

Energy Communication Toolkit

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About this toolkit

This toolkit has been developed as part of the Communicating Material Cultures of Energy (C-MCE) project, based in the Science Museum, London and Birkbeck College, University of London, conducted between 2018 and 2019. The project served as a platform for a multidisciplinary dialogue between academics and practitioners concerning public communication of energy-related information. With partners and collaborators drawn from diverse communication sectors, the project organisers facilitated a series of knowledge-exchange sessions and a conference to discuss the core challenges facing energy communicators in the UK and beyond.

The contents and tools herein are based on the insights and information gained through the C-MCE project. The authors acknowledge the generous support and assistance from project participants, who shared invaluable knowledge and practical observations based on their real-life experiences in designing and implementing communication projects, campaigns and trials. Participants also provided opportunities to experience their innovative communication activities first-hand during interactive sessions at the final C-MCE conference event.

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Project Partners

Behavioural Insights Team: <https://www.bi.team>

Carbon Co-op: <https://carbon.coop>

Community Energy England: <https://communityenergyengland.org>

Department for Business, Energy and Industrial Strategy (BEIS):

<https://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy>

EDF Energy: <https://www.edfenergy.com>

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Introduction

Communication Matters

'Our capacity to understand energy—as both problem and possibility—depends entirely on how we communicate about the capacities it affords, the damages it can cause and our potential to shape the energy futures that lie ahead.'

Shane Gunster, Imre Szeman, Matthew Greaves and Robert Neubauer,
Canadian Journal of Communication, Special Issue 'Communicating Power' (2018)

Consumers in the 21st century generally have significantly more choices and information about energy than in previous generations. Websites, social media, TV and print media incessantly provide information about changes in energy policy, business and technology, while energy users are bombarded with knowledge about energy suppliers they can switch to, appliances they can purchase and new technology that may enter their homes. Notwithstanding, ordinary citizens often feel that they are insufficiently informed about energy technology, regulations and the broad implications of their energy use toward their own well-being and that of the planet. This energy communication concern goes beyond the so-called information deficit model – founded on the assumption that consumers need more and better information to enact lifestyle change – to address the miscommunications that arise when energy knowledge exchange is not well aligned with the social or cultural context in which people exist. The main challenge in energy communication is not insufficient information, but rather improving how energy-related information is conveyed so as to be meaningful and relatable for citizens.

What we call *energy communication* – i.e., communicative activities related to energy – is not only what energy firms' small number of communication officers do; it is an activity that involves a broad range of communication experts and non-experts (Endres et al, 2016). We find energy communicators in many different sectors and organisations. Local energy campaigners communicate energy issues to convey their messages to the public, as do curators of science museums, academic researchers, educators, artists, policymakers and energy-conscious citizens.

Despite the broadening of the energy communication field, few extant studies have shed light on the inherent challenges associated with the act of communicating energy issues. Foregrounding such challenges would be of interest to those who are involved directly in energy communication, as well as those who want to understand how energy-related knowledge is communicated in society. As an initial examination of this topic, this toolkit primarily takes stock of insights derived from contemporary communication practices, but it is also informed by recent research from the field of communication studies and the social science of energy. As much as this toolkit contributes to the understanding of what it means to communicate energy, it is first and foremost intended to help energy communicators reflect on how they communicate energy.

An interactive toolkit format is adopted because energy communication is very much a practice-oriented field. This toolkit introduces some theoretical concepts and insights to readers, but our main concern is to encourage users to experiment, play with, modify and act upon the ideas and templates provided in ways that inform their practice of energy communication. Designed in this way, the toolkit bridges the gap between ideas and practice, between textbook-style instructions and the trial and error of learning by doing. The tools provided in each chapter act as templates to help communicators anticipate challenges prior to implementing an energy-communication project. Equally, these tools can be used to identify issues during or after a project in order to improve future communication. Another envisaged use of the toolkit is to increase readers' understanding of energy communication as a distinctive field and to appreciate the value of approaching this communication challenge as a dynamic and participatory process.

A core premise underlying this toolkit is that better communication of energy issues can be achieved by understanding the distinctive characteristics of energy and how it is encountered within society in diverse ways. The following four energy characteristics are identified as fundamental issues that comprise the main challenges for energy communication:

1. Energy is a technical subject that is also related to everyday life.
2. Energy has both visible and invisible dimensions.

3. Energy use is mediated by material objects.
4. Energy is a public and social concern.

The five tools in this toolkit are designed to address these four issues from a communication perspective; however, they are not intended to tell readers how to conduct energy communication. Rather, they are intended to be used as a set of adaptive methods to help communicators reflect on their communicative practices by using their own projects as examples. The exercises also offer somewhat unconventional methods through which to plan and review communication projects in order to reconsider the fundamental question of how to approach energy communication.

How to Use the Toolkit

Each chapter contains instructions for a series of activities and some tools to assist in opening up different communication pathways. Activities can be done either by individuals or as a group (ideally the latter, to enhance interaction and generate feedback).

The chapters are structured in a standardised format, starting with a brief introduction to the communication topic and the aims of the activities and followed by:

- Instructions on how to use the tools and templates.
- A 'Consider' section that provides insights on alternative activity ideas and introduces further research that can help in deepening understanding of the chapter theme.
- Further discussion questions that you may wish to reflect on having considered some of the alternative ideas and insights.
- A short case study that demonstrates an innovative approach that has been taken in relation to the energy communication theme.
- A list of key resources for readers to explore the communication theme further.

The activities are premised on the idea that the reader already has a plan or case study of an energy-related communication project to work with. The templates are designed to be applicable to diverse projects and can be easily modified for specific cases, scenarios or situations. For most activities, you only need a pen, although some of the activities (e.g. in

Chapter 3) can be conducted on a whiteboard or a large sheet of paper with colour pens.

This toolkit devotes equal attention to the perspectives of communicators and audiences. Some activities in the toolkit implicitly ask readers to consider the audience's perspective. When doing so, we encourage readers to depart from the 'information deficit' model of communication, which assumes that the audience does not possess enough, or the right type of, information. Most of today's communication scholars regard the information-deficit model as imperfect, or dismiss it as a not particularly productive way to envisage the communication process. The public possesses knowledge about energy, but their knowledge is aligned closely with their everyday practices. It is also notable that 'lay' knowledge is often expressed in a way that is different from how experts express knowledge. These differences foreground a key type of knowledge deficit that limits communicators' capacity to engage fully with citizens. This lay/expert knowledge mismatch represents one of the core communication challenges that this toolkit is designed to address.

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Chapter 1

Scoping an Energy Communication Project

This toolkit defines ‘communication’ as an interactive process between communicators and the audience. In the age of ubiquitous digital communication, it is increasingly rare that communication does not entail some sort of audience response. The facility of getting audience feedback is one of the reasons why the traditional definition of communication, i.e., a one-way transmission of information, is no longer popular in communication studies. For these same reasons, we do not assume that communication is linear. Communication elicits audience response, and response informs subsequent communication. Viewing the communication process as an interaction, it appears as a circular process rather than a linear one.

Aims

The exercise in this chapter forms the basis for subsequent exercises in this toolkit and has two main aims:

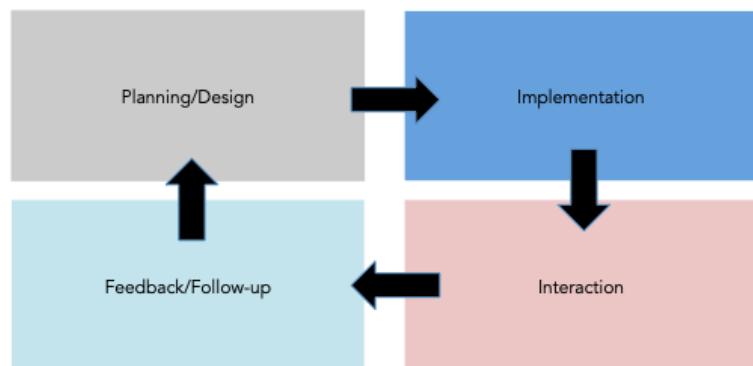
- To draw up an overview of a communication project using a circular communication model.
- To help communicators define a project’s main parameters within the entire circular communication process.

Tool 1. Project Mapping

A traditional, simplified model approaches communication as a linear, one-directional process in which messages are supposed to travel from the sender to the recipient. However, in most cases today communication takes place in an interactive manner. For instance, an energy provider’s communication elicits customer responses through online media or as a behavioural response that the energy provider can capture almost instantaneously. Therefore, it is more realistic to view communication as a circular process and to incorporate audience responses and

feedback that can inform subsequent communication (Figure 1).

Figure 1: The circular model of communication



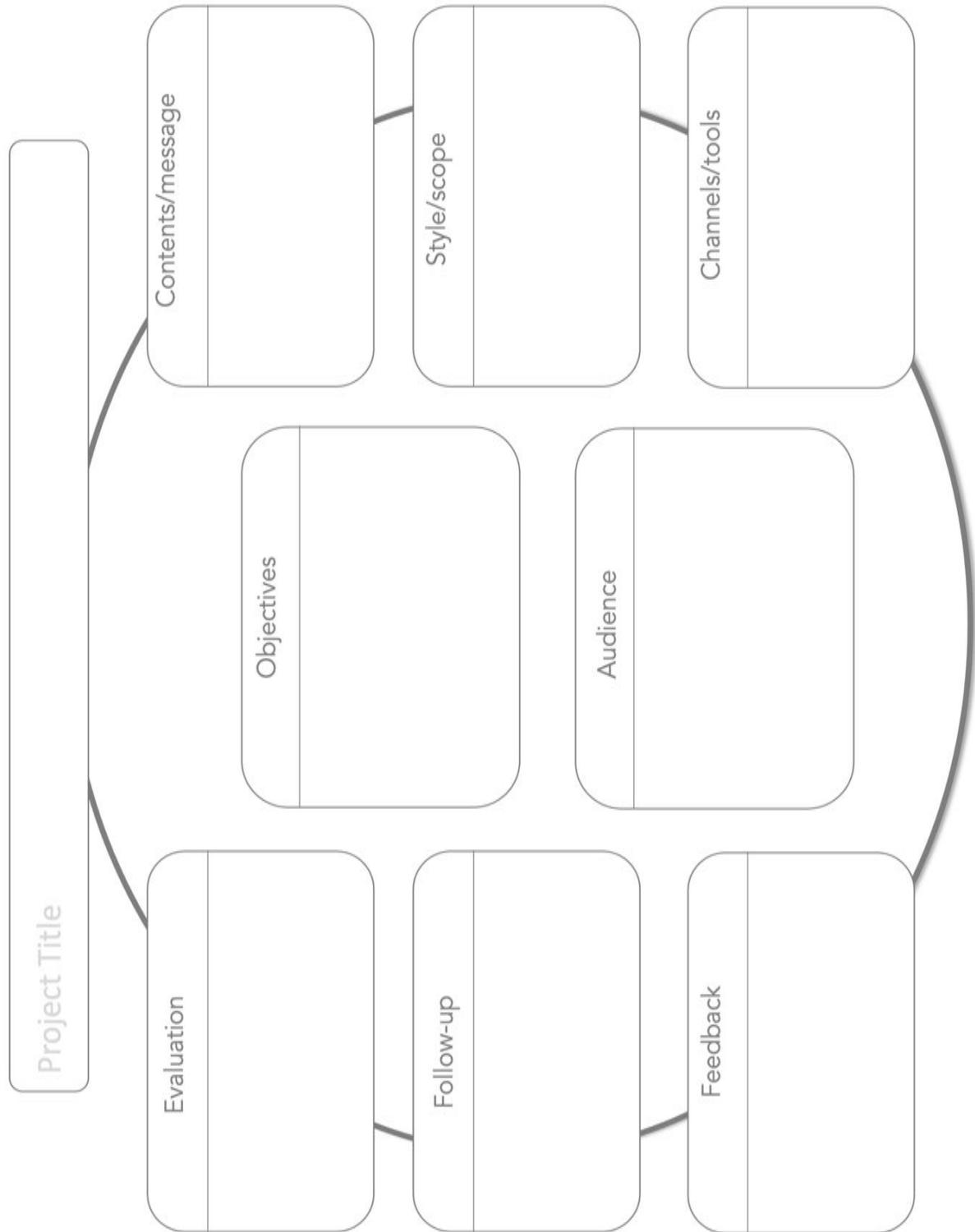
Instructions

On the project map below, project components are to be plotted through a circular model that is adapted from the circular design approach outlined in Fig. 1.

Step 1. Fill in the 'Project Title' and 'Objectives' boxes at the centre of the Project Map using your own project plan/case study. Define the project's objectives by considering what the project aims to achieve.

Step 2. Fill in the 'Audience' box with your intended key audience(s). If the project has more than one audience, list multiple audience groups. In addition to objective audience characteristics (age, social group, location), think about subjective descriptive terms for characteristics, such as 'interested', 'difficult', 'divided', 'sceptical', etc.

Project Map



Step 3. Moving clockwise on the project map, fill in the three boxes on the right:

'Contents/message', 'Style/scope' and 'Channels/tools'. See Table 1.1 below for some examples of each project component.

- 'Content' means the main subject(s) or topic(s) of your communication project.
- 'Style' designates the general structure of a project: the tone with which the information is conveyed (formal, informal), the anticipated manner of information flow (top-down, bottom-up, horizontal, mono-directional, multi-directional) and the role of the audience (participatory, consultative).
- 'Scope' can be described geographically (national, regional, local), socially (with specific groups in mind or for the general public) or for its timescale (long- or short-term).
- 'Channels' are the media through which communication is transacted, which can be material media (print, digital, equipment) or organisations (events, groups, activities).

Table 1.1

Contents/message	Style/scope	Channels/tools		
Renewable energy promotion	Formal Informal	Print matter (letters, newsletters, bills)	Artwork (posters, fliers, stickers, photography, artistic installations)	Site visits Home visits (open home)
Behavioural change	Top-down	TV/radio		
Energy saving	Bottom-up	Phone/mobile phone		
Thermal efficiency	Horizontal/dialogue	SMS		
Infrastructure siting	Public	Mobile apps	Infographics	
Research dissemination	National/regional/local	Website	Films	Games (digital, traditional)
Protest	Long-term	Social media (Facebook, LinkedIn, Instagram)	Exhibition	
Scenario building	One-off	Twitter	Performance (theatre, dance)	
Installation of new devices (smart meter, heat pump)		YouTube	Creative activity (drawing, creative writing, energy biography)	
		Lecture		
		Discussion		
		Workshop		
		Focus group		
		Citizen panels/juries	Information tools	
		Competition	(energy displays, thermal visualisation)	

Step 4. Fill in the three boxes on the left: 'Feedback', 'Follow-up' and 'Evaluation' (see Table 1.2 for examples). 'Feedback' means any feedback from the audience during and soon after the initial communication, and 'Follow-up' entails additional activities that take place sometime after communication (e.g. a follow-up interview a few months after a workshop or a follow-up focus group meeting). 'Evaluation' is the process of assessing and reviewing the outcomes of a communication project, a process that ideally feeds into future communication activities by contributing to either the redesign of an existing project or the creation of new projects. For the

purpose of this toolkit, when you fill in the ‘evaluation’ box, focus on activities that help you identify learning points from the communication work that has been conducted (e.g. review meetings, score sheets, SWOT analyses).

Table 1.2

Feedback	Follow-up
Feedback sheets, surveys and questionnaires	Follow-up meetings
Interviews	Participant interviews and focus-groups
Social media	Participant diaries
Focus groups	Feedback reports
Polls	Post-event surveys
	Retention surveys

Step 5. With the completed map, consider whether the project forms a circular structure. Does the project have a proper evaluation plan to show how feedback and follow-up activities will feed into future communication activities?

Step 6. Also consider whether all project components are well-connected. Are the content and style/scope likely to achieve the objectives? Are channels/tools relevant enough to appeal to the audience?

Consider

 The ‘framing’ of information is an important factor in influencing receptivity to communication. For example, Daniel Rosenbloom (2018) identified six different frames in the public discussion concerning the phase-out of coal-fired power generation in Ontario, Canada. Within these discussions coal-fired power was conceived as (1) a public health crisis, (2) a drain on the economy, (3) a climate change problem, (4) an accepted and common component of electricity systems, (5) part of a reliable and affordable electricity system and (6) a ‘not so bad’ source of energy. Alternative framings may be useful to consider in addressing audience receptivity to a project.

 The use of digital media has now become commonplace in energy communication, but communication scholars caution against seeing social media as a channel for only one-way communication (Smith and Gallicano, 2015). Digital communication significantly extends the global reach of communication and it offers a distinctive interaction space for social engagement. In this extended online sphere, communicators may have a different role, level of engagement or degree of control. For energy companies, digital communication can provide a

platform for nurturing customer trust and loyalty through dialogue and engagement that goes far beyond the use of technology as a means to deliver information about customers' energy usage. This drive for more meaningful interaction with audiences, especially around environmental concerns, may compel communicators to develop greater sensitivity to the affective dimensions of communication and to the diversity of their audiences. Customer receptivity to these new forms of interactive communication will likely be variable as the line between meaningful engagement and unwanted marketing or surveillance becomes blurred. Moreover, Moreno-Munoz et al (2016) caution that the transition to digital-based communication is accompanied by unique challenges, including the need to constantly adapt to new user preferences and applications that may have unpredictable returns on investments of money or time. Some issues to consider in light of these challenges are how the virtual community defines new types of social interaction and how the characteristics of audiences differ among the various social media platforms, as well as questions of quality of feedback or audience bias.

☞ A 2012 study by Barnett et al on public engagement concerning renewable energy technology found that an 'imagined public' – i.e., communicators' ideas about the intended audience's character – can bias project design. For instance, if the audience is assumed to be 'ignorant', the communication design would focus on offering information, rather than more interactive activities. Similarly, anticipating a 'difficult' audience would lead to a project design that tries to avoid confrontational scenarios. Therefore, it is worth reviewing the intended audience to see whether any bias concerning their imagined characteristics exists, which acts as an unnecessary constraint on the design of your communication activity.

☞ Communication scholar de Vries (2019) calls for shifting attention away from an audience's supposed knowledge deficits and instead giving more consideration to psychological, behavioural and social factors that affect the audience's interpretation of communication. Appeals for energy saving often encounter audiences with a tendency to discount the urgency of the issue based on optimism for technological innovation, denial of climate change and the perceived sense of an inability to modify one's behaviour. These factors are related to communication content, as well as styles. Top-down communication may invite the audience's sense of being controlled (reactance), while an inclusive communication format tends to increase an audience's willingness to engage with the topic.

Further Discussion

- ⚡ Review the intended audience that you originally described on the Project Map to reflect on your own bias about the target audience. Consider alternative audiences with characteristics that are different from those of the initially defined audience. How does being inclusive of a more diverse audience affect your ideas about receptivity to communication? How might changing the target audience affect the design of your communication project?
- ⚡ How does shifting the project's attention away from the audience's assumed pre-existing knowledge change the project's design?
- ⚡ How can we better define the intended audience in the communication planning process?
- ⚡ How might the communication channel influence the audience profile? How does communication via different social media channels influence questions of audience bias or receptivity?

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Chapter 2

Knowing Energy

An inherent challenge for energy communication lies in the nature of energy issues that cut across specialised technological fields and everyday life. While energy experts talk about network operation, generation capacity and peak demand, many ordinary energy consumers are concerned with things that are more familiar to them, such as household power supply, appliances and routines. A recent SaveOnEnergy survey of 2,381 UK millennials on energy literacy discovered that only 55 per cent of respondents could define *kilowatt*, and a mere 37 per cent could tell the difference between off-peak and on-peak.¹ Instead of interpreting these results merely as an evidence of energy illiteracy among millennials, we may consider them from the perspective of different ways of knowing energy. Ordinary users' ideas about energy are usually grounded more firmly in practical situations such as how long it would take to warm up the living room after turning on the heater or how long they will have to wait until a mobile phone is fully recharged. Similarly, for most energy users, their priority rests in their immediate environment (the supply situation in their local community or household) rather than in the efficient operation of large, networked infrastructures of power supply. The priority issues for energy supply companies do not necessarily correspond to those of energy users. Rather than interpret the energy literacy survey results as evidence of an energy-illiterate public, this chapter suggests the need for openness to different meanings of energy literacy that may support more diverse ways of learning about energy. Instead of focusing on 'educating' energy users to boost energy literacy, it would be just as relevant to consider how communicators incorporate social

¹ <https://www.saveonenergy.com/uk/energy-illiterate-millennials/>

or cultural literacy into their own communication work. By appreciating the different dimensions of *lay* energy knowledge, communicators can also learn to connect with their audiences more effectively.

Aims

The following exercise is designed to raise energy communicators' awareness of different repositories of knowledge concerning energy technology and its use. This exercise challenges communicators to consider what being energy literate means, and how this goes beyond educating people in the technical language of the energy business (e.g. costs per kWh, environmental consequences of actions in units of CO₂ emitted per household) to address communicators' own needs in regard to social literacy issues (e.g. understanding what people value about energy, how they view comfort or efficiency, and how these ideas have evolved historically or culturally). It aims to:

- Draw attention to different sets of vocabulary that energy experts and ordinary energy consumers employ to help communicators identify shared and unshared vocabulary.
- Encourage communicators to devise interpretation strategies, as well as seek lay knowledge and expertise for mutual understanding and learning.

Tool 2. Energy Glossary

This tool helps communicators become more aware of their own vocabulary and how it connects (or does not connect) with non-expert vocabulary.

Instructions

Step 1. Describe the main topic of the communication project, using one sentence. Then, around the main topic, make a list of nine keywords and/or phrases associated with the topic that are likely to appear in communication project activities (e.g. behaviour change, peak-time consumption, thermal efficiency).

Step 2. Categorise the nine words/phrases in the list into 'experts', 'shared' and 'lay' vocabularies. If a word/phrase is used in both expert and lay contexts, it belongs to the 'shared' vocabulary.

Energy Glossary

PROJECT TOPIC

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Lay Vocabulary

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Shared Vocabulary

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Experts' Vocabulary

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Step 3. If a word/phrase belongs to either the ‘experts’ or ‘lay’ vocabulary alone, try to translate it into a shared vocabulary term or think about a corresponding word/phrase in the other vocabulary (i.e., expert to lay or lay to expert).

Step 4. Evaluate your project’s general use of vocabulary by considering whether it is dominated by expert or lay vocabulary. Does your communication require a certain amount of interpretation in Step 3, or is it readily understandable in both expert and lay contexts?

Step 5. Try to rewrite the main topic in light of the glossary you have created through the exercise.

Consider

☞ A lack of familiarity with expert vocabulary tends to undermine the public’s confidence when talking about energy with experts (Pellizzone et al, 2017). Not knowing expert jargon does not mean ‘lay’ energy users do not possess knowledge about energy, nor is lay language inherently inferior to expert language. Creating hierarchical relations between expert and lay knowledge often leads to communicators losing sight of their audiences’ real concerns and interests.

☞ Aitken (2010) argues that construction of expert and lay knowledge marginalises the latter. This marginalisation risks increasing public antagonism toward an energy project (e.g., infrastructure building) and potentially leads to missing opportunities to draw on lay knowledge and expertise. Understanding lay vocabulary requires recognising the audience’s ‘problem domain’ with which a communication project aims to engage.

☞ Experts and the public may understand some basic vocabulary differently. The Drawing Energy project that the Royal College of Art conducted in 2013–2014 highlighted the fact that energy can be described in diverse ways. The project asked several exhibition visitors and students to draw a picture of energy. Instead of energy infrastructures, many participants chose to draw lightbulbs, plug sockets, batteries, lightning bolts, flowers, abstract patterns and shapes (Bowden et al, 2016). A 2010 research paper by Devine-Wright et al similarly pointed to the existence of different ways of describing energy that reflect how expert and lay populations have different frames of reference. For instance, a proposed energy infrastructure may be, for

local residents, closely associated with changes in the local landscape, while experts tend to stress its financial benefits.

☞ A study on the UK smart meter rollout by Darby (2015) revealed that meter installers played a crucial role in the learning process of new meter users by acting as intermediaries of knowledge as they translated expert vocabulary into practical contexts during installation. Sharing specialist vocabulary with users through initial instruction sessions that took place within users' homes was found to have enhanced their understanding of the technology, improving their ability to communicate in semi-expert language (e.g., reporting technical problems to the support centre).

Further Discussion

- ⚡ To what extent is the aim of the energy communications project supposed to provide energy consumers with an expert vocabulary to navigate energy systems or to redesign energy systems to reflect everyday ways of talking about energy?
- ⚡ In the context of your communication project, what would communicators learn from understanding lay vocabulary and expertise?
- ⚡ Can you think of any intermediaries that can translate expert vocabulary into lay vocabulary (and vice versa) within your project?
- ⚡ How might you change the language of energy communication to address the need for social energy literacy as well as technical literacy?
- ⚡ Is there a need for a new language of energy to engage experts and lay people in more meaningful communication around energy transitions?

CASE STUDY

Carbon City Zero: Co-creation as Conversation

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In 2019 we were asked by the climate charity Possible to design a game that would help to develop dialogue around decarbonisation. From the outset we wanted to create a game that enabled people to talk about the issues at hand, no matter what their background or scientific literacy. Having previously designed a game themed around climate change (*Catan: Global Warming*) we had discovered that the actual process of creating the game afforded a great opportunity for dialogue. As such, when we set out to make *Carbon City Zero*, we knew that we wanted to make this a feature of our design praxis, working with as many different publics as possible (activists, policymakers, industry experts, etc.) to ensure that all of their experiences and expertise could be used to shape the game and to generate dialogue in the process.

In co-creating the game, we ran several workshops with these various groups, and asked them what they thought the biggest barriers and opportunities were with regards to creating a carbon neutral city. We then used these ideas to identify the key elements of the game, structuring them around a basic game mechanic that we hoped would be both fun and accessible. Based on our own experience, and from the conversations that we had in these various workshops, it was also clear that it was the mechanics of the game itself that should be used to develop dialogue around decarbonisation, rather than paragraphs of 'flavour' text that players would be unlikely to read in an in-game environment.

The concept that we settled on was *Carbon City Zero*, a card game in which players compete to make the world's first carbon neutral city. After settling on this basic concept, we playtested the game with as many different groups of players as we could, using their feedback to develop both its playability and its capacity to generate conversations around decarbonisation. These games allowed us to determine the names and functions for each of the cards (informed by the different sets of vocabulary used by both 'experts' and 'non-experts') and we then worked with an artist (Tony Pickering) and graphic designer (Matt Bonner) to turn our initial sketches into something that we think looks fantastic. With everything done (or so we thought) we went on to launch the game on Kickstarter, raising over £10,000 and posting copies to hundreds of people all over the world.



However, that was not the end of the story.

People enjoyed *Carbon City Zero*, but one question they kept asking was: "Why is it a competitive instead of a collaborative game?" This was a great question, and it suggested that the game had started just the kinds of conversations about decarbonisation and climate action that we'd hoped for. We also realised that we didn't have a good answer, and this led us to re-imagine the game, working with further playtest groups to co-create a new, cooperative version. The outcome was [*Carbon City Zero: World Edition*](#), a card game

in which players work together in order to create a net zero emission city before the time runs out. After months of playtesting, some new illustrations, and a complete redesign of the cards, we launched *Carbon City Zero: World Edition* on Kickstarter and this time raised over £20,000.

The experience of co-creating *Carbon City Zero* with different audiences, and of listening to their needs, experiences and feedback, has taught us the value of utilising a variety of knowledge and expertise for mutual understanding and learning. Rather than simply being a box-ticking exercise for diversity, the different voices that we engaged with helped to shape the game into a more coherent whole, creating an output that was far more effective than anything that the two of us could have managed without the help of others.

Carbon City Zero and *Carbon City Zero: World Edition* are both available to download and print at home for free from PNP Arcade (<https://www.pnparcade.com/>). We would encourage you to seek them out, have a game, and let us know what conversations they start.

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Chapter 3

Visible/Invisible Energy

Energy is often invisible, especially so when we talk about modern energy carriers such as electricity. For instance, when we talk about wind energy, visible elements are not wind energy *per se*, but technology, infrastructure (turbines), data (a graph showing power output from a wind farm), etc. In the early 20th century, when electricity was a relatively new invention, the promoters of electrification struggled to find ways to represent this invisible energy. They resorted to figures of fairies, goddesses or tireless servants when explaining the mysterious power of electricity. As the 20th century progressed, an affluent lifestyle came to stand for electricity consumption, and the technological aspects of electricity supply receded into the background – or were hidden behind the sleek amenity of modern life. More recently, the discussion on energy transitions has proposed the general absence of technological awareness as a reason for consumer indifference in adopting sustainable energy lifestyles. Increasing the salience of energy technology, some argue, can be a way to promote sustainable energy use. Yet, it would be challenging to make all forms of energy visible, and technological visibility is not the only aspect to highlight. More precisely, energy has visible and invisible dimensions. Communicators must recognise the Janus-like domains of energy visibility/invisibility and consider how energy manifests in both material and social forms. Effective energy communication requires navigating these interconnected socio-material domains.

Aims

The aim of the exercise this chapter is to:

- Raise energy communicators' awareness concerning the challenges that are rooted in the visibility/invisibility of energy.
- Help energy communicators create strategies that take into account energy's visibility/invisibility, especially by considering the interplay between social and material

elements.

- Assist communicators in developing a reflective attitude towards the issue of energy visibility/invisibility as it relates to communication topics of relevance to the specific audience.

Tool 3. Communication Mood Board

This tool applies the mood board, which is a design management tool, to energy communication as a method to identify visible and invisible dimensions of energy topics, and to consider how to connect the two dimensions in a communication project.

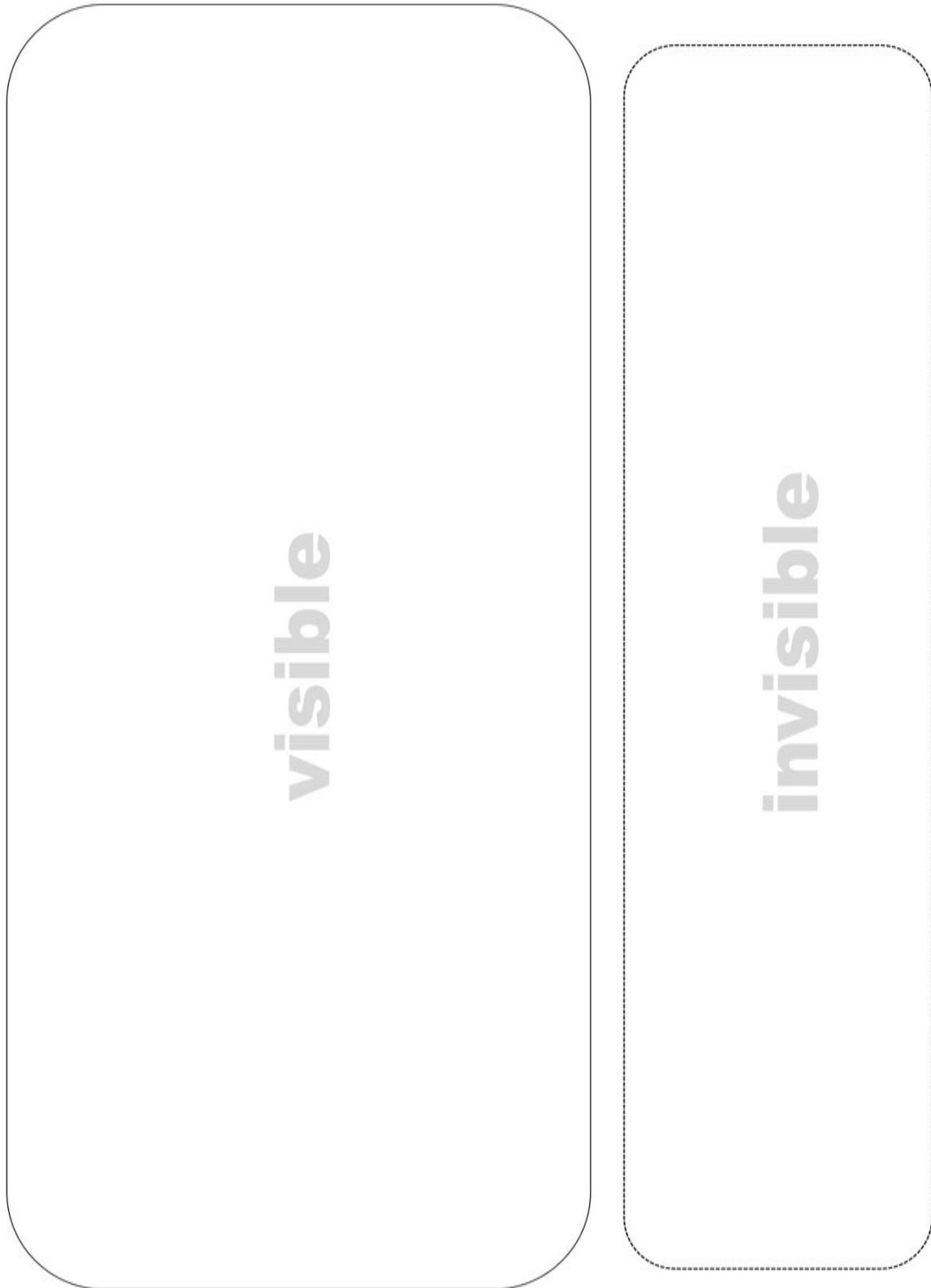
Instructions

Step 1. By using the blank mood board on the next page (or a whiteboard/paper of your choice), create a collage of images that visually describe your energy communication project. Fill in the 'visible' box with drawings, symbols and/or pasted pictures. These images need to cover your project's main topics and associated sub-topics. If you are not sure about your drawing skills, you may use some textual descriptions (e.g., 'solar panels') as long as these items can be represented visually. Be selective as to the choice of images, i.e., choose key images that are most likely to appear in your project.

Step 2. Once you finish filling the mood board with images, think about topics that are difficult to depict visually. List these invisible topics in the 'invisible' box. When filling in the 'invisible' box, consider topics that are related to your project's objectives (cost saving, behavioural change, environmental awareness), temporal scope (past, future), emotions (positive, negative, hope, fear, fun), values (desirable/undesirable), judgement (easy, difficult, achievable/unachievable) and opinions (support/opposition, agreement/disagreement).

Step 3. Review the two boxes containing your listed visible and invisible topics and determine whether you can find any corresponding items in them. For instance, if you have an image of a thermostat or fireplace, it may be linked to invisible topics such as warmth, insulation, thermal efficiency, comfort, etc.

Communication Mood Board



Step 4. Revise your mood board by adding visual representations of invisible topics. These do not have to be direct representations of invisible topics – use your imagination, creativity and association to translate the invisible into the visible.

Step 5. Go through the items on the mood board from your target audience's perspective. Are the items immediately recognisable, familiar to your audience and relevant to their daily lives, or are they more abstract, technical and general?

Consider

☞ Several scholars have argued that invisibility is a major characteristic of the modern energy system. Not only are energy carriers (electricity and gas) usually invisible, but networked energy supply and the ease of energy use have made energy supply and infrastructure mundane and inconspicuous. Some researchers contend that in modern society, constant energy supply is taken for granted to the extent that only when supply is disrupted will energy users think about the system that provides their energy. Thinking about such disruptions, and visualising which aspects of daily life are missed or lost during them, can be a useful way of demonstrating to people the value of energy in their everyday life.

☞ Energy disruption is an event in which the energy system, which normally operates in the background, suddenly comes into the spotlight. *The Great Energy Escape*, an immersive game-style activity created by Carbon Co-op and Energy Democracy Greater Manchester employs an energy-disruption scenario as a learning tool for the public to think about the management and design of a sustainable and resilient energy system – and what can still go wrong in a supposedly robust infrastructure.² The activity's participants are asked to assume the role of grid operators by making decisions as to how to keep the energy supply connected in a hypothetical energy emergency situation by combining different supply and demand options. It is a type of activity that foregrounds the invisible complexities of energy-supply organisation that are often hidden from the public.

☞ As anthropologist Brian Larkin (2013) points out, energy infrastructures are characterised through their duality: they are visible and invisible, yet are things that are also relations between

² <https://carbon.coop/portfolio/the-great-energy-escape/>

things. Electricity infrastructure includes generators, cables, operation systems, markets, labour networks and many other things, along with people and knowledge. Such an insight, for communicators, points not only to the challenge of navigating visible/invisible energy dimensions but also envisioning the connections between them. Adapting the mood board exercise to identify some crucial but hidden connections within energy networks may be a useful exercise.

☞ In 2014, the Alien Energy research group organised the Energy Walk in Hanstholm, Denmark, a guided walk around a wave energy generation site that aimed to raise awareness about the Danish coastal town's complex energy landscape. Aided by a digital audio guide, the walk covered six stories that were designed to direct walkers' attention to visible and invisible energy in the locality. As one of its organisers stresses, the Energy Walk does not merely aim to make energy infrastructures visible, but also provides a distinctive aesthetic experience with energy infrastructure as it moves between visibility and invisibility (Thorsen, 2016).

☞ Energy systems and organisations are hard to visualise, especially for non-experts. As Devine-Wright et al (2010) argue, the invisibility of systemic and organisational issues often hinders the public's engagement with energy-related discussion. To the public, energy projects may appear as a black box if sufficient information about their organisation or the decision-making process is not provided. How to open up this black box and make it visible to the audience is a tough challenge, but recognising the challenge is a first step towards addressing this communication barrier.

☞ As visual communication scholars have argued, images are not merely supplementary to text-based communication; they can play a powerful role in communication. Thus, they need to be chosen carefully. For instance, sustainability communication studies have found that some iconic images of global-scale problems (melting icebergs, polar bears losing their habitations) tend not to motivate audiences to change their everyday behaviour related to energy use, though such images may raise awareness of climate change (O'Neill and Nicholson-Cole, 2009). If the objective of communication is to change behaviour, images need to be relevant to the audience's everyday context. As recent research, e.g., the eViz project (see Case Study), has discovered, personalised visual images are more likely to change energy users' behaviour.

Further Discussion

- ⚡ How can you enhance the audience relevance of your project's visual components by modifying featured images?
- ⚡ How can invisible elements of your communication project be conveyed by combining visual and non-visual methods?
- ⚡ Think about an alternative visual strategy by changing the balance of your project's visible and invisible components. Would an alternative strategy enhance the project's outcomes (e.g., better public understanding, greater public engagement)?
- ⚡ Disruption scenarios and energy walks can help people to visualise energy and to consider what is involved in the coordination of grids across time and space. How might such activities be used to reflect on the problems with past infrastructures and help us configure more sustainable and resilient ones? Will more distributed energy forms increase energy visibility within communities? What will new energy landscapes look like in terms of visible and invisible elements?

CASE STUDY

The eViz Project

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At the University of Plymouth, the eViz Project, a multi-centre, multi-discipline project, investigated how energy demand in buildings could be reduced by transforming people's understanding and behaviour through energy visualisations.

eViz took the approach that to reduce energy demand we need to consider people, their behaviour, their understanding and their context. Energy is an abstract concept for many people. It is largely invisible in that, unlike other resources, such as petrol or food, we cannot easily see our usage or where/how fast it is being used. These

factors make it difficult for us to connect energy use with our behaviour and can make it difficult to understand how to conserve energy.

Visuals, because they can attract attention to a topic, can help. Visuals are accessible; they can condense complex information and can communicate messages very quickly.¹ They aid memory and elaboration. Visuals can be tailored (personalised) to the viewer, can provide a cue for a specific action and feedback towards an energy saving goal. However, their efficacy depends on the context.

To test the impact of visuals, eViz used thermal imaging to make heat loss visible (e.g. draughts and missing insulation). It asked a question: 'If householders saw their own homes in a thermal image, would they take action to mitigate that heat loss (and save energy)?' Two studies were completed. In study one, householders' actions were compared between: 1) a group who received thermal images of their homes alongside a carbon footprint audit; 2) a group who received only a carbon footprint audit; and 3) a control group. In study two, behaviours were compared between a group who received an energy audit of their home plus a thermal image, and an energy audit-only group.² The householders in study 1 made more carbon savings and took on more energy saving behaviours after seeing thermal images with the carbon footprint audit of their home. Twenty per cent of householders in the image group took simple draught proofing measures compared to three per cent in the audit group. At a one-year follow-up, the thermal imaging group had reduced their KgCo₂ from energy use in the home by 14 per cent. In study 2, householders were nearly five times more likely to have taken simple draught-proofing measures after seeing thermal images of their homes.



Image: <http://www.eviz.org.uk/>

These first studies used visuals that were highly tailored and relevant to the householder. In a further study³, the focus was on the extent to which the visuals needed to be personal. Three groups of householders were recruited. One group received a written report with thermal images of their own home (thermal-tailored), a second group received a thermal report of an unknown home showing typical areas of heat loss (thermal-targeted) and a third group received the same reports with words only (no visuals, text-targeted). Behaviourally, 40 per cent of participants who saw the tailored thermal images made energy efficiency improvements, compared to fewer than 20 per cent in the non-tailored thermal condition, and 17 per cent in the non-tailored text condition. In a follow up survey, both types of thermal images were recalled more vividly by householders, compared to the non-tailored text. Interestingly, thoughts about the tailored thermal images 'popped up' into householder's heads more frequently than happened with the non-tailored images. Additionally, participants who received the tailored thermal images were more likely to elaborate the information, sharing and discussing their report with others, compared to participants who received the non-tailored thermal images or the non-tailored text report.

Thermal – Tailored	Thermal – Targeted	Text - Targeted
 <p>Report with thermal images of their own home</p>	 <p>Report with thermal images of a typical home, showing issues commonly found in homes in this area</p>	<p>DOORS: Colder air often enters the house via draughts around, at the top and the bottom of an external door. Cold air can enter the house at the point where patio doors meet in the centre. Cat flaps in doors can allow cold air to enter the house.</p> <p>CEILINGS: Heat escapes and cold air enters the house where loft insulation is of reduced thickness, missing or misplaced. Loft hatches often get forgotten when loft insulation is fitted.</p> <p>FLOORS AND SKIRTINGS: Cold draughts can enter the house from the floor and walls at the skirting boards, especially if the ground floor is wooden and suspended.</p> <p>Report with text only, same information as the thermal-targeted group</p>

Image: Boomsma, Goodhew, Goodhew and Pahl. 2016

Overall, eViz concluded that energy visualisations provide benefits in their vividness, image ability, recall and elaboration. However, tailored/personalised visuals of heat were particularly effective in promoting intentions and actions to reduce the demand for energy.⁴

<http://www.eviz.org.uk/>

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1. Department for Energy and Climate Change: 'Cheaper Energy Together competition'
2. The eViz Project, a consortium of four UK universities (eviz.org.uk) funded by the Engineering and Physical Sciences Research Council under Transforming Energy Demand in Buildings through Digital Innovation (TEDDI) [grant number EP/K002465/1].

Notes

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Chapter 4

Energy Objects and Communication

Technical objects mediate energy consumption. From large power stations, pylons, cables and domestic appliances to switches and dials, we experience energy use with the help of objects. Object-based communication – such as site visits, appliance demonstrations and exhibitions – emphasise engagement with energy's material dimensions. In the past, promoters of new energy sources and household appliances were faced with energy users who were not easily converted to a new energy life. Be it gas, electricity or solar energy, pilot installations and demonstrations in the home or in utility showrooms were key communication channels where prospective users could witness the new inventions at work and overcome their wariness, scepticism or fear of the unknown. Different communication channels, including digital ones, are available today for people to engage with new energy objects in potentially transformative ways. While the multi-sensory aspect of object-communication tends to enhance communication outcomes, research on object-based learning has demonstrated that inherent challenges exist concerning the use of objects in communication work. Challenges may concern logistics, such as bringing objects to the site of communication, or economic constraints concerning the costs incurred when incorporating technologies in communication projects. Other challenges are culturally based, including communicators' traditional preoccupation with words and verbal persuasion. This chapter addresses a fundamental issue concerning the nature of energy objects by considering how people give different meanings to an object according to their views and personal situations. For instance, some people may find the electric vehicle highly desirable and a necessity for a green lifestyle, while others may see it as a luxury item that is impractical for everyday use. The activity in this chapter focuses on the multiple

meanings of objects for different people as a way to contemplate the practical application of object-based energy communication.

Aims

The aims of the following exercise are to:

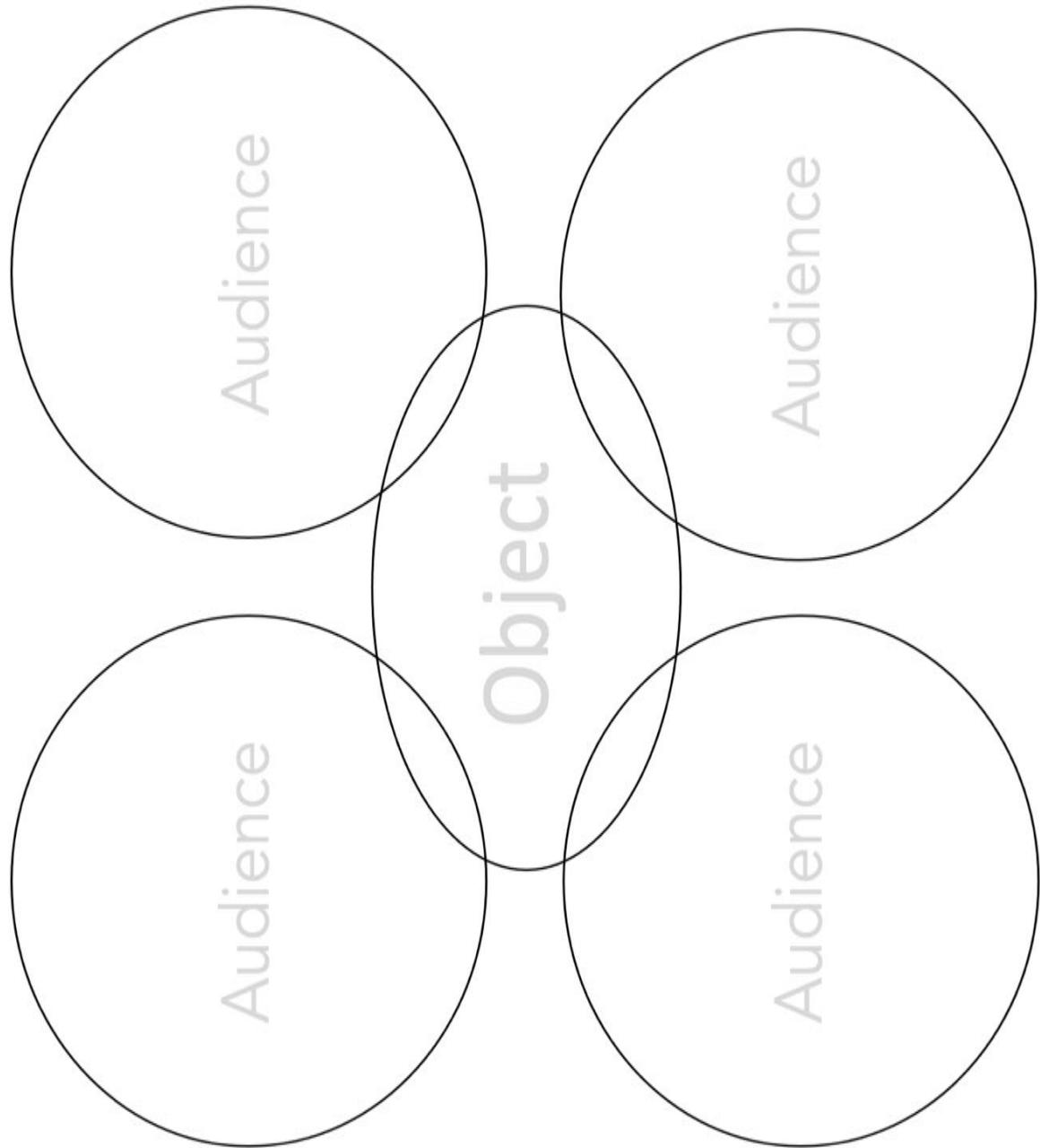
- Introduce the concept of boundary objects to understand how objects are interpreted in the communication process.
- Help communicators identify challenges and opportunities that arise from employing an object-based approach in communication projects.
- Offer an alternative method of designing/reviewing a project by focusing on objects.

Tool 4. Boundary Objects Diagram

This tool applies a modified and simplified version of the concept of *boundary objects*, a concept that sociologist Susan Leigh Star and philosopher James Griesemer originally put forth in their 1989 article. Star and Griesemer defined boundary objects as objects that inhabit several intersecting social worlds while possessing a generally recognisable identity. The concept has been employed in various organisational and technical research contexts, including analysis of energy issues and technology. The following exercise employs the concept to highlight the multiplicity of an object's meaning and to better understand how object-based communication can be deployed as a challenging but worthwhile communication approach.

Boundary objects can be a single object or group of objects of any size. For instance, the smart meter can be viewed as a boundary object, as it is an identifiable object, but its meaning varies according to one's perspective. It may be seen as a means to relay important information on the economic and environmental consequences of energy use, a way to track demand and manage loads, or as a surveillance device to police access to the energy grid and track peoples' private lives (Marvin, Chappells and Guy, 2010). In short, the smart meter has different meanings for technicians, energy suppliers, government, meter users, households and anti-smart meter campaigners (Lovell et al, 2017). The same goes for other boundary objects, such as nuclear power plants, wind turbines, solar panels, coal mines, etc.

Boundary Objects Diagram



Instructions

Step 1. At the centre of the diagram, write the name of an object or group of objects that are central to your communication project.

Step 2. Identify multiple audience groups or stakeholders for your project. You may start with communicators (yourself), then the primary audience, before extending to consider other interested parties, including experts/non-experts or different types of audiences (interested/neutral/sceptical).

Step 3. Consider what the selected object(s) mean to different types of audience groups. For instance, pylons can be a critical infrastructure element for network operators, but some local community members may view them as a threat to the natural landscape.

Step 4. Identify any potential conflicts and disagreements about the meaning of objects and what types of communication activity would diffuse conflicts. For instance, additional information may be necessary to avoid misunderstandings, while a discussion event may help increase mutual understanding between different audience groups. It may even turn out that establishing a long-term relationship is necessary to nurture mutual understanding.

Note that the point of this exercise is not to convert all groups to a single authoritative interpretation, but rather to design a communication strategy based on multiple interpretations of objects.

Consider

 The original concept of boundary objects was intended to shed light on human collaboration under the plurality of values. The concept has been applied to innovation and education to generate ideas, interaction and discussion (Fox, 2011). When applied to communication, the concept of boundary objects alerts communicators to the plurality of audience values, a recognition that is crucial for designing inclusive communication. The concept helps communicators contemplate the different meanings of a given energy technology. For example, a biogas plant in a rural area may be seen as a symbol of renewable energy transition by local authorities, a new source of income for struggling farmers, or a

nuisance for local residents exposed to the smell of slurry (Carlson, 2019). A question to contemplate is whether object-centred communication – such as site visits, demonstrations and exhibitions – can engage different audiences, enhance mutual understanding or identify alternative object designs that may be more favourable for all parties.

☞ Energy studies increasingly have incorporated the idea of practice, habits and routines in their discussion of everyday energy use. Object-based communication recreates practices, habits and routines that are mediated by the use of appliances. It also defamiliarises mundane objects and creates an opportunity for learning and re-learning skills that involve energy use. Hui and Walker (2018) talk of energy objects as ‘anchors’ for certain practices in specific places – such as a kitchen, a workplace or a social space, such as a café. Certain objects make the experience of energy more appealing for people and are valued for the different experiences they provide. All lighting systems allow us to see in dark or dim conditions, but the aesthetic of compact fluorescent strip lighting or energy efficient lightbulbs is quite different from that of an ambient lamp or mood lighting. The general point being made by these authors, and one reiterated by those invested in a practice-based perspective on energy, is that there are multiple ways to experience energy even in the context of a seemingly simple object designed to light a space. Furthermore, these object variants can have very different implications for energy demand and for acceptance of new energy devices.

☞ A public place where object-based communication is conducted routinely is the museum. Communicators can learn a great deal from the ways in which museum displays of objects create multiple levels of interpretation. The National Museum of Scotland’s *Energise* gallery (opened in 2016) is a good example of museum display incorporating personal stories about energy use and a global context of energy development, along with the conventional stories about technological development (Cox, 2018). The multiple layers of meaning are designed to solicit conversations among visitors and provide enhanced learning experiences.

☞ Some recent trials of the gamified approach to communication suggest that general energy topics (such as sustainability, decarbonisation, etc.) can be better communicated by using specific locations as examples. *We-Energy* is a board game developed by a group of Dutch academics in which players take on the roles of various stakeholders, such as legislators, environmentalists, profit-seeking actors and so on, and negotiate among themselves to create a sustainable energy community. The game is explicitly designed to be tailored to geographical

settings familiar to the players. Similarly, in *Carbon City Zero*, a card game created by the climate charity Possible and academics at Manchester Metropolitan University, participants learn about the environmental and economic impact of adopting (or not adopting) specific technologies and policies by thinking about cities of their choice (see Case Study in Chapter 2).³

💡 Games and other interactive technologies are a useful means of engaging people in energy landscapes but geographical research on community perceptions of energy systems reminds us of how a deeper appreciation of people's attachment to specific places and connections to local networks are vital to energy communication. Place attachment here refers to the bonds people have with geographic locations and the interactions they have with energy-related objects within these spaces. Place-based communication can therefore be employed to enhance the audience's engagement and understanding of both familiar and unfamiliar energy technologies. For example, Boyd (2017) has studied community perceptions of low carbon energy systems in rural areas, finding that acceptance of new energy landscapes is strongly shaped by informal communication networks and by a desire to maintain community connections as well as by the visibility or invisibility of a technological development. For communicators, an important message is to view proposed projects through the lens of the community and consider how technologies can disrupt social connections as well as disrupting physical landscapes. Although there may be challenges in conducting place-based research in a workshop setting, virtual tours of energy landscapes, sharing stories of energy landscapes in which people are immersed, or incorporating short energy walks to look at local features of interest or objects of conflict are all potential avenues to explore.

Further Discussion

- ⚡ Review your diagram and consider whether you can add any additional interpretations of the selected object(s) that are not covered in the diagram.

- ⚡ Swap the object(s) for your project with a different object(s) (e.g., from a power plant – during a site visit event – to a scaled model of the power plant showing its incorporation in a local community). How will substituting one object with another likely affect your project's outcomes?

³ <https://www.wearepossible.org/carbon-city-zero>

⚡ With relation to a practice-based approach, take a seemingly simple everyday object (e.g. lamp, cooker, meter, heater, etc.) and consider the multiple ways it can be configured to meet different needs of users in diverse everyday settings (e.g. simplicity, precision, comfort, ambience, etc.). How would these different variants and the settings inscribed within them be more or less acceptable to different audiences? Which variants would be most appealing in terms of meeting the needs of a specific audience? Which would offer a more sustainable solution?

⚡ Consider communication channels that might alter people-place relations and enable new energy objects to be inserted in a landscape with community cooperation rather than resistance. How permanent are energy landscapes and technologies and by what means can they be modified or changed via communication without negatively disrupting connections to place? How can new energy objects be designed to maintain or foster new positive attachments to place?

CASE STUDY

Electricity: The spark of life

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Between 2015 and 2019, the Science and Industry Museum was a partner with Wellcome Trust and Teylers Museum, Haarlem, on the collaborative touring exhibition *Electricity: The spark of life*. The exhibition told the story of electricity discovery, generation and distribution, and included three commissioned artworks that responded to the partner collections. When the exhibition came to Manchester in October 2018, one of the artworks was unable to travel, providing the Science and Industry Museum with an opportunity to work with its long-term partner, Electricity North West, on a new commission for the exhibition as part of the Manchester Science Festival.

Electricity North West operates the electricity distribution system comprising of 13,000km of overhead lines and 44,000km of underground cables in the North West of England. In operating this system, the company generates large amounts of data.

The Science and Industry Museum inspires visitors to make connections between the past and the present, between scientific theory and real-world applications. The willingness of Electricity North West to make its data available as the source for a new engaging installation in the exhibition was the perfect opportunity to make tangible something that is a hidden force in everyone's lives. The partnership also brought with it technical expertise and a source of contemporary objects that enhanced the exhibition's displays.

Working with data visualisation experts Tekja¹, the new art commission brought to life the otherwise unseen infrastructure that powers our lives. By exploring historic electricity usage through time, and using data modelling to project future scenarios, it made the data tangible to spark interest and conversations.



Jacopo Hirschstein and Amanda Taylor of Tekja in *Electricity: The spark of life*

© National Science & Industry Museum/SSPL

For the museum the aim of the exhibition was to help visitors connect with the complex story of electricity and leave feeling inspired and empowered to change their personal relationship with electricity in some way. Through the Tekja artwork, the museum wanted to achieve a change in visitors' perception of what electricity is, where it comes from and how they use it, as well as how they might use it more sustainably in the future.

For Electricity North West, the aim of working with the museum was to help generate interest in the network and its impact on our lives, to encourage engagement in developing future business plans. The Tekja piece also aimed to encourage thoughts on behaviour change which will ultimately help enable the transition to net zero.

There were challenges involved. For the museum, there was a need to make a technical subject accessible and relevant to visitors' lives. Encountering artworks in the museum's exhibitions is not a typical experience for the museum's visitors, so there was a challenge in delivering something unexpected that balanced the traditional exhibition content. From Electricity North West's perspective, it was important to make the present day network a fundamental part of the exhibition. The artwork needed to address a general lack of knowledge of the energy system and a similar lack of awareness of the impact of collective personal behaviour on the electricity network. The UK has set in law a carbon neutrality target by 2050 but other areas are looking to do this sooner. In Manchester, we're looking at 2038 - just 17 years from now. Customer understanding and behaviour change will be essential to the success of this.

The partnership came with a number of positives. The museum was able to collect new objects that were relevant to visitors' lives but hidden from their direct experience and to tell contemporary stories through them, relating them to places visitors shop, socialise and live. The Tekja artwork helped visitors to visualise the complexity of the network and their place in it. Electricity North West gained feedback from exhibition visitors who said the Tekja piece was visually engaging and had helped them understand how the whole system worked, particularly the crucial way the network adapts to meet needs and help Electricity

North West plan for the future. Electricity North West carried out its own case study¹ of the partnership with the museum, allowing it to demonstrate that engagement projects like this work.

This partnership has shown that communicating energy issues can be done, but it's not easy. You have to work at it, be creative and bold. This was the first time Electricity North West had made its data public, something they couldn't have done on their own. Without the expertise of Electricity North West, the museum would have struggled to inspire its visitors in such a creative way. This case study shows that it's essential for private businesses like Electricity North West to join forces with museums, universities and other organisations to make energy communication engaging and relevant to the broader public.

¹ https://tekja.com/portfolio/science_and_industry_museum_flow_exhibit/

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Chapter 5

Engaging the Public with Energy Communication

Energy is one of the most pressing public concerns in today's society. While climate change has brought the issue of carbon emissions from energy use to the forefront of public discussion, energy system decentralisation – which has been accelerated by the greater use of renewable energy – has enhanced the public's role in making energy choices and in some cases becoming more directly involved in energy service provision. In previous periods, energy planners focused on public acceptance of energy technology, which was gauged by the degree to which the public responded either positively or negatively to what experts presented to them. Today, the public is far more integrated into the decision-making process, to the extent that they are often involved at the initial stage of project design rather than being consulted only at the final stage. A 'best practice guidance' for community engagement related to onshore wind development (DECC 2014) lists public exhibitions, site visits, focus groups and facilitated workshops among best and innovative practices that can be incorporated in engagement plans for developers during the pre-application phase of wind power development. As an increasing proportion of energy communicators' work is directed toward interactive communication, rather than one-directional information distribution, it is essential for communicators to be open to the diverse approaches to public engagement that will best enable the design and development of inclusive and democratic energy systems. This chapter presents a method to evaluate your energy communication project from a public participation perspective.

Aims

The aims of the following exercise are to:

- Gauge the extent of your communication project's engagement with the public.
- Situate your project in relation to the spectrum of public engagement perspectives.
- Provide a matrix of options to help you explore alternative communication strategies.
- Offer an opportunity for you to consider creative methods for your communication project.

Tool 5. Public Engagement Spectrum and Matrix

This tool has two components, one based on the International Association for Public Participation's (IAP2) Public Participation Spectrum⁴ and the other on the Energy Public Engagement Matrix presented in a recent UKERC report on the energy sector's public engagement (Chilvers, Pallet and Hargreaves, 2017). IAP2's Public Participation Spectrum (PPS) has been used widely to measure the degree of public participation in engagement projects. The PPS has five levels of public participation based on the idea that the greater the participation level, the more public impact a project can generate. The Energy Public Engagement Matrix (EPEM) offers a different perspective, as it helps communicators explore new opportunities and approaches to the design of public engagement. The exercise combines the two tools as a method for reviewing your communication project.

Instructions

Step 1. On the Public Participation Spectrum, decide the level of your project's public participation. If your project fits more than one description within PPS, identify all relevant levels.

Step 2. In the boxes below the PPS, list the public participation elements corresponding to the participation level. For instance, if your project belongs to the 'Involve' level, what types of activities are planned to involve the public?

Step 3. In light of your project's objectives (which were identified in the Chapter 1 exercise), consider whether your project's participation activities match the project objectives.

⁴ <https://www.iap2.org/page/pillars>

IAP2 Public Participation Spectrum

INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public issues and concerns are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
		ENGAGEMENT ACTIVITY		

International Association for Public Participation

		Who organises	
		Institution-led	Citizen-led
Public engagement	Issues	Public opinion surveys Consultations Public dialogue processes	Protests (e.g. fracking / infrastructure siting) Activist groups (e.g. Reclaim the Power)
	Actions	Sentiment mapping Media & digital engagement Co-design of energy technologies Living labs Everyday practices (e.g. laundry, heating, commuting)	Participatory dance & performance Artistic engagement Energy poverty / equality action groups Energy co-operatives Community energy groups Maker / hacker spaces
	Issues	Behaviour change initiatives Financial incentives Smart meter trials Consumer information & communication	
	Actions		
	Issues		
	Actions		

Energy Public Engagement Matrix

Source: Chilvers, Pallett and Hargreaves (2017)⁵

Step 4. In the Energy Public Engagement Matrix (above), find a description of an engagement format that best describes your project activities. If no description matches your project, you may add your own description to the EPEM in a relevant place by considering the two matrices: the organisational matrix ('Who organises?') and the orientation matrix (whether the project is 'issue-led' or 'action-led').

Step 5. By referring to your original project plans, consider whether your project's activities are likely to achieve the objectives. Go through all of the engagement formats listed in the EPEM to consider alternative approaches.

Consider

☞ Chilvers, Pallett and Hargreaves (2017) found that despite the growing diversity of available engagement methods, a major part of the energy sector's engagement activities take the format of elicitation (e.g., opinion surveys), consultation and behavioural-change initiatives. These formats are associated mostly with topics related to energy policy, technology and

⁵ For an updated version of the EPEM, the 'mapping space', see Chilvers, Bellamy, Pallett and Hargreaves (2021).

economics. When viewed through the Public Participation Spectrum, these findings suggest that the two highest participation levels (collaboration and empowerment) are rarely achieved in current energy-related public engagement projects.

👉 Chilvers, Pallett and Hargreaves (2017) argue that citizen-led, issue-oriented forms of engagement – top right box on the EPEM – can ‘raise public concerns that can be missed by the institution-led forms of engagement’. However, in the current situation, these unconventional formats are yet to be deployed widely in energy sector public engagement. An experimental project, the Futurescape City Tours (FCT), conducted by the Center for Nanotechnology in Society at Arizona State University, USA, offers an interesting example of citizen-led engagement in project design (Selin et al, 2016). The FCT invited citizen participants to express their ‘curiosities and concerns’ regarding the future of emerging technologies and urban sustainability in the first session of the project. These were fed into the design of the subsequently organised walking tour of Phoenix, Arizona. During the tour, participants visited various locations, which were selected according to the discussion in the agenda-setting session, interacting with experts and stakeholders associated with those specific locations. The final phase of the FCT was a gallery exhibition, which presented participants’ observations and future visions based on their experience of the FCT, soliciting further input from the exhibition audience (a good example of a circular mode of communication planning!). The FCT organisers reported that ‘Prioritizing citizen-set agendas...creates a sense of empowerment, relevance, and ownership of the process for all involved’, an insight that is in line with the comments made by Chilvers, Pallett and Hargreaves on the value of citizen-led engagement.

👉 There has been a small, but increasing number of public engagement projects that employed artistic intervention as a communication vehicle. ‘Made from Light: The Art and Science of Renewable Energy’ was organised by academics at the University of Liverpool at Tate Liverpool in 2018.⁶ The event combined an exhibition of art and literature on renewable energy and creative activities, employing music, writing and drawing. In such meetings, the communication process becomes an opportunity for co-creating new ideas and awareness (see Case Study). Similarly, the UK’s Art and Energy Collective⁷ has been organising several workshops and exhibitions in which the public was encouraged to participate in artistic sessions

⁶ <https://www.liverpool.ac.uk/literature-and-science/events/madefromlight/>

⁷ <https://artandenergy.org>

as a form of citizen-learning about energy technology.

☞ As energy technologies and infrastructures are immersed within urban environments, efforts to engage the public in conversations about new energy landscapes may need to encompass broader visions of sustainable cities. In other words, it is important to remember that energy communication is not only about envisioning new energy projects, but is also about understanding how these fit within the context of effective urban design that can foster positive community interactions. In 2017, the Generation Energy dialogues gathered the ideas of more than 380,000 Canadians about Canada's energy future (Generation Energy, 2018). Through workshops and online engagement, citizens defined the need for an energy future built on three key pillars: affordable, reliable, and clean energy. These energy visions were further situated within broader sustainability goals, including the need for economic prosperity, diverse social fabric and environmental quality. Different citizen-defined visions developed from this dialogue, highlighted new ways of living, working and connecting in cities, suburbs and rural communities. These citizen-inspired visions remind us that communication around energy transition may encompass multi-layered community transformations that are adapted to diverse geographic and cultural contexts.

Further Discussion

- ⚡ Identify additional public engagement opportunities for your project that would be more challenging to implement but could potentially produce more rewarding engagement and a more successful project. Realistically, resource limitations and time constraints will often make more intensive public engagement a challenge, but it is still worthwhile to consider these options and brainstorm how they could work and if this might be facilitated through new collaborations with a variety of public engagement and communication professionals.

- ⚡ Think about alternative, unconventional public engagement modes for your project that have rarely been tried before in your communication field but which may have been successful in other contexts. How would this activity be incorporated into your project, and what would be gained from doing so? Test out this experimental mode of engagement with a small number of participants from inside or outside your organisation to see what surprising results this yields.

⚡ Energy transitions are connected to many other aspects of everyday life – as in the example of developing an urban infrastructure to accommodate for new electric vehicles and ensuring that this is convenient to access. This means that sometimes the success of an energy project can depend on wider systems of social organisation and planning at a community or city level. Consider this in planning your public engagement activities and think about the questions you might ask your audience to gauge if your project might require wider social or cultural adjustments in the local community as well as changing elements of energy infrastructure or people's perceptions or choices about energy options.

CASE STUDY

Power Lines: Creative Responses to Energy Spaces

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Image ©Philippa Holloway 2015

Many of our interactions with energy landscapes – spaces associated with both energy production and use – are habituated: we are so familiar with the structures

and systems in place to provide and transmit energy that we no longer really see or think about them, or our opinions of them are fixed. However, writing creatively about energy spaces can defamiliarise these interactions and generate new understandings of how our physical and mental responses are informed by energy production and use.

The method we have devised and tested involves drawing upon psychogeographic practice to encourage a new view of familiar spaces, with creative responses expressing this new understanding. Psychogeography is defined as 'the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behaviour of individuals'.¹ This means a conscious awareness of how our environments and landscapes, both industrial and domestic, affect our emotions and daily behaviours. Communicating responses to energy through creative writing enables not only individual understanding of personal feelings, but also ways of communicating more widely with others the concerns, ideas and innovations under development today.

While ideally psychogeographic practice is undertaken by moving through the landscapes chosen for study, in our pilot sessions we asked participants to take an imagined journey into real spaces with which they were already familiar. This process involved guided meditative practice to facilitate a re-engagement with energy spaces participants were previously habituated to – industrial, domestic, personal and/or public. Participants noted their sensory and behavioural responses, and then composed short vignettes which described the space in relation to a situated viewpoint.

The participants were from a variety of international academic and industry backgrounds, and had varied and often very specialised relationships with energy production. Despite the potential for responses to be informed by technical knowledge, the guided activities encouraged engagement with sensory connections to energy spaces, and these led to intimate and personal vignettes. These short sketches revealed a new awareness of the intersection between the self and the space inhabited, which intrinsically referred to wider issues of society, industry, culture and community. Spaces present in the stories included domestic settings, community spaces and industrial spaces, but each highlighted a sense of dissonance between natural and artificial energies, such as conversation vs engines, bird

song vs transport or humming power lines. Both the content of the creative work and the participants' feedback indicated an awareness of the underlying tension between how energy technologies offer convenience and fulfil needs whilst simultaneously disrupting personal, interpersonal and natural rhythms. Participants reported a new awareness of their environments, but beyond that, they also expressed a desire to incorporate psychogeographic and creative techniques into their research, practice and modes of communication.

Note

¹ Debord, G. 1955. 'Introduction to a Critique of Urban Geography', in K. Knabb (ed. and trans.). 2006. *Situationist International Anthology*. Berkley: Bureau of Public Secrets.

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Final Remarks

This toolkit is intended to bridge the gap between energy communication practice, communication studies and some recent research on energy's social and cultural aspects. The authors hope that this toolkit will encourage energy communicators, who are routinely working on communicating energy issues, to take a step back and think about what energy communication means, with its inherent challenges and opportunities. The toolkit presents a tentative step towards putting academic research on socio-cultural aspects of energy into the practical context of public communication. A closer collaboration between energy communication practitioners and researchers would lead to a better understanding of energy communication and create new communication opportunities for both practitioners and researchers.

As set out in the Introduction, core challenges for energy communication are rooted in the nature of energy, which cuts across technical and everyday domains, is both visible and invisible, is mediated by material objects and is a public concern. By nature, energy is multi-faceted, which is why diverse understandings of it exist in society. Communication's role is to facilitate the flow of information, views, ideas and opinions within society, in which the plurality of values is the norm. Energy communicators play a pivotal role in the landscape of diverse values as intermediaries of knowledge and information.

During our survey of current energy communication practices, we were particularly struck by the

fact that conventional human interactions remain as a powerful communication medium. During consultation sessions, engagement workshops, social media exchanges, informative games and creative workshops, spontaneous human interactions often are at the heart of communication. Conversations, discussions and hands-on sessions can convey complex information about energy, and they often are the communication modes that leave long-lasting impressions on audiences. Despite the proliferation of digital communication, the human aspect of energy communication does not diminish its value.

It is also remarkable that energy communication continues to expand its repertoires. Communicators come up with imaginative and creative ways to communicate and engage with the public. Energy communicators across sectors, fields and organisations can undoubtedly learn from one another and cross-fertilise expertise. Those concerned with communicating energy can also draw on and adapt from other fields of communication, including those addressing sustainable development more generally. It is our sincere hope that this toolkit and continuing dialogue around it will help cross-fertilise energy communication expertise, which is essential for enhancing our society's capacity to understand energy and shape a sustainable energy future.

We are hoping to update this toolkit in the near future, for which we would love to hear about your ideas and experience of communicating energy issues. We will also welcome your feedback on this toolkit. Please contact us at: h.shin@qub.ac.uk