 minutes per story). The facilitators[9] will chose one local challenge from one of the four energy topics that SHAPE ENERGY focuses on, and use a storytelling script (see Box 1) to tell their 'here and now' individual city story.

As previously described, after this there will be a 10 minute presentation on the 'why' of storytelling in SHAPE ENERGY which will help participants understand the benefits of storytelling and what they will gain by participating in the storytelling during the day, as well as ethics procedures.

4.4.3. Inviting diversity

Prior to the workshops the facilitators will have prepared an overview of the local energy and SSH situation in relation to each of the four topics SHAPE ENERGY focuses on. This overview will be based on a scanning exercise of the city (its demographics, socio-economic situation, policy processes, research conducted on city, and key partners), and on the four SHAPE ENERGY topics (specific challenges, initiatives in the city, stakeholders and strategic objectives). However, not all four topics will necessarily be discussed at each

9 The day is planned to work with two facilitators provided by the partner organisations. The concrete storytelling activities to be performed will be provided (by Duneworks/Acento Comunicación) in the form of 'game rules' cards on the tables, to aid the group and the designated lead (either a facilitator or one of the group participants). If more facilitators can be provided, e.g. one per table, this will of course aid in-depth discussion.

workshop. Instead, based on this local overview it may be decided to focus the workshop on one or two pertinent topics, in part to make it attractive to participants and worth their time[10].

In the context then of the pre-defined topic(s) of the workshop, the identification of very specific or concrete challenges related to that topic, to hone in on during the remainder of the day will be performed in the morning, using storytelling.

The aim of this morning session (which can last a maximum of 2 hours) is to identify the impact of different challenges and issues playing out at the local level on the daily practices of the participants, as well as what the participants see as necessary (both already available and missing) SSH contributions to this situation. The session will thus start with a focus on the individual (disciplinary, sectoral) local city perspectives and invite participants to describe their city experience in respect to the topic(s) identified prior to the workshop, in order to come up with more specific challenges.

Four roundtables (which could be one per energy topic, or if a decision is made to focus on fewer topics, then arranged according to facilitators' knowledge of participant interests) will be formed with a maximum of 8 people each. Each table will appoint a lead (either one of the workshop facilitators, or an attendee). Each table will preferably represent a good mix of local government, business, academia and NGOs and will need to be decided upon by facilitators prior to the workshop.

Storytelling spines will then provide a guiding framework for story writing. The local needs overview of the energy and SSH situation will have provided the necessary basis for drafting the first few sentences of each element of the story spine for the first roundtable session, tailored to each workshop / table. These spines are thus flexible in terms of which end-users / type of action is of interest to table participants. Facilitators will decide upon table groupings, and particular spines for each table group, prior to the workshop. These two decisions will be interlinked, but we note that the spines can be similar across tables, where appropriate.

Each participant will be asked to complete the sentences in the story spine from their specific (disciplinary, sectoral) viewpoint, highlighting the impact on their daily practices. Box 1 provides an example of such a story spine. This first storytelling exercise is therefore about framing perspectives and discussing specific problems and goals/needs.

Participants will take 5-10 minutes in quietude to fill in the story spine at the beginning of the first roundtable session. Then each of the participants will read their story out loud to their group (around 1 minute per story). During each read-out, the designated facilitator/lead will write down key elements on a flip-chart. Immediately after each individual story is read out, the table is asked to add their own 'key lessons' (including key challenges, needs, actions and roles for research and local authorities) from listening to the story. This generates the first 'empathetic dialogue', where all perspectives are valid. The story does not need to end with 'success'.

The subsequent discussion (around 40 minutes) will then be centred around identifying one overarching challenge in the form of a sentence that can feed in the next round, which encompasses the challenges that different perspectives experience. Such a sentence could be for example: *"Our key challenge is..."* As such the stories will provide the material to focus on for the remainder of the day.

10 For example the Cambridge workshop is likely to focus on sustainable housing as part of: the Cambridge City Council Climate Change Strategy, the Greater Cambridge City Deal, and the (current and upcoming) strategies of the new devolved Cambridgeshire and Peterborough combined authority.

My City Story *(add picture of city for each workshop)*

The city I live in/work in/work with today has (*details of the demographic, social, economic, and environmental situation based on local needs review*). For me as a (NGO, citizen, researcher, local authority, business) this means that every day I...

Describe in a maximum of 4 sentences how the demographic, social, economic and environmental situation influences your daily practices, what you do or cannot do, and what that means to you.

My city faces many challenges around energy efficiency and using less/low carbon economy/ smart and optimising of systems/sustainable transport such as (*insert input from local needs review*). In my role as (NGO, citizen, researcher, local authority, business) I experience these challenges in the following manner...

Describe in max. of 4 sentences how you (in your role) experience these challenges on a daily base and what that means to you/what you need.

and the following challenge is particularly important for me because...

Describe in max. 4 sentences how the challenge influences your daily practices, what you do or cannot do, what that means to you, what you need.

Research on these challenges has led to *(sentence describing what research was conducted at local level and key outcomes based on review)*, for me this has meant that...

Describe in max. 4 sentences what research and outcomes influence your daily practices, what you do or cannot do, and what that means to you, what you need.

Much is happening in terms of initiatives such as (*sentence describing the initiatives in the city based on local needs review*) led by (*describe the stakeholders active in the city based on local needs review*), and I am involved/impacted by this....

Describe in max. 4 sentences how the initiatives and stakeholders influence your daily practices, what you do or cannot do, what that means to you, what you need.

But my city is tackling (*sentence describing here the strategic objectives at local/national/ international level and policies to achieve them based on local needs review*) and that means that....

Describe in max. 4 sentences how the objectives and policies influence your daily practices, what you do or cannot do, what that means to you, what you need.

What I am doing every day to make my city more efficient/low carbon/smart and optimized/ sustainable with respect to transport is...

Describe in max. 4 sentences how you contribute to combatting the challenges.

Box 1: Example story spine for the 'inviting diversity' round of the multi-stakeholder workshops.

4.4.4. Envisioning an energy efficient/low carbon/smart and optimised/green transport city, and the role stakeholders and SSH have to play

This next step in the workshop (after a lunch/refreshment break, and potentially a plenary session) is to start working collaboratively at creating an outlook at the city level for how to tackle the challenges identified in the morning over the next 10-20 years. This includes how (energy-)SSH can help different stakeholders combat these challenges, as part of improving their business models (or service delivery, for local authorities), as well as what priority areas for research should be. Preferably the groups will be mixed up (either according to groups decided in advance or by allowing people to make a choice as to which challenge to go to) to give people a chance to network, but if deemed preferable the groups could remain the same.

A new story spine will be used in this second storytelling round (see Box 2), and used in two different ways in two different halves of the session. At the start, the workshop facilitator(s) will explain the structure of the overall session, and the two tasks. In the first half, each individual participant is asked to envision one of the selected challenges (the final sentences which were written by each table at the morning session) to be tackled in the course of the next 10-20 years, with specific focus on:

- their own role;
- what they need from SSH research and policymaking to be best equipped to take an active role themselves; and
- what SSH research and policymaking need to contribute in addition.

These stories will be read out loud in the small groups. No discussion will take place about the content, there is no right or wrong. Conflicts are allowed between the stories, it is an inclusive writing exercise. The group then collectively identifies any conflicts and discusses them as a means to further increase the learning about differences in needs, mandates, visions, etc.

In the second half of the session each group, under guidance of the designated group lead/facilitator, will start writing one collaborative story, through each individual adding a sentence to the previous sentence, thus literally writing their voice into the collective story. The writing happens sequentially, each person adding a sentence to the previous one. This can continue until everything that people want to is written into the story (thus people can have more than one 'turn'). Here groups will discuss and amend the existing story over a few iterations to come to the final version. If there are conflicts in the text, the group can take 10 minutes maximum to discuss the conflict with the aim to finding a compromise; if that is not reachable, then this can be highlighted in the story. This collaborative story reconstruction aims to enable participants to work towards a consensual interpretation of the future, increasing their mutual understanding.

The group lead/facilitator then takes the lead in the writing up the final story, with the group reacting to the final version. It is written on a flip-chart and put on the wall.

Preferably this round is enriched with a walking tour, where the groups, after they have written their own collective story, walk around to the other three challenge tables/corners and add their experiences and reflections to the other three stories (e.g. using post-its). During this time the new group can add to the story, not change the former story's content. A maximum of 30-45 minutes is anticipated for this (10-15 minutes per table) but the session can be fairly flexible on timings.

This reconstruction stage of the storytelling approach is also used to see if stories across different groups start to align. Alignment after all is an outcome of consensus and demonstrates that the process of double loop learning is effectively taking place.

Our Future City Story

I/we dream of a future city where a typical day will look like this...

Round 1 (individual writing): Describe in a maximum of 4 sentences how a normal day at home/work/travelling looks like from your perspective and with the selected challenge in mind (energy efficiency/low carbon/systems optimisation/transport).

To solve the challenge of *(insert selected challenge that came out of the morning exercise)*, many actions were undertaken in the first 10 years (2017-2027)...

Describe in max. 4 sentences what actions took place, or what policies were designed, by whom, including your own.

And these actions were undertaken in the last 10 years (2027-2037)...

Describe in max. 4 sentences what actions took place, or which policies were designed, by whom, including your own.

and the following social science and humanities research proved particularly valuable to achieve the change ...

Describe in max. 4 sentences what kind of research by what kind of researchers was undertaken with what kind of key outputs.

This research was of great importance to... because...

Describe in max. 4 sentences what you (in round 1, individual writing) or all stakeholders (in round 2, collaborative writing) benefitted from the research listed above, why and how.

Box 2: Example story spine for the 'envisioning' activities at the multi-stakeholder workshops.

The workshop finally needs to include a group wrap-up to conclude the day, at this point feedback will also be sought from participants. In addition, videos will be filmed during the day, see subsection 4.6.

4.5. Horizon 2020 sandpits

4.5.1. Timetable

A detailed indicative timetable for the sandpits is already available[11], designed by the sandpit coordinator Politecnico di Torino, and multiple additional activities will be taking place alongside storytelling. Within this timetable, the same four storytelling elements as for the workshops are proposed to be incorporated as appropriate: (i) setting the story scene, (ii) inviting diversity, (iii) envisioning, and (iv) videos. These will interlink with the other activities, for example by using materials developed in other sessions. Storytelling will not be a guiding framework for the whole event, as it is in the multi-stakeholder workshops, but will rather have more of a supporting function for the other activities in both days of the sandpits. During the course of the sandpit there will be a shift from individual, project based and 'here and now' stories to collaborative future vision stories for interdisciplinary working within and across projects.

SHAPE ENERGY will also undertake participant observation during the sandpits. Both the more plenary group discussions in between the storytelling activities, as well as one of the envisioning activities might be valuable scenes for this activity.

11 https://shapeenergy.eu/index.php/activities/h2020-sandpits/

4.5.2. Setting the story scene

The start of the sandpit will include a welcome and introduction to the SHAPE ENERGY project, explore the role of social sciences and humanities in energy research, outline the aims of the two-day event, introduce all participants, as well as detail ethics procedures applicable to the whole event. The first session to involve storytelling (likely on the afternoon of the first day) will start with a short individual storytelling by the facilitators, to anchor empathy and comfort with storytelling (2 minutes maximum per story). The facilitators will write their stories in advance using the story spine below (Box 3) to discuss in particular their experience with interdisciplinary cooperation, and/or their experience with integrating social sciences and humanities in international projects in the field of the topic of the sandpit. There will then be a 10 minute presentation on the why of storytelling in SHAPE ENERGY which will help participants understand the benefit of storytelling and what they will gain by participating in the storytelling over the two days.

My Interdisciplinary Collaboration Story

We dream of more and more effective collaboration between disciplines and sectors in (*energy efficiency and using less/low carbon supply/energy system optimisation/decarbonized transport*) projects, because...

So far this has been a struggle for our scientific discipline because...

There are some disciplines and sectors that I like working with, such as...

This successful collaboration lies in...

We are able to tackle the following problems more effectively because of this collaboration...

We are not there yet, and what we need to do next is...

So that in the near future we can design projects that...

Box 3: Example story spine for the 'setting the scene' and 'inviting diversity' activities at the sandpits.

4.5.3. Inviting diversity

On day one, in building up to the afternoon 'priorities contest' (where different groups defend energy-related priority statements in a collective debate), the first main storytelling activity is proposed to be undertaken. This will generate cause-effect and relationship stories based around topic-related problem statements developed in the morning sandpit activities.

Each consortium will first individually and in a second round as a group, write their story using the same story spine the facilitator(s) introduced (Box 3), but with a selected problem statement as a focus point. Preferably each set of consortium members will represent some diversity of disciplines, sectors, experiences, genders and/or ages. Each consortium will sit at one table and individuals will have 5 minutes to write their individual story in quietude. Each consortium member will be asked to complete the sentences from their specific (disciplinary, sectoral) project viewpoint, highlighting the impact (from the perspective of the problem statements that were selected) on their daily work practices. In the next round, the consortium members will have 15 minutes to discuss as a group, consolidate the stories and collaboratively write a consortium story. Each consortium will then read out their story to the entire group (all consortia) and the jury selected by the organisers for the priorities contest activity can then use the stories as part of the basis for the question and answer session.

This first storytelling exercise will generate a set of stories with pluralistic perspectives based on the different views of collaboration across disciplines on energy-related topics in projects funded by the European Commission. It will collect the different experiences around the table and identify both available

and missing SSH contribution to the problem statements. This first activity will focus the group on what the sandpit is about and frame their thinking for the remainder of the event.

4.5.4. Envisioning more successful interdisciplinary projects

Storytelling is proposed to be used twice on day two, alongside the many other activities already planned by Politecnico di Torino.

The first storytelling round can be integrated into the session aimed at proposing ideas and scenarios. In this session, scenarios will be developed as solutions to the prioritised problems from day one. The storytelling exercise can provide additional richness to these scenarios by writing them as project success stories first from a consortium perspective and in a second round as a collective cross-consortia story. The storytelling techniques will focus on stimulating the debate about the pros and cons of the proposed scenarios, and enable the consortia to identify SSH research challenges / needs they could bring to their project delivery to achieve their vision.

Box 4 provides the draft template of the story spine to describe a consortium success story. The stories (written collectively by the consortia, not by individual participants) will be developed using this spine over 30 minutes and then read out loud to the whole group (all consortia). Conflicts are allowed between the stories, it is an inclusive writing exercise. The entire group of all consortia will then collectively identify the pros and cons of the proposed project approaches, to be written up on flipcharts. In a 30 minute plenary discussion with all consortia these pros and cons can then be discussed as a means to further increase learning about differences in needs, mandates, visions, etc.

This session will last a maximum of 1.5 hours and be about merging all the consortia viewpoints on the prioritised problems in a collaborative (both within and across consortia) story writing exercise.

Our Future Interdisciplinary Energy Project Story

I/we dream of an interdisciplinary project where a typical working day will look like this...

Describe in a maximum of 4 sentences how a normal day at work looks like from your consortium perspective and with the selected challenge in mind (energy efficiency/low carbon/systems optimisation/transport).

To solve the challenge of *(insert selected challenge)*, different types of knowledge and expertise were used and we used specific methods to collaborate...

Describe in max. 4 sentences what knowledge and expertise was included and why and how the knowledge, expertise and methods fit in the vision and roadmap of the consortium.

Many actions were undertaken by different researchers and other stakeholders in our consortium...

Describe in max. 4 sentences what actions took place, by whom, including your own, and in particular how the typical challenges of interdisciplinary working were overcome and how these actions fit in the vision and roadmap of the consortium.

Of course there were pros and cons for this type of working, and regarding the knowledge and expertise we included ...

Describe in max. 4 sentences what these pros and cons were and how they were either addressed or how they impacted the consortium and its success.

This research was of great importance to... because...

Describe in max. 4 sentences what and how your consortium benefitted from the research listed above.

Box 4: Example story spine to be used during the first round of 'envisioning' at the sandpits.

The second storytelling exercise on day two is proposed to be interlinked with the 'implementing solutions' session. Starting from the consortium scenario stories developed earlier in the day, participants belonging to different consortia will now work together in order to reconstruct an end-user perspective story, e.g. from the point of view of those who will use their findings, to understand the impact of the findings, initiative or policy on end-users.

Mixed (across consortia) table groups will be formed and will have 30 minutes to write one collaborative story, through each individual adding a sentence to the previous sentence, thus literally writing their voice into the collective story. The writing happens sequentially, each person adding a sentence to the previous one. This can continue until everything that people want to is written into the story (thus people can have more than one 'turn'). Here groups will discuss and amend the existing story in a few iterations to come to the final version. If there are conflicts in the text, the group can take 10 minutes maximum to discuss the conflict with the aim to finding a compromise; if that is not reachable, then this can be highlighted in the story. This collaborative story reconstruction aims at having the participants work towards a consensual interpretation of future projects, increasing their mutual understanding. Box 5 details a draft template that can be used in this last round of storytelling.

Preferably this round is enriched with a walking tour, where the groups, after they have written their collective story, walk around to the other tables/corners and add their experience and story to the other stories (e.g. using post-its). A maximum of 45 minutes is anticipated for this (15 minutes per table) but the session can be fairly flexible on timings. This reconstruction stage of the storytelling approach is also used to see if stories across different groups start to align. Alignment after all is an outcome of consensus and demonstrates that the process of double loop learning has effectively taking place.

Our End-user's Story on the Impact of this Future Interdisciplinary Energy Project

This interdisciplinary project motivated me (the end-user) to do something about the issue of *(insert topic of the sandpit)*... because...

Describe in a maximum of 4 sentences WHO the end-user of the findings of the project is, HOW the end-user was motivated, approached or seduced to act on the issue and WHY this resonated with the end-user and how the findings of the project contributed to this.

I started using the knowledge and findings generated from this consortium as follows...

Describe in max. 4 sentences WHAT knowledge and expertise was used, WHY it was relevant to the problems experienced by the end-user or his/her vision, and HOW the end-user used the knowledge and findings.

What I needed from the project to be able to use the knowledge and findings was...

Describe in max. 4 sentences what the content and interaction needs and thus delivery requirements from the consortium were and how the consortium met these end-user needs.

Using this knowledge and these findings led to... and cost me...

Describe in max. 4 sentences what the impact for the end-user was of using the knowledge and findings, including pros (positive outcomes) and cons (costs, drawbacks).

This research was of great importance to me... because....

Describe in max. 4 sentences what and how the end-user overall benefitted from the research and how, both in the both short-term and long-term.

Box 5: Example story spine for the second 'envisioning' round at the sandpits.

4.6. Storytelling videos and cartoons

During lunchtime or refreshment breaks, facilitators and assistants will work with a few workshop/sandpit attendees to develop one or more short storytelling videos per event. Storytelling videos help participants to stay problem- and action-oriented, without becoming stuck. It is also a more memorable way of communicating, which helps avoid the pitfalls of either overly technical, or overly generic / non-specific discussions. Facilitators will therefore identify interesting voices and perspectives from the sessions and ask these to be repeated on camera (if the participant is willing), for a 1.5 minute quick story. The first of these videos were collected by SHAPE ENERGY partners at the eceee summer study 2017, showcasing interesting recommendations for either interdisciplinary working, multi-stakeholder working or better uptake of SSH research in policymaking. See Figure 5.

As mentioned in the first section of these guidelines, when organising double loop learning through storytelling, especially when potentially conflicting elements or painful relations are to be discussed, such as can be the case between disciplines, methodologies and between science and non-science stakeholders, the real time drawing of cartoons or cartoonlike reporting of the discussion can be very useful. In some cases (where local budget allows), the use of a cartoonist to draw out discussions when they happen may be included in the workshops and sandpits.

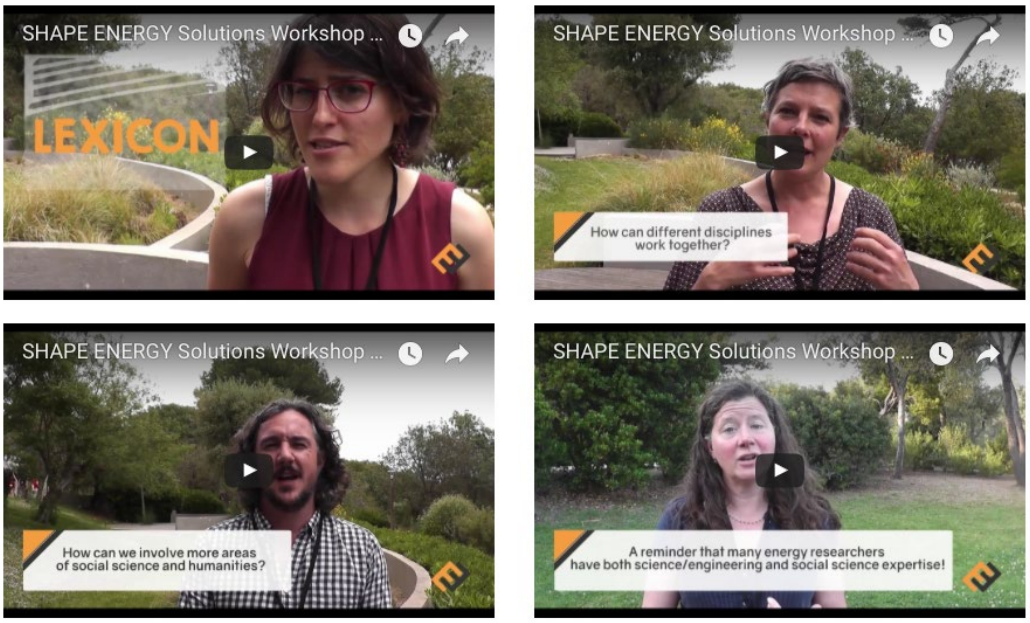

Figure 5:Short videos were made with participants of the SHAPE ENERGY solutions workshop at the eceee summer study 2017, highlighting key insights into interdisciplinary and multi-stakeholder working. See https://shapeenergy.eu/index.php/videos/.

5. Summary

The SHAPE ENERGY Platform is working to develop Europe's expertise in using and applying energy related Social Science and Humanities research (energy-SSH) to accelerate the delivery of Europe's Energy Union Strategy. Interdisciplinary and multi-stakeholder working is a core part of project activities, and using innovative methods proven to enable collaboration and mutual understanding is a central pillar of the Platform.

One of these innovative methods is storytelling.

This report discusses the relevance of storytelling approaches for SHAPE ENERGY and similar projects. It discusses how storytelling can help address some of the challenges of interdisciplinary work and multi-stakeholder processes, especially when focused on wicked problems. In the report we identified the following key challenges to the SHAPE ENERGY type of interdisciplinary and multi-stakeholder processes focused on wicked problems:

1. Contestation between different forms of knowledge, and thus different voices, due to a lack of understanding, appreciation of and learning about the relevance and validity of different knowledge claims, approaches and definitions.
2. A lack of opportunities to 'unlearn' one's own position and appreciate the importance of other voices and perspectives.
3. A focus on consensus and solution too early in the process, instead of learning and sense-making through exploration and explanation, allowing conflict and overcoming it by creating empathy for different perspectives.
4. Consequently a difficulty in creating inclusive processes focused on a diversity of voices and perspectives.
5. A lack of impact due to no collaborative construction of future visions and agendas and/or little alignment between stakeholders.

Storytelling approaches can help overcome these challenges by supporting:

- Learning and unlearning;
- Empathy and conflict solving; and
- Inclusion and Participation.

In addition storytelling is a strong envisioning, scenario building and planning and agenda setting tool, which in addition aids learning about alignment amongst stakeholders, both across disciplines and across sectors.

The lessons learned about the relevance and potential of storytelling have been translated into concrete guidelines for the multi-stakeholder workshops and sandpits that the SHAPE ENERGY project will facilitate. The Appendix gives an overview of additional inspiring storytelling examples highly relevant to multi-stakeholder and interdisciplinary projects, in the form of tasters of other uses of storytelling in different scientific and other settings.

Together, the introduction to storytelling and detailed guidelines contained here, although concretely designed for the SHAPE ENERGY workshops and sandpits, are of relevance to many other types of similar activity and we strongly encourage their use!

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8. Appendix: other storytelling tools

The storytelling approach is not only as old as humanity, but - as the main report highlights - has multiple applications in a variety of scientific and non-scientific domains, including as a communication tool for non-expert audiences (Dahlstrom, 2014). In the energy field storytelling has already been used widely, from scenario planning to eliciting collaboration across disciplines and sectors. In this Appendix we discuss several alternative examples of storytelling used in the fields of energy and climate change. First come examples most closely aligned to the methods to be used in the SHAPE ENERGY project (mainly based on the use of story spines), before brief 'tasters' of a variety of alternative methods. The examples are not aimed to be exhaustive, but inspirational.

8.1. Storytelling to highlight perspectives, start a dialogue and create double loop learning

8.1.1. Task 24: using end-user perspectives to explore different disciplinary models

This first example of using storytelling comes from the International Energy Agency's Demand Side Management (DSM) Technology Cooperation Programme project entitled 'Task 24: Closing the Loop'. This task aimed to create more effective dialogue amongst researchers, policymakers and practitioners working in the field of behavioural change and energy DSM. SHAPE ENERGY, through Task 24 former co-lead and partner Duneworks, builds its storytelling methodology partly on the work already performed in this task (alongside the other learnings gathered in the first sections of this report) and therefore this example is very closely aligned to the methods to be used in the SHAPE ENERGY project.

Task 24 started using storytelling in 2013 when faced with the large variability of both the models of behaviour and behaviour change being used, and the stakeholders applying the models. Task 24 realised it would face a potential communication problem both with the researchers involved, but also the policymakers and practitioners it aimed to reach. Each theoretical model of behaviour comes from a discipline with very specific jargon[12]. Policymakers also have a very specific language and so do business and practitioners. Storytelling in Task 24 was used as a way to demonstrate how certain theories of behaviour and behaviour change were impacting the design of interventions such as subsidy schemes, and therefore their impact on or message to the target group. By using a specific story spine (a set of questions that needed to be answered in the story) stories were written as being 'told' by the designer of the intervention, and used to demonstrate the 'message' that story was conveying to the target group of that intervention. As such, the story could both highlight how a certain theoretical approaches impacted design, and how this design impacted end-users.

The storyline used to put the end-user's perspective centre stage was based on the following questions that an end-user would ask when confronted with an intervention (Mourik and Rotmann, 2013):

- How am I motivated or approached or seduced to respond, or change my behaviour?
- Why should I do this?
- What do I need to do and what will others do? What will it take or what will it 'cost' me?
- Will I get help?
- What behaviour needs to change and how much will I need to change?
- Will it be difficult?
- What will I gain?
- What is in it for me?
- Will I get feedback that I understand and that I trust and that tells me what the result was of my actions?

12 For a more detailed analysis of the use of jargon in the field of energy-related social sciences and humanities see Foulds, C. and Robison, R., 2017. *The SHAPE ENERGY Lexicon - interpreting energy-related social sciences and humanities terminology*. Cambridge: SHAPE ENERGY. Available via: https://shapeenergy.eu/index.php/publications/.

See Figures 6 and 7 below for two examples of stories written on the impact of specific disciplines (neo-classical economics and socio-technical systems approaches respectively) on the design of a subsidy scheme for retrofitting. These stories were written by the project partners in Task 24, Duneworks and SEA, after a careful analysis of the theories and models of change and behaviour.

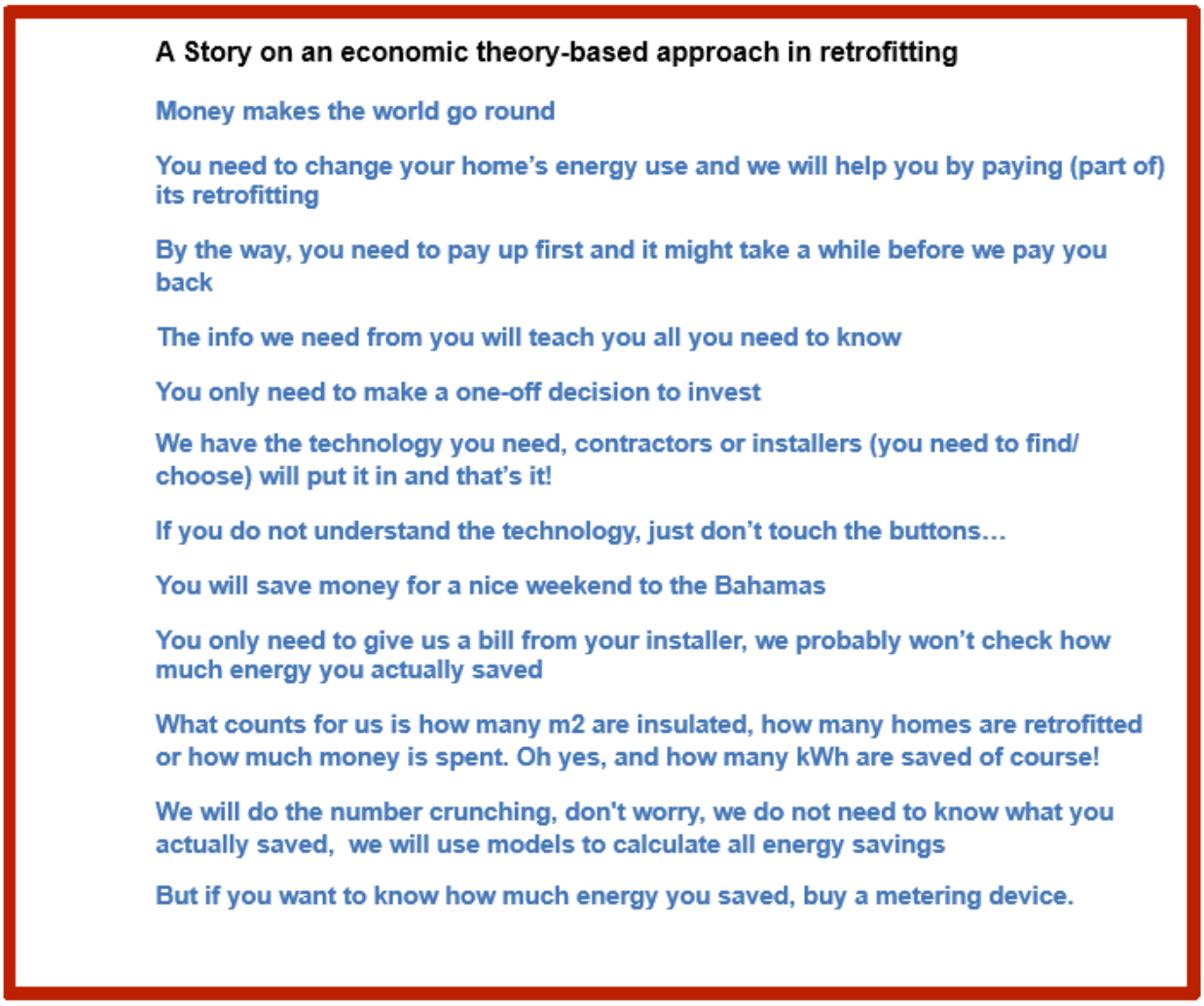

Figure 6: A disciplinary story on retrofitting, according to a neo-classical economics approach, from Mourik and Rotmann (2013).

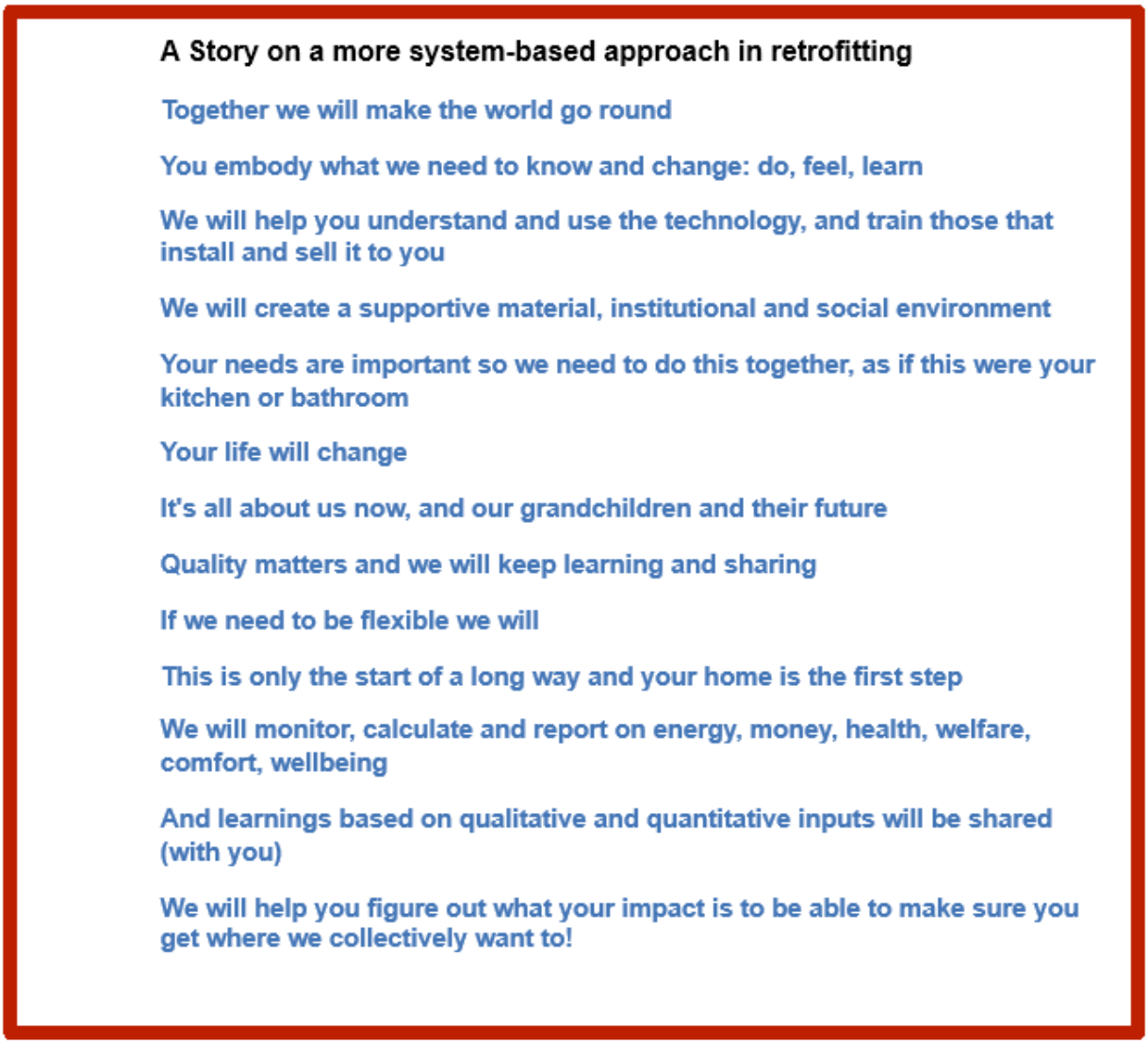

Figure 7: A disciplinary story on retrofitting, according to a socio-technical systems approach, from Mourik and Rotmann (2013).

These types of stories can thus be used to demonstrate the focus of specific theoretical perspectives, and their impact on the design of interventions in the energy field. As such this type of storytelling can be a great first step in an interdisciplinary dialogue aimed at fostering understanding of the different versions of reality different disciplines construct.

8.1.2. Storytelling to highlight lessons learnt and evaluate learning in collaborative processes

Again for Task 24, a workshop of 15+ stakeholders were gathered who were involved with the use of ICT at the University of Groningen. The stakeholders ranged from students and lecturers to researchers, demand managers, facility managers, ICT support department workers and others. The workshop aimed to create a first step in a collaborative process of greening the use of ICT and/or using ICT to green the University. After a few hours discussing each other's roles, mandates, instruments, restrictions, needs etc., each participant was asked to write their individual perspective about their daily life with respect to ICT today and how they would like it to be in the future. A fairy tale story spine was used as a template for this. That is, participants were given the beginnings of a set of sentences to complete (*"Once upon a time... Every day... But, one day... Because of that...until finally... and, ever since then..."*) as developed by Kenn Adams of Aerogramme Writers'

Studio, in 1991[13]. When the story writing was finished, each person read one of their story sections of the 'fairy tale' out loud and then the next person continued with their next section.

Storytelling was here used as a way to *monitor and evaluate* how much collaborative vision had developed during the dialogue that took place a few hours before. If the story 'flowed' and was coherent, this was a sign that alignment of perspectives, understanding of each other's role and alignment of vision and actions to get there had taken place. If one person's story about the problem to be solved, the definition of that problem etc., was out of line with the rest, it was a clear indication that work remained to be done to find common ground on collaboratively defining the issue. This does not mean that one definition needs to emerge on the problem and its cause and solution, but that the diversity of perspectives, values, solutions need to be utilised to develop common ground and a starting point for defining solutions. The story (Figure 8) below is a combination of the different individual sections of the participants' stories. The story flows, and this was a sign that collaborative impact had been generated in the workshop.

Once upon a time there was a building that was so heavily used by young students, that it had to be heated up 24 hours per day, almost every day. And then the students also wanted a wide range of services, even if they only were inside the building briefly. And did they turn the lights off as they went, or their computer off? No chance!

Every day the people had to work in this warm stuffy building, without ventilation. The first thing they did in the morning was open the windows and keeping them open for fresh air. They felt a genuine regret about the enormous loss of heat, but they honestly did not know what else to do.

Then the people went looking for convenient solutions that were more durable than traditional solutions. But when the policy devil appeared, he called "that we have already decided" or "those capabilities we already have." Satisfied, he sat down and let things take their course. The stones were safely on the shore.

However, fortunately, soon a green savior turned up with new ideas. He motivated people, devised solutions for efficient use of space and cool PCs. People began to see how it could be better.

Until, finally, everyone was more motivated to take an active role in the university to be CO_2 neutral. Since then everyone is proud that the university can continue to exist without leaving a large infinite footprint.

Ever since then, the quality, the society and the cumulative impact of education in the new building of Groningen and Hanze University all have much more space and facilities at much lower costs.

Figure 8: Collaborative story from the Dutch Groningen University workshop for Task 24. This is a collation of sentences from several workshop participants.

8.1.3. Visioning a more than just retrofitting process

Storytelling was also used by Duneworks as a visioning exercise in the Dutch Neighbourhood Transformer project[14] where more than 200 homes in a deprived neighbourhood were to be retrofitted. Two stories were told, one narrating the existing situation called *"The traditional approach to retrofitting"*, and one describing the desired future from the perspective of the residents in the neighbourhood called *"A better approach to retrofitting: the voice of the home owner"*. In this second story we used the Environmental Justice Framework that highlights five elements to take into account in these type of change processes: acknowledging diversity, allowing participation, discussing distribution issues, building capacity and creating ownership (Breukers et al., 2016). These contrasting retrofitting stories proved a powerful communication mechanism to institutions such as the housing corporation involved. The same stories were used in different settings involving building companies, municipalities and other building sector stakeholders. In Figure 9 we provide

13 See http://www.aerogrammestudio.com/2013/06/05/back-to-the-story-spine/.

14 See http://www.duneworks.nl/project-en/stem-buurttransformator/.

the story as written from the perspective of the residents, taking the Environmental Justice elements into account.

A Better approach to retrofitting: the voice of the home owner.

Our place is unique, like all places, so do not use a one-size-fits all. The people living here are diverse, and we have different backgrounds, capacities, needs and wishes. Our home is part of a neighbourhood with networks, a history and specific opportunities and threats to your retrofitting actions.

Get to know us! Talk to us! Find out how we experience our place, our homes and what matters to us. Energy and Efficiency will most likely not be all important to most of us. But other things might. You need to find out how your retrofitting and efficiency gains might help achieve our non-energy related goals!

If you want us to accept the retrofitting and use the homes and installations the way they should you need to engage us! We are the experts here, we know our home and place best! But we do not know the new stuff and installation you put in, so teach us how to use them.

But more importantly, we are going to feel the change for better or worse so we deserve to participate. And that means more than just being informed! We want to be able to advise, but consulted, co-decide. This is our home! And our bill in the end!

We do not want to bear all the risks, some of us simply cannot, some of us are too vulnerable. And if we feel the distribution of risks and benefits is unfair we will not trust you anymore and if we can we will oppose and challenge you!

So make sure risks are removed or that we fully understand them and that we can have a good discussion on trade-offs.

However, perhaps not all of us can be fully engaged. We need you to help us be able to engage. We need resources such as time, money, people, meeting space. We need knowledge and we need skills to participate. For example, we might need training to know how to use the installations or smart thermostat and feedback displays. Find out what we need and help us achieve that.

Of course we want to feel ownership to some extent. You will be gone when the retrofitting is done, but we will still live here. We want to discuss with you how much we can and what to be responsible for certain things, such as maintenance of installations or training of new neighbours.

So what we want is a learning process around retrofitting where you appreciate our diversity, invite us to engage and accept some do not want to engage at all, protect us against unfair distribution of costs and benefits, negotiate trade-offs with us, help us build up the capacity to be engaged and able to use our home and its installations effectively, and help us be able to feel ownership.

But perhaps most importantly, we want you to understand we live in our home, that energy is a means to achieve things that matter to us, and that Energy Efficiency might not be relevant to us, but perhaps it can help us achieve things that do matter to us, such as a healthy home, less draught, a new kitchen, and yes, also save money for more important stuff.

So we need to also see how you and I, WE collectively learn why things work out well or do not. So yes, we need to monitor the actual energy saved. But we also need to monitor the process, and how we learn together to make sure you do as well or even better next time.

THE END

Figure 9: A story demonstrating how visioning the impact of an initiative or policy can be performed and used to create actionable advice for different stakeholders.

8.1.4. Visuals as tools for knowledge brokering

Multiple projects are using video stories to either collect the diversity of perspectives, or provide peer-to-peer knowledge transfer. This is also something we will incorporate into SHAPE ENERGY. The Insero Live Lab for example used video stories to capture household experiences with new energy technologies: see Figure 10. Task 24 used a similar approach to highlight different challenges people experience when trying to change their energy behaviour via 'energy stories' with energy efficiency experts: see https://www.youtube.com/watch?v=wbe83S8FfO0.

Figure 10: Insero Live Lab created videos of families testing out new energy technologies in their own homes, see https://youtu.be/OX_dmqI7y48.

8.2. Tasters of other storytelling techniques

The tasters below are less directly related to the methods used in SHAPE ENEGY activities but do provide an interesting taste of other storytelling techniques being used in scientific settings.

8.2.1. The Q-sort methodology

Q-sort is a research method used in the social sciences to map the diversity of perspectives on a societal challenge or controversy (e.g. the sustainable use of biomass; deployment of wind turbines). It is a technique which can help map subjectivity, and the different perspectives identified can be presented as a set of interlinked statements about what is (un)desirable and (un)attainable, and why or why not (Breukers, 2007). The added value lies in a more nuanced presentation of diverse views that moves beyond polarised positions that usually characterise societal debates around wicked problems (Hisschemoller et al., 2009; Cuppen et al., 2010). When used as a point of departure for a stakeholder dialogue, it can help the participants to better understand each other's subjective positions which contributes to the quality of the discussions ("*Now I understand why you say this, because I understand the underlying perspective better*"). An example of this is a Dutch stakeholder dialogue on sustainable biomass that took place in 2009. It started with the use of the Q-sort method whereby 75 stakeholders were interviewed and asked to rank statements on biomass, presented on small cards. After analysing their responses, six perspectives on biomass were constructed with the participants, and used as a basis for the dialogue process. The discussions were partly

organised around cartoons depicting specific biomass chains (see Figure 11) in order to trigger discussion around concrete options rather than generic sustainability principles.

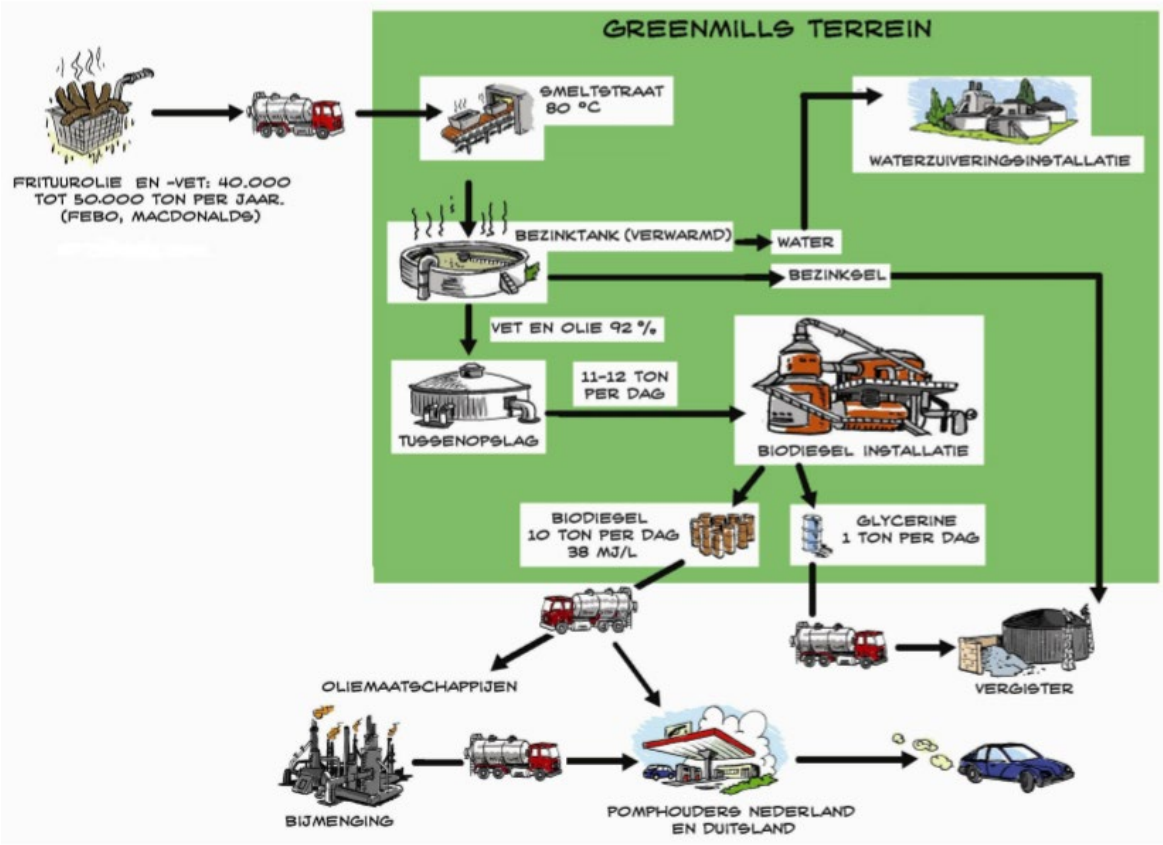

Figure 11: Cartoon depicting a biomass chain as used in the Biomass dialogue, from Hisschemoller et al. (2009, p. 57).

8.2.2. Annotated storytelling

Annotated storytelling is a Design Thinking approach that can help people to tell stories about experiences within their home or workplace. Annotation means that people are given labels or stickers and asked to annotate (comment on, question, provide ideas about) various items that interact with their daily routines by sticking a label on that item. The things being annotated can be buildings, objects, appliances, etc. In the DECC Carbon Futures project, staff engagement around workplace sustainability was centre stage. Researchers asked people to tell their workplace experience stories using annotations, see Figure 12. Staff were encouraged to create collaborative stories, by adding text to the annotations of others.

Figure 12: Annotations as part of the DECC Carbon Futures project, from Lockton et al. (2014).

8.2.3. Visioning workshops

The EU H2020 project CIMULACT[15] aimed to engage citizens and other stakeholders in a variety of ways, including national vision workshops where citizens could express their dreams for a sustainable and desirable future. These visions were then translated into suggestions for H2020 research topics and policy recommendations[16]. CIMULACT placed a lot of emphasis on non-verbal communication and storytelling. For example, citizens were invited to tell stories, meditate during workshops, dream up a perfect day in their life, choose pictures and then tell a story about how that picture related to their challenges, see Figure 13. CIMULACT explicitly chose these techniques because the consortium was convinced that within such a cross-cultural process the use of visual materials is critical, in addition to verbal communication.

Figure 13: CIMULACT video on designing desirable futures, https://www.youtube.com/watch?v=4zibmwPptGo.

15 See http://www.cimulact.eu/.

16 See https://www.youtube.com/watch?v=JUjt59qEbEU&feature=youtu.be.

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