Data Use License Template

D12.5

January 2022

Deliverable

PROJECT ACRONYM	GRANT AGREEMENT #	PROJECT TITLE
TWINERGY	**957736**	**Intelligent interconnection of prosumers in positive energy communities with twins of things for digital energy markets**

DELIVERABLE REFERENCE NUMBER AND TITLE

D12.5

Data Use License Template

Revision: v1.0

AUTHORS

Lorraine Hudson	Zoe Banks Gross	Luke Sweeney	Valeria Righi
KWMC	KWMC	KWMC	IDEAS FOR CHANGE

DISSEMINATION LEVEL

✔ P Public

    C Confidential, only for members of the consortium and the Commission Services

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Version History

REVISION	DATE	AUTHOR	ORG...	DESCRIPTION
v0.1	27.09.2021	Lorraine Hudson	KWMC	Initial draft of sections 1 - 4
v0.2	07.10. 2021	Zoe Banks Gross & Luke Sweeney	KWMC	Comments added to draft 27.09.21
v0.3	07.10.2021	Valeria Righi	IFC	Comments added to draft 27.09.21
v0.4	07.10.2021	Lorraine Hudson	KWMC	Consolidated comments into updated version
v0.5	18.10.2021	Anna Ida Hudig & Dimitra Stefanatou	Arthur's Legal	Comments added to draft 07.10.2021
v0.6	19.10.2021	Lorraine Hudson	KWMC	Consolidation of input and editing across the entire document
v0.7	20.10.2021	Lucia Errandonea	IFC	Final review of deliverable & completed review template for PC
v0.8	21.10. 2021	Lorraine Hudson	KWMC	Review of template from IFC and finalise document for review by Arthurs Legal
v0.9	22.10.2010	Dimitra Stefanatou	Arthur's Legal	Final review & completed review template for PC
v0.10	25.10. 2021	Lorraine Hudson	KWMC	Finalised changes & submission of Final report to PC to submit to EC by 31.10.2021

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

v0.11	09.11.2021	Stylianos Karatzas	UoP	Comments to KWMC following quality review by UoP - additional actions & delivery date agreed between KWMC, Arthurs Legal and UoP on 16.11.2021
v0.12	19.01.2022	Lorraine Hudson	KWMC	Additional information added on actions undertaken & submission of Final report to PC
v0.13	27.01.2022	Anastasios Karameros	UoP	Quality review comments on final report to KWMC
v0.14	27.01.2022	Lorraine Hudson	KWMC	Addressed quality review comments & submission of Final report to PC
v1.0	31.01.2022	Lorraine Hudson	KWMC	Draft submitted to EC by the PC

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

4

Statement of Originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Legal Disclaimer

The information in this document is provided "as is", and no guarantee or warranty is given that the information is fit for any particular purpose. The above referenced authors shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials subject to any liability which is mandatory due to applicable law. The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the CINEA nor the European Commission is responsible for any use that may be made of the information contained therein.

Executive Summary

The aim of Deliverable D12.5 was to develop a data use license template that deals with data sharing, use and storage. It has been developed in Task 12.4 of Work Package 12: Ethics, Legislation and Standardisation. The task was led by Knowle West Media Centre (KWMC) working in collaboration with Ideas for Change. The report provides an overview of the development of the data use license template in the UK (Bristol) Pilot of the TwinERGY project and how this approach has then been shared with the other TwinERGY pilots in Greece, Italy and Germany. The approach is fully compliant with research ethics procedures, informed consent and GDPR legislation.

TwinERGY introduces a first of a kind Demand Response Framework, which enables the realization of novel business models, allowing electricity retailers and local energy communities to introduce themselves in energy markets under the role of an aggregator and in this way facilitate consumer representation in energy markets and flexibility transactions. The technology is being trialled in four pilot locations (Greece, Germany, Italy and UK) where different use cases will be tested with homes and offices. A goal of the project is to empower citizen's active participation in the energy market. Given that the pilots involve participants trialling the technologies, ethics and data protection are central to TwinERGY. The objectives of Work Package 12 are to ensure Regulatory, Legal and Ethics compliance and to develop this data use license to address any data sharing issues and prevent these potential issues from obstructing the project's progress.

The Data Use License Template is an approach that will enable the pilot participants to better understand how data is collected and managed in the TwinERGY project. It will help them to make informed choices around data sharing in relation to their participation in the project and to track those choices. The development of the template also helps project partners to better understand rights and responsibilities around data.

The report introduces the TwinERGY project and discusses data ethics and responsible technology, exploring data definitions, data rights and ownership. It explores best practice for working with communities around data ethics and data rights including practical tools. It discusses the TwinERGY approach to ethics and data protection and explains how the work links with Deliverable 12.1 (Legal & Ethical Compliance Guide) and Deliverable 13.1 (H- Requirement No. 1) and Deliverable 13.2 (POPD Requirement No.2) in Work Package 13 on Ethics Requirements.

The participant journey in the Bristol Pilot is mapped along with how data will be collected and managed in the pilot which was used to develop the data use license. The report contains the data use license template and explains how this has been developed, drawing upon experience from previous projects. The report describes the data workshop held with the Bristol pilot participants and the key findings. It also explains how the learning from D12.5 was shared with the other TwinERGY pilots (in Germany, Greece and Italy) through a workshop with project partners, which explored how they were addressing data issues and how they would use the tools developed. It also describes plans for further sharing with wider stakeholders through a workshop as part of the BRIDGE initiative.

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Index

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

List of Figures

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

List of Tables

1. Introduction

Deliverable D12.5 provides an overview of the development of a data use license template for use within the Bristol (UK) TwinERGY Pilot. The deliverable is led by Knowle West Media Centre (KWMC) working in collaboration with Ideas for Change. This deliverable sits in Work Package 12 of TwinERGY - 'Ethics, Legislation and Standardization' within Task 12.4. The report introduces the TwinERGY project and explains the purpose of the deliverable. It explores relevant terminology such as data ethics, rights and ownership and looks at best practice and tools with regards to working with communities around data ethics and data rights. The report explains how the data use license was developed and how the learning was shared with the other TwinERGY pilots in Germany, Greece and Italy.

1.1 TwinERGY

The TwinERGY project introduces a first of a kind Demand Response Framework. The framework will combine advanced technologies, business models and consumer-centric services. It will be trialled in four pilot locations (Greece, Germany, Italy and UK) where different use cases will be tested with homes and offices. A goal of the project is to empower citizen's active participation in the energy market and all of the pilots involve participants trialling the technologies. Ethics and data protection are therefore central to TwinERGY.

TwinERGY has an Ethics Manager, a role undertaken by project's legal partner, Arthur's Legal. In addition, each pilot has a Data Protection Manager and research ethics procedures to follow dependent on the institutions involved in the pilots. Deliverable 12.1- Legal & Ethical Compliance Guide (July 2021) – sets out the regulations that are mostly relevant for the TwinERGY activities, while surfacing key ethical aspects associated with the project. This also relates to the work conducted under Work Package 13 on Ethics Requirements, as captured under D13.1 'H- Requirement No. 1' and D13.2 'POPD Requirement No.2' (January 2021).

The focus of Task 12.4 is to develop a Data Use License template to support the Bristol pilot partners to work with pilot participants around data governance. This task sits within WP 12 (Ethics, Legislation and Standardization). The activity in Task 12.4. builds upon the ethical and data protection requirements that are set out in the reports mentioned above (D13.1 and D13.2). The purpose of the data use license is not to replace those activities,

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

but instead to provide a tool to guide and capture the process of working with citizens around data and informed consent and a method for participants to keep track of this. The data use license template will also be shared with the other pilots.

1.2 Purpose of this deliverable

The purpose of Task 12.4 was to develop a data use license working in collaboration with the Bristol pilot participants.

The objectives of the TwinERGY data use licence template are to:

a. help participants to understand how data will be collected and managed within the project.
b. support participants to make informed choices about what data they choose to share (and how) during their participation in the project.
c. track the consent process, so participants can review the stages of consent and are able to request that their data is removed from the project.

The template development was led by KWMC working in collaboration with Ideas for Change and involving the other project partners in the Bristol pilot (University of Bristol and Bristol City Council). The development process is explained in Section 4. The approach aligns with research ethics procedures, GDPR legislation and the principle of informed consent. It offers a creative way for citizens and energy infrastructure stakeholders to co-develop a personal data use license in relation to energy. It helped both the researchers and the participants to have a clearer understanding of how data is being collected and managed in TwinERGY, supporting them to better understand rights and responsibilities around data. The process of developing the data use license with project participants included a workshop, which helped to answer questions that participants had around data. It also contributed to developing data literacy skills within the pilot and building an ethical and trustworthy data ecosystem.

TwinERGY is a large and complex project involving 18 partners across Europe. A digital twin by its nature is a data driven technology and understanding the rights and responsibilities in relation to data protection and ethics is a complicated task. The different organisations and individuals involved in TwinERGY come with differing levels of experience of regulations such as GDPR. The idea is that the template is a user-friendly document that will help guide and support the process of informed consent in relation to the sharing of personal data. It allows participants to make choices and opt into their personal data being collected (or not). It is important that the template is easily understood by a lay person, 'a person who is not trained, qualified, or experienced in a particular subject or activity' (Collins Dictionary, 2021).

1.3 Structure of this report

Section 2 of the report discusses data ethics and responsible technology, exploring data definitions, including data rights and ownership. It explores best practice in this area including tools to support working with communities around data ethics and data rights.

Section 3 discusses the TwinERGY approach to ethics and data protection. It also explains the process of mapping the participant journey in the Bristol pilot of TwinERGY and identifies the stages where personal data will be collected and how.

Section 4 explains how the Data Use License has been developed in the Bristol pilot. This included a data workshop with the Bristol participants and a workshop to share learning with the other pilots in Germany, Greece and Italy.

Section 5 is the conclusion, which provides a summary of the report.

Annex 1 contains the Data Use License template and Annex 2 contains the updated research ethics form for the Bristol pilot, the Expression of Interest Form and the agendas from the workshops held.

2. Data ethics and rights

2.1 Data ethics and responsible technology

Data is everywhere and it forms part of the infrastructure of all of our lives, institutions, public organisations and private businesses (Samson et al., 2019). Data can help organisations and individuals with decision making and innovation, but handling data also comes with both moral and legal responsibilities especially when dealing with personal data. The UK Information Commissioner in 2018 mentioned that "personal data has become the currency by which society does business but advances in technology should not mean organisations racing ahead of people's rights. Individuals should be the ones in control and organisations must demonstrate their accountability to the public" (ICO, 2018).

Data protection is a fundamental human right (European Commission, 2018), one which is enshrined in Article 8 of the EU Charter of Fundamental Rights and the Treaty on the Functioning of the European Union, which gives effect to individuals' right to privacy by providing them with control over the way information about them is collected and used (European Commission, 2021). The European Commission strengthened the rights of people over their personal data with the introduction of the General Data Protection Regulation (GDPR) which came into force in May 2018. The UK has enshrined GDPR into law through the UK Data Protection Act (UK Parliament, 2018).

Data ethics, as a field, can be thought of as a network of nodes representing frequently entangled and interacting but different streams of thought and practice (Taylor and Dencik, 2020). These nodes arise from different theoretical approaches to data ethics including philosophical, social sciences, computer ethics, industry and civil society advocacy. Here we focus on civil society advocacy as a key ethical principle of TwinERGY is 'citizen orientated data collection and governance' which is described in Section 3. The civil society advocacy node is 'where data ethics is providing a framework for guidelines to advance data developments 'for good' across a range of contexts' (Taylor and Dencik, 2020). For example, the UK the Open Data Institute (ODI) define data ethics as 'a branch of ethics that evaluates data practices with the potential to adversely impact on people and society – in data collection, sharing and use' (ODI, 2021a). The ODI say that data ethics should be addressed at all stages of an activity; from stewarding of data (i.e. when

collecting, maintaining and sharing data), through creating information from that data (e.g. in products and services, insights, stories and visualisations), and then deciding what to do with the information created.

Within data-driven technology research projects, such as TwinERGY, project partners have a responsibility to ensure that the technology is developed and deployed in a responsible manner. This involves compliance with relevant data protection regulations including GDPR; ensuring that data is collected, used, stored and shared with minimal harm. The project partners have to provide participants with detailed information about what will happen to the personal and non-personal data that will be collected. It also requires that organisations processing personal data, ensure that the data are properly protected, minimised, and destroyed when no longer needed. The first step to handling data responsibly is understanding what data will be collected and how to categorise that data, which can often be a complicated process.

2.2 Data definitions

There are many definitions related to data; including types of data, access to that data, the way it is processed and responsibilities around processing it. Some commonly used data definitions are shown in Table 1.

Table 1: Data definitions

Data type	Definition	Source
Personal data	'any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, psychological, genetic, mental, economic, cultural or social identity of that natural person'	European Commission (2021a)
Open data	'data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike'	Open Knowledge Foundation (2021)
Closed data	'data that can only be accessed by its subject, owner or holder'	ODI cited in ALERC (2016)
Shared data	'Harder to define and exists in "shades" as follows:	ODI cited in ALERC (2016)

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

	- Named access: data that is shared only with named people or organisations - Group-based access: data that is available to specific groups who meet certain criteria - Public access: data that is available to anyone under terms and conditions that are not 'open'	
Data controller	'the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law'	European Commission (2021a)
Data processor	'a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller'	European Commission (2021a)

However, data definitions can be difficult to understand, and many people (including researchers) often find it hard to categorise the types of data they are working with and struggle to understand their rights and responsibilities around data. ODI have said 'To unpack data's challenges and its benefits, we need to be precise about what these things mean. They should be clear and familiar to everyone, so we can all have informed conversations about how we use them, how they affect us and how we plan for the future' (ODI, 2021b).

As part of the 'About Data About Us' research project, ODI developed a diagram that can help to explain different types of data which is shown in Figure 1. They designed it to be used as a simple tool make people aware of the kind of data they are being asked to share and why, and to support them to make decisions on what they would like to share or not. They said 'We felt this would help people better understand what they are being asked to consent to and assist with improving education' (Samson et al., 2019).

Figure 1: ODI Types of Data About Us (ODI,2021)

The diagram in Figure 1 illustrates three categories of data in the 'As people' section; personal data, sensitive data and behavioural data. These three categories would all be classified as 'personal data' in GDPR, as defined in Table 1 above, i.e. this is any information relating to an identified or identifiable natural person. Sensitive personal data is data that describes integral features of who we are. Whilst behavioural data describes people's behaviour and preferences and can include data collected through websites, for example via cookies which track, monitor and analyse the behaviours we demonstrate when we are online.

The ODI have also created The Data Spectrum as shown in Figure 2. The Data Spectrum can help to reframe discussions about data around the question of 'can I use the data?' i.e. do I have a license to use the data? (Dgen Network, 2021). Standard licenses are used to communicate what data is open or what restrictions apply to the data. These include Creative Commons Licenses[1] and in the UK The Open Government License[2]. The licence agreement is the legal arrangement between the creator/depositor of the data set and the data repository, signifying what a user is allowed to do with the data. Data licenses also apply when publishing data in data repositories such as repositories such up by a journal, institution, general purpose depository or domain specific (CESSDA, 2021). An

---

[1] https://creativecommons.org/about/cclicenses/
[2] http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

example is Zenodo[3], a general-purpose open-access repository developed under the European OpenAIRE program and operated by CERN.
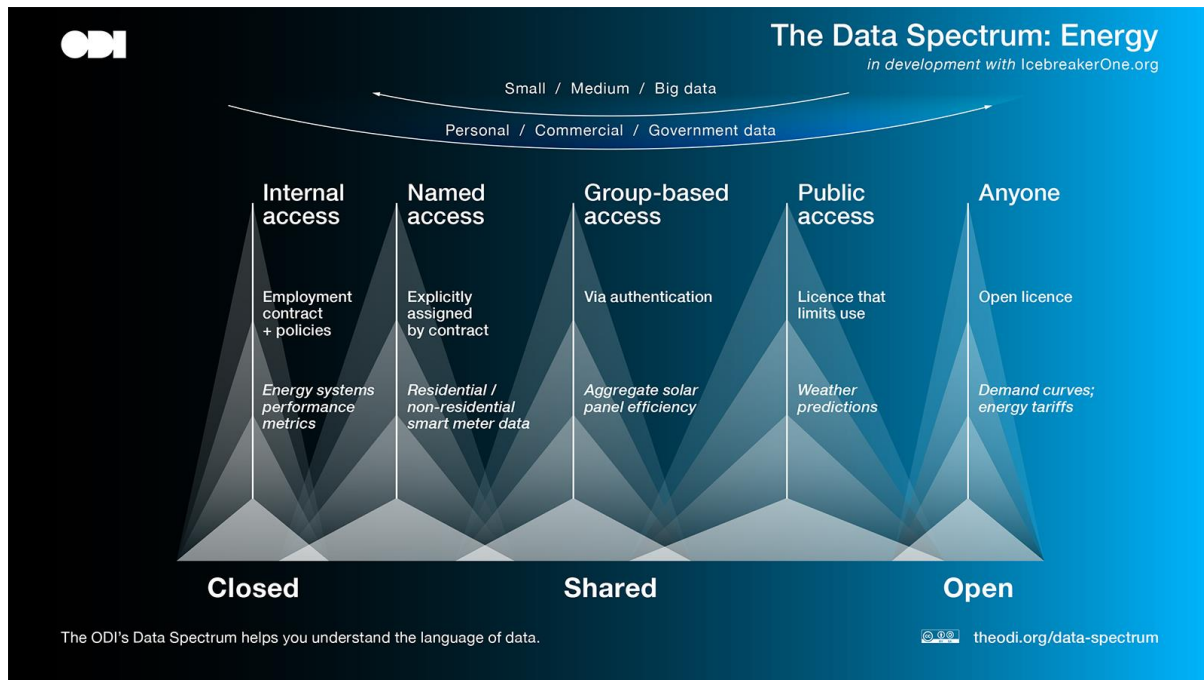
Figure 2: The Data Spectrum - Energy (ODI, 2021c)

2.3 Data ownership and rights

In the age of digitalisation, dealing with data responsibly can present challenges. Public and private organisations are increasingly using data driven technologies that collect and share personal data, this can provide benefits to the general public but there are also growing concerns from individuals, groups or communities who want to retain control over the handling of their data. Attempts to research these issues has led to the concept of data sovereignty and Hummel et al. (2021) undertook a systematic review on data sovereignty, reviewing 341 publications and analysing the frequency of different notions such as data sovereignty, digital sovereignty, and cyber sovereignty. While their study revealed a considerable degree of divergence and sometimes a lack of clarity about the intended meanings of data sovereignty, they found 'it generally relates in some way to meaningful control, ownership, and other claims to data articulated by a variety of agents ranging from individuals to countries'.

---

[3] https://zenodo.org/communities/openaire/?page=1&size=20

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

The ownership of data is a complex issue which is far from straightforward. Data ownership can refer to both the possession and responsibility for information, as well as implying power over the use of that data. The ODI suggest that a rights-based model, which gives people control over the ways that data about them is used, is more viable than a data ownership model. Reasons for this include the fact that data is non-rivalrous (i.e. your use of data does not reduce its availability to other people) but also because data can be about multiple people, usually more than one person or organisation contributes to creating data and the value of data increases when it is connected to other data (ODI, 2016).

Some legal mechanisms already exist that set out the rights and responsibilities for particular types of data. For example, under GDPR organisations which collect or process personal data have responsibilities as data controllers and data processors to guard against misuse and harm (European Commission, 2021a). Under the European Union's Database Directive[4], organisations which have invested significant time, money and effort in producing a database have an ownership right and some ability to control who accesses and uses that data, but not absolute control. Some legal concepts of data ownership also exist through IP laws.

Researchers and policymakers often assume that the public is not interested in data issues, but research by the ODI has found out that people are increasingly concerned about how their data is being used. 'They want to feel in control, but they don't always have the language to explain their concerns about data or the enthusiasm to do so' (ODI, 2020). There will also be many who are unaware of the harm the processing of their personal data could cause. In the UK, the Information Commissioners Office (ICO) commissions an annual survey to assess the level of awareness experienced by individuals of their information rights (ICO, 2021). In 2021, just under 3 out of 10 (28%) people reported high trust and confidence in companies and organisations storing and using their personal information (Harris Interactive, 2021).

The ODI, Royal Society of Arts (RSA) and Luminate[5] collaborated on research which led to the 'About Data About Us' report (Samson et al., 2019) which explores how members of the UK public feel about data about them, about having ownership or rights around it, and what kind of control or protection they feel is missing or needs strengthening. The research revealed that the general public are interested knowing what data is held about

---

[4] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31996L0009
[5] a global philanthropic organisation focused on empowering people and institutions to work together to build just and fair societies

them and they want to know why, how, when and for what purpose that data is being held or shared about them. They also want to be asked to 'opt in', not 'opt out' of it being collected and used. They often reported that they were happy for data about them to be shared for societal benefits but want to understand and have a say in what it is used for. They also want the freedom to change their minds. The participants said, 'they are uncomfortable with data about them being used in automated decision-making that makes assumptions about who they are based on how they behave' (Samson et al., 2019). When working with data, researchers can also assume that if an issue isn't raised by participants, then no one cares about it, but it may be that they haven't been clearly informed of the risks associated with how their data will be processed. Research has also shown that when it comes 'to questions of data and technology, a lack of knowledge is not due to apathy or ignorance but is often an outcome of the obscurity of the processes surrounding algorithmic decision-making and a sense of disempowerment that anything can be done about their uses' (Denclick and Cable, 2017; Warne et al., 2021).

Developing the data literacy skills of both researchers and communities appears to be fundamental to people being able to better understanding their rights and responsibilities around data. ODI have said 'in order to build stronger data rights, we need to build a language around data that people can understand and engage with' (ODI, 2019). They see a trustworthy data ecosystem as central to this, which 'builds understanding together, and creates positive awareness and rational reasoning around risks and responsibilities' (ODI, 2019). The Data Justice Lab also makes the argument that increasing civic participation in data as well as the use of algorithms is important to democratize the sector and that 'engaging the public in technological innovation is important for ensuring trust and progress further down the line' (Warne et al., 2021).

2.4 Tools to support data ethics and data rights

A range of organisations and projects have been exploring topics related to data ethics, data rights and data literacy, seeking to develop tools that support people to better understand data and make informed choices about who they choose to share data with. Below we explore some examples of practical tools focussed on engaging with communities around these topics.

The ODI have created a Data Ethics Canvas which is a tool for anyone who collects, uses or shares data, which helps to identify and manage ethical issues. This was originally

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

developed through a collaborative partnership working with Arup and was built upon the Ethics Canvas – a tool for assessing the ethical implications of any project designed by the ADAPT Centre for Digital Content Technology (CC-BY-SA 3.0)[6] which itself was developed from the Business Model Canvas[7] created by Alex Osterwalder (ODI, 2017). The Data Ethics Canvas has a focus on the people and communities affected by data collection, assessing the ways in which they might be affected and putting in place steps to mitigate this. The aim is for it to promote discussion and critical thinking rather than being a checklist approach.

The Data Justice Lab have created 'Critical data literacy tools for advancing data justice: A guidebook' (Brand and Sander, 2020). The guidebook provides links to a range of freely available data literacy tools, keeping a diversity of audiences and skill levels in mind. There are six categories of literacy tools: (i) workshop resources, (ii) interactive learning tools, (iii) investigation tools, (iv) participation tools for algorithmic accountability projects, (v) quick guides for implementing stronger privacy and (vi) in-depth guides to data protection and the data economy. Tools the guidebook links to include the 'Digital Defense Playbook: Community Power Tools for Reclaiming Data' which was developed through the Our Data Bodies[8] project (Lewis et al., 2018). The Playbook provides workshop resources for data justice and for data access for equity. Our Data Bodies has a particular focus on working with marginalised communities.

The Data Justice Lab with input from the Ada Lovelace Institute, have produced the 'Advancing civic participation in algorithmic decision-making: A guidebook for the public sector' (Warne et al., 2021) which is for individuals and teams working in the public sector whose roles involve working with the public in decision-making relating to the use of data, artificial intelligence, and automated decision-making systems. The guidebook provides practical methods for bringing the general public further into decision-making processes and giving citizens voice.

The Horizon 2020 funded DECODE project[9] was a response to people's concerns about a loss of control over their personal information on the internet. It involved a consortium of 15 partners across Europe, including Ideas for Change as a subcontractor. The project developed a free and open-source ecosystem of tools, validated in real life contexts that put individuals in control of whether they keep their personal information private or share it for the public good. DECODE sought to enable the data commons, where people

---

[6] https://www.ethicscanvas.org
[7] https://www.strategyzer.com/canvas
[8] https://www.odbproject.org
[9] https://decodeproject.eu

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

regained control of their data by deciding who to share it with, under which rules, when and for what purpose. Data commons come in many different shapes and sizes and each requires careful design depending on the type of data and sector (DECODE, 2020). DECODE provides a range of examples which aim to show the different types of data commons that are emerging, from larger-scale sharing of research data, to more community-oriented forms of sharing, for example based upon citizen sensing.

In DECODE Ideas for Change developed co-creation workshops to discuss with citizens the implications of sharing data when using Internet of Things (IOT) environmental sensors. This was done by providing workshop participants with scenario cards that described different data sharing situations where personal or collective benefits needed to be weighed against potential risks. Later, working in groups, participants were invited to discuss their views on risks and benefits associated with sharing the different data collected by the IOT environmental sensors.

The TRIEM project[10], developed in Barcelona (Spain) by Ideas for Change with the support of the Barcelona City Council, aimed to prepare the general public with the right tools so that they could take a leading role in controlling their health data by judging critical variables needed to design new licences for data access and use. This involved individually and collectively considering their preferences and deciding what data to share, who with, under which conditions and for what purpose. The project developed co-creation workshops with citizens and health experts to collaboratively reflect upon data rights, and the opportunities and risks to share health data for research. The participants were first invited to discuss the elements they considered the most important when weighing out their preferences on data sharing, then they were asked to co-create desirable and undesirable data sharing scenarios by combining the identified elements.

In the Horizon 2020 funded REPLICATE project[11], project partners trialled a project data use policy template which the ODI had created. REPLICATE coincided with the rollout of GDPR and thus the legislation played an integral part of the development of the template approach. The template was a document intended to provide information to users/contributors/participants whose personal data was being collected, used and shared by the project. With the aim of supporting them to make an informed choice as to whether to participate or not, and to answer questions they may have about the project.

---

[10] http://www.triem.ideasforchange.com/en/welcome
[11] https://replicate-project.eu

TWIN ERGY

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

In REPLICATE, KWMC worked with the participants to co-create the Ladybird, a personal mobile device for collecting air quality data. A Privacy Policy[12] was created to provide information to participants about the project's approach to collecting, using and sharing personal data about them so that they could make informed decisions about data sharing. This privacy policy was developed by using and adapting the ODI data use policy template. The privacy policy was web-based and explained the goals of the project, the data terms including access to data, data processes and data categories. It explained what data would be collected and how it would be used and shared by different people and organisations in the project including any open data. It also explained people's rights and responsibilities with regards to data (including researchers and participants), described how to report any concerns and included other information such as the data retention policy. KWMC also worked with participants to build the web application (app) associated with the Ladybird sensor, and through this app participants could make choices around how personal and non-personal data was shared.

---

[12] https://www.bristolapproach.org/ladybird-privacy-policy/#data-processes

3. Data ecosystem in TwinERGY

3.1 TwinERGY and data ethics

The TwinERGY approach to ethical issues is set out in Deliverable 12.1 - Legal & Ethical Compliance Guide (July 2021). This includes a Pilots' Guide on Ethics and Regulation, for the TwinERGY partner organisations. It also sets out a set of 'Ethical Principles' which includes a 'citizen orientated data collection and governance' principle which is shown in Figure 3 below, which is copied from Deliverable 12.1.

Description	Recommendations
TwinERGY adopts a **human-driven approach to data**. A variety of data will be collected to run pilot activities. These range from contact details, information about homes and buildings, energy consumption and behavioural data, and personal opinions, for instance about comfort levels at home.	• Simple language has to be used when communicating with participants about what data are collected, how, and why.
Even though written consent is not required in all the pilot locations according to their ethical formal procedures, the partners commit to ensuring that participants are informed, understand, and agree on the purpose of data collection, in accordance with requirements on valid consent set under D13.1 'H- Requirement No. 1'.	• Offer participants the opportunity and the means to exercise active governance over their data: e.g., decide which data to grant and under which condition, discuss the fate of the data when the project is finalised, etc. To this end, pilot leaders are encouraged to participate and follow the activities conducted under *Task 12.4 - Data use licenses*.
The consortium will also work towards **providing pilot participants with better possibilities to participate in the entire data collection process**: from identification of data needs; selecting appropriate collection tools; collection, analysis, and interpretation. This will **ensure the relevance and reliability of the collected data**.	• Ensure that the data collected are shared appropriately with participants. This 'return' of data should be delivered in a meaningful and comprehensive way in order to support participant's learnings and demonstrate the value of their inputs.

Figure 3: TwinERGY Citizen-Orientated Data Collection and Governance Principle (van der Wees et al., 2021)

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

The TwinERGY ethical principles emerged from the participatory nature of the project, which implies the involvement of citizens (as volunteers) in many stages of the innovation and development process. As each of the four TwinERGY pilot studies will engage the general public, this participation will need to be managed carefully throughout the project, e.g., considering the role of participants and researchers, how this is made explicit and communicated, and what is promised to the public.

The data use license template being developed in Task 12.4 is a tool that can help to support the implementation of the 'Citizen-Orientated Data Collection and Governance' principle. As part of its development in the Bristol pilot, the project partners are considering how data will be collected, how this will be communicated in simple language, how we will provide the opportunity and the means by which participants can exercise active governance over their data and exploring ways in which research data collected during the project can be shared appropriately with participants.

The Pilots' Guide also includes questions formulated to be addressed by technical partners in the TwinERGY consortium. Two of the sets of questions are particularly relevant to the data use license template development; the questions which look at data from a human-centric perspective (see Figure 4) and the questions which look at it from a data-centric perspective (see Figure 5).

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Human-Centric Perspective

Questions below are based on the General Data Protection Regulation, the ePrivacy Directive and forthcoming Regulation, and Consumer Protection regulations

Do the piloting activities include the processing of any **personal data**? Personal data could be, for example, a name, location, identification number, or physical, psychological, or social attributes of a person. Formally, personal data are any information associated with an identified or identifiable natural person.

How will the data intended to process be relevant for the purposes of the research project (**data minimisation principle**)?

What do the **data flows** between machines look like?

What is the **lawful basis** for processing the personal data?

Who **decides upon** personal data?

Who **process** personal data (e.g., collection, storage, transmission)?

Where does the processing of personal data take place, such as storage (e.g., within EU or outside of EU)?

For **how long** is the data stored?

Who can access the data, and do individuals have access to their own data?

Is it technically possible for a user to execute its rights under the GDPR? For example, if a user wants to **stop sharing (part of) their personal data**, for privacy protection or other reasons, without stopping the infrastructure or devices from functioning.

What **pseudonymization/anonymisation** techniques will be implemented?

Did those whose personal data are collected provide **informed consented** for the processing of their data?

Is there any kind of **profiling of individuals and groups** performed in the piloting activities by means of data processing, and if so, what are the consequences and how will the participants be informed about this?

What **security measures** will be implemented to safeguard the (privacy) **rights and freedoms** of those whose data are collected?

Figure 4: TwinERGY Human Centric Perspective Questions (Van der Wees et al., 2021)

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Data-Centric Perspective

Questions below are based on the Free Flow of Non-Personal Data Regulation.

What types of **non-personal data, if any,** are processed by the piloting activities?

Who or what **sends** the information (e.g., a user, application, service provider or device)?

Who or what **receives** the information? e.g., a user, application, service provider or device?

Who is responsible for the **processing** (e.g., collection, storage or exchange) **of non-**

Figure 5: TwinERGY Data Centric Perspective Questions (Van der Wees et al., 2021)

3.2 Data collection in the Bristol Pilot of TwinERGY

As part of the Bristol TwinERGY pilot planning, KWMC have mapped the participant journey (see Figure 6), which was developed through discussion with University of Bristol and Bristol City Council. This shows the different stages at which there will be interaction with the pilot participants e.g., at events, when they are asked to complete forms, during home visits when technology is installed or when a survey is undertaken. In brackets it shows which partner is leading this activity.

Table 2 shows the types of data that will be collected during these activities with participants, which partners will need to have access to the data sets and how the process of informed consent will be managed. This mapping helped the Bristol pilot to identify roles around data (who is the Data Controller and Data Processor) and where data sharing agreements must be put in place.

```
┌─────────────────────────────────────┐
│ Find out about project - at market  │
│ event or by email (KWMC & BCC)      │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Sent a EOI form by (KWMC &BCC)      │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Interested Person - submits EOI     │
│ Form to KWMC                        │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Check if home suitable & confirm if │
│ participants (BCC & KWMC)           │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Participant sent Research Ethics    │
│ Form +  Contract (KWMC)             │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Participant signs Research Ethics   │
│ & Contract (including T&Cs) and     │
│ emails to KWMC                      │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Sent workshop registration form     │
│ links to anonymous equalities form  │
│ (KWMC) to complete                  │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ iPad delivered and set up (KWMC)    │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Attend data workshop or sent        │
│ recording if can't make date (KWMC) │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Home visit to complete building     │
│ survey (UoB & KWMC)                 │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Technology installation + related   │
│ project  activities (UoB, BCC, KWMC │
│ & other TwinERGY partners)          │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Mid project evaluation (UoB, BCC &  │
│ KWMC)                               │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Citizen learning events (KWMC)      │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ Receive access to project output e.g.│
│ publications (UoB, BCC & KWMC)      │
└─────────────────────────────────────┘
                  ↓
┌─────────────────────────────────────┐
│ End of project evaluation (UoB, BCC &│
│ KWMC)                               │
└─────────────────────────────────────┘
```

Key:

Expression of Interest (EOI)

Terms and Conditions (T&Cs)

Frequently Asked Questions (FAQ)

Figure 6: The Participant Journey in the Bristol Pilot of TwinERGY

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Table 2: Summary of Data being collected In the Bristol TwinERGY Pilot

Mechanism of data collection	Personal data collected	Other data collected	Reason for data collection	Data collector	Who data being shared with
Expression of Interest Form	Name, address, email, telephone number, details about home	Details of home	Interest in taking part in pilot & assess suitability of home for technology	KWMC	Bristol City Council (BCC) & University of Bristol (UoB) – KWMC put in place data sharing agreement
Research Ethics Form	Name		Informed consent	UoB	University of Patras, EC, BCC, KWMC
Contract including terms & conditions	Name, address, email, telephone number		Agreement of roles and responsibilities in the project	BCC	KWMC, UoB, third party suppliers to install equipment
Building survey	Possible personal data if name on information requested (will try to minimise this)	Data about homes including energy data, details of building and use	To create energy digital twin of home	BCC	UoB, KWMC, IES
Workshop (data & iPad) registration form	Name, email address	Pre-evaluation questions	To express interest in attending workshop	KWMC	No sharing of personal data
Anonymous Equalities Form	This is collecting sensitive data but with no name attached to it	Equalities data	Monitoring equalities links into KPIs on diversity & inclusion	KWMC	Aggregated data reported in KPIs
Equiwatt smart plugs & power capsule energy monitoring device (accessed via app or digital platform)	Name, address, email, telephone number	Energy data	Device purchased by University of Bristol. Equiwatt is a smart energy platform that helps consumers save energy at peak times.	Equiwatt	Data sharing agreement being set up with UoB Shared with TwinERGY partners /

			Participant signs up to Equiwatt's terms and conditions (T&Cs) when they register on the app/platform (T&Cs included project contract sent by BCC)		Module leading partners
Passiv Energy Hub UK automated control system that connects to the battery (accessed via app or digital platform)	Name, address, email, telephone number	Energy data	BCC contracting Passiv UK Ltd to help develop an automated control system to optimise the participant's battery and solar PV equipment. Participant signs up to Passiv's T&Cs when they register on the app/platform (T&Cs included project contract sent by BCC)	PassivUK Ltd	Data sharing agreement being set up with UoB

Shared with TwinERGY partners / Module leading partners |
iPad with Jamf (an app with automates IT admin tasks)	Name and email		To remotely manage installation of apps on ipad and updating operating system	KWMC	No sharing of personal data
Citizen learning events – registration form	Name, email, postcode		To know who is attending events and make arrangements	KWMC	No sharing of personal data
Evaluation surveys	To be decided when they are designed		To evaluate elements of the project.	KWMC and other partners	To be agreed when surveys designed

4. Developing the data use license template and sharing learning

4.1 Data use licence template

The objectives of the TwinERGY data use licence are to:

⇒ help participants to understand how data will be collected and managed within the project.

⇒ support participants to make informed choices about what data they choose to share (and how) during their participation in the project.

⇒ track the consent process, so participants can review the stages of consent and are able to request that their data is removed from the project.

A goal of Task 12.4 was for the Bristol pilot partners to work with the participants in their pilot to help them understand how data will be collected and used in the TwinERGY and to involve them in the development of the data use license template. To enable this, KWMC drafted an initial version of the data use license template based on KWMC's previous experience of developing similar documents in other projects. KWMC worked with University of Bristol and Bristol City Council to collect information to go into the template through the process of mapping the participant journey in the pilot and understanding how and when data would need to be collected. KWMC then worked with IFC to design a data workshop which KWMC ran with the Bristol pilot participants to explore data issues in detail. The workshop was also attended by Bristol City Council. The data use license template was updated after the workshop.

The data use license template is in Annex 1 (see Figure 24) and it is also hosted on the internet[13] so it is accessible to the Bristol pilot participants. It provides a simple overview of the project aims and partners involved, as well as data related information e.g. data types and access, how data is managed in the Bristol pilot, responsibilities and contact details for further information. It was developed from a template originally created by the ODI that was adapted by KWMC for use in the REPLICATE project, where it was used to create a privacy policy for the Ladybird sensors (see Section 2.4 for further discussion). For TwinERGY KWMC have amended sections of the template to make it more user-friendly and added additional information that is specific to this project. For example,

---

[13] https://kwmc.cloud/twinergy-data-use-license/

making the data types clearer - personal data, sensitive data, behavioural data and societal data – where we drew upon the learning of the 'About Data About Us' ODI research project discussed in Section 2.2.

The template has sections that provide links to the various forms the Bristol pilot participants are asked to complete during the pilot. For example, the Research Ethics Participant Information Sheet and Consent Form (Figure 25) and the Expression of Interest Form (Figure 26) which are in Annex 2 of this report. The Research Ethics form in Figure 25 has been updated by the Bristol pilot partners (University of Bristol, KWMC and Bristol City Council) from the version originally presented in the TwinERGY Ethics Deliverable 13.1, with agreement from the project Ethics Manager (Arthur's Legal). The purpose of these changes was to make the information easier to understand and to provide clarity on how data is being managed in line with UK GDPR and the principles of informed consent.

4.2 Data Workshop with Bristol pilot participants

In December 2021 a data workshop was held with Bristol pilot participants to explore the different types of data that will be collected in the TwinERGY pilot study, to discuss how this will be managed (including the risks and benefits) and to explore the draft data use license template and get feedback and ideas for improvement. KWMC and Ideas for Change worked together to design the workshop using creative approaches to engage the participants. They drew upon TwinERGY Deliverable 2.1: Best practice guidelines for engaging citizens in the pilots. The data workshops used a risk/benefit persona tool created by Ideas for Change and others in the DECODE and TRIEM projects (discussed in Section 2.4), which was developed for co-creation workshops around data. This is available through an open-source licence and was adapted in TwinERGY to support debates with pilot participants around data collected by the technologies. Below we briefly describe how the participants were recruited and then we give an overview of how the workshop was organised, the agenda and a summary of the key findings.

The Bristol pilot had a target to involve 12 homes, with a particular focus on engaging with citizens underrepresented in energy innovation projects e.g. young people, homes in fuel poverty, families from disadvantages areas and people from Black, Asian and minority ethnic groups. KWMC undertook recruitment activities for the Bristol pilot of TwinERGY from July to October 2021. This involved two in-person events at the Filwood market in Knowle West, South Bristol on the 3rd July 2021 and 4th September 2021. Bristol

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

City Council also contacted people who were involved in other energy projects they coordinate, where participants had (or were soon to have) solar panels installed on their homes. People who expressed an interest in taking part in TwinERGY were asked to complete the Expression of Interest form (Figure 25 in Annex 2). The information collected was used by the Bristol City Council to assess the suitability of the homes to take part in the pilot. For example, checking they have suitable solar PV panels, sufficient space for installation of a battery and access to WiFi. Once a home was confirmed as suitable, the potential participant was then provided with the research ethics form and the project contract to read, ask questions and sign if they wanted to take part in TwinERGY. By the 3rd December 2021 12 homes had been recruited to take part in the Bristol pilot.

The Bristol pilot participants range in ages from young families through to people over 70 years old. 11 of the homes are in disadvantaged areas of Bristol (9 in the 10% most deprived neighbourhoods in England and 2 in the top 20% most deprived – as defined by the England Indices of Multiple Deprivation[14]). These are areas that face income deprivation, fuel poverty, child poverty, greater health deprivation and disability. We also have participants from Black, Asian and minority ethnic communities.

The data workshop was held with the pilot participants on the 9th December 2021 from 19:00-20:30 UK time. A copy of the workshop agenda is included in Annex 2 (Table 3). As part of the workshop planning, the participants were consulted on whether they would prefer an online or in person workshop and the majority selected online, so the event was held using Zoom. 10 of the 12 participants registered for the workshop and on the evening 8 were able to attend. The other 4 participants were sent a recording after the workshop.

The objectives of the workshop were for participants to:
- understand the types of data being collected in TwinERGY and how they will be used within the project
- understand the principle of informed consent
- explore the benefits and risks of sharing data
- understand how to make choices about data sharing
- know how to use the iPad to access apps and the data use license
- feed their ideas into the data use license template development

---

14   https://www.bristol.gov.uk/documents/20182/32951/Deprivation+in+Bristol+2019.pdf/ff3e5492-9849-6300-b227-1bdff2779f80

Prior to the data workshop the participants completed a pre-survey/registration form[15], which included some questions about energy/data use as well as informed consent questions to deal with UK GDPR. KWMC then delivered iPads to the participants before the workshop. The iPads are used by participants to access the project applications e.g. apps and online forms. The iPads are managed using Jamf (IT administration software), which involves the KWMC IT technician installing the apps at the start of the project and reinstalling them if issues arise or new apps need to be added. The delivery visit was also an opportunity to explain this to participants, show them how to set up the iPad on their WiFi, and discuss any privacy concerns or questions. KWMC contact participants in advance if an app requires routine updating remotely and we only access the iPad device with a participant's permission.

The pre-survey was an opportunity for the pilot partners to understand how familiar the Bristol participants were with data and energy. It was completed by 10 of the 12 participants. They were asked if they were aware of the energy use in their household and Figure 7 shows that 70% agreed or strongly agreed they were. All the participants said they were comfortable using technology (see Figure 8) and the majority used technology and data in their daily decision making (see Figure 9), but 1 participant said they didn't. 90% said they knew what personal data was but one participant indicated they were not sure as shown on Figure 10. All the participants agreed or strongly agreed they were comfortable sharing data with project partners if they could see a benefit for their household, as shown in Figure 11.
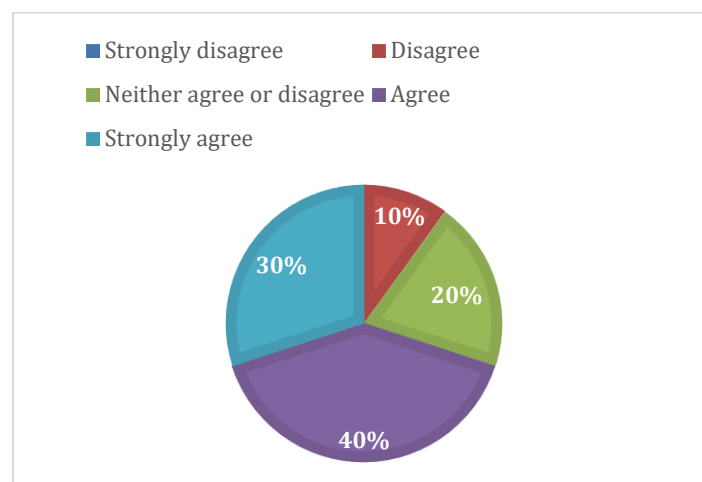

Figure 7: Pre-Survey: I am aware of the energy use of my household?
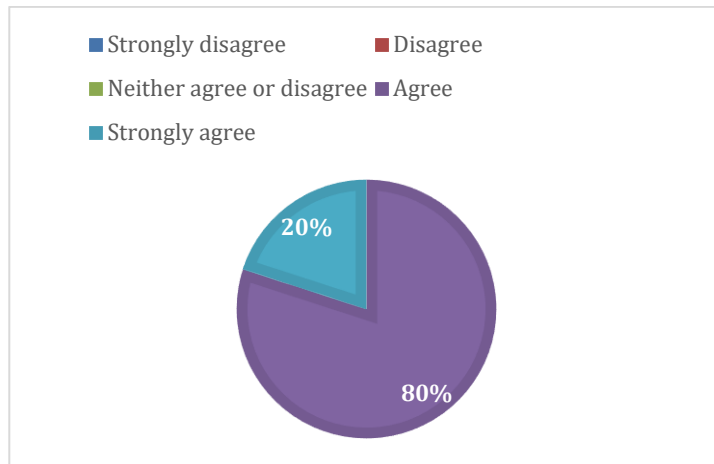
---

[15] https://airtable.com/shr7MEkbDVAti0BCu

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

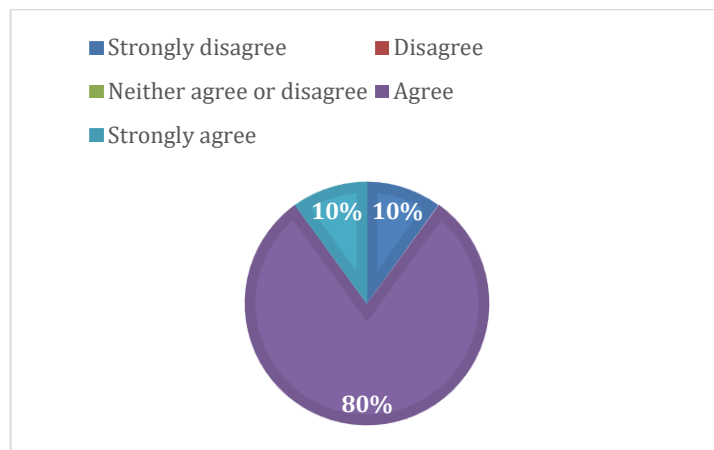*Figure 8: Pre-Survey: I am comfortable using technology?*

Figure 9: Pre-Survey: I use technology and data in my daily decision making?
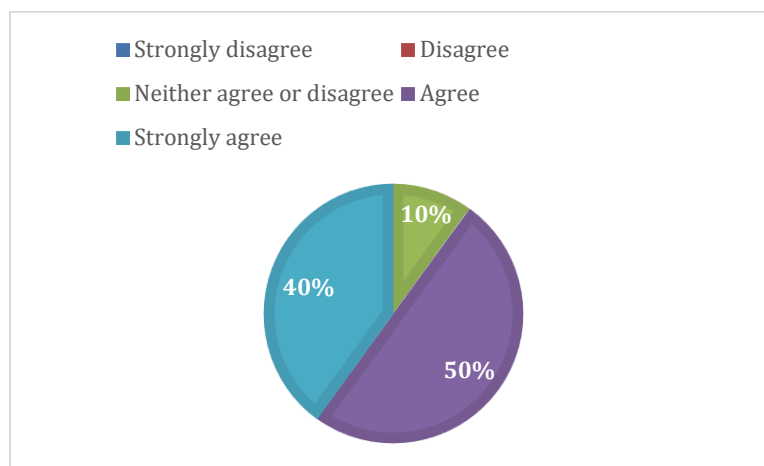

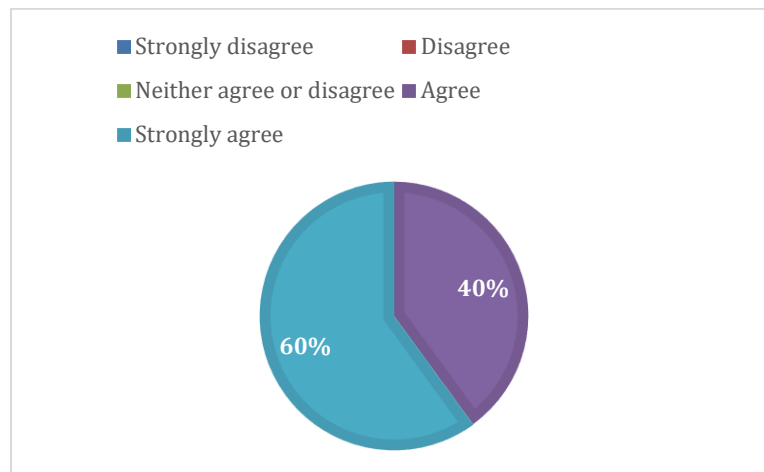*Figure 10: Pre-Survey: I understand what personal data is?*

Figure 11: Pre-Survey: I am comfortable sharing data with the project if I can see there is a benefit for my household

In the first part of the data workshop, we explored what data is and looked at some inspiring ways in which data has been visualised and looked at other examples of community energy projects that use data. KWMC gave an overview of the TwinERGY project with a particular focus on the technology that would be installed in the Bristol pilot participant homes. The participants asked lots of questions and were keen to understand how the technologies worked and when they would be installed. Next, we explored data in more detail, looking at different types such as personal data, open data and data sharing. Then we discussed how different types of data will be collected in TwinERGY and discussed the data use license template. We explored how the template could help them keep track of what they had consented to regarding data, how they could raise questions and also how they could remove consent for their data to be used if they changed their mind. They feedback that they understood the template and its purpose.

In the 2nd half of the workshop participants considered and discussed the benefits and risks of sharing data. This was done by exploring 3 scenarios which relate to activities in the Bristol pilot, which provided the participants the opportunity to consider in detail the implications of sharing different types of data and express their opinions about this. The scenario was read out by KWMC, then the participants considered it individually (posting their thoughts on Jamboard) before the different opinions were discussed as a group.

The first scenario involved a fictional character 'Margaret' being asked to complete a survey about her home (i.e. the building survey in Table 2, in Section 3.2), this is shown in Figure 12. The participants first posted their thoughts on Jamboard (see Figure 13) and then as a group we discussed the findings. The key findings were; participants could see the benefits of sharing personal data to create a digital twin of their home, in terms of reducing energy use and the wider environmental benefits. But some had concerns around personal data being leaked and used for fraudulent purposes and also if

companies used this data to make money. We discussed the fact that in collecting data for the digital twin the Bristol partners were working with IES to minimise any personal data collection and that measures would be in place to ensure the security of any data collected. Also that the data would not be used for any other purposes.

Figure 12: Workshop - Data Scenario 1

Figure 13: Data Scenario 1 - risks & benefits

The second scenario (see Figure 14) involved a fictional character Arthur using the Equiwatt app which links to the smart plugs and power capsule energy monitoring device, where a participant needs to provide personal data when signing up to the Equiwatt app (e.g. the detail of this sharing are included in the Bristol pilot contract). The key findings captured on Figure 15 were:

- Participants could see the benefits of sharing personal data to be able to use the devices to reduce their energy use.
- Some had concerns around personal data being leaked and used for fraudulent purposes, although others through the benefits outweighed the risks.
- One mentioned they didn't want other participants to have access to their personal data, which KWMC explained will not happen.
- Another mentioned it would be good to have a code of conduct for project partners and here we discussed the fact this is why TwinERGY has ethical and data protection policies.
- We also discussed how the data use template is an important tool in this context to make data collection and management transparent in the project.

Figure 14: Workshop - Data Scenario 2

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Figure 15: Data Scenario 2 - risks & benefits

The third scenario (see Figure 16) involved a fictional character Aisha sharing energy data about her home which will be anonymised by a researcher in TwinERGY and visualised. The key findings (captured on Figure 17) were;

- Many of the participants identified in this case we were discussing open data, which would not involve sharing personal data so the risks were minimal and they were not concerned about this.
- Some participants still had concerns about their data being shared widely and we discussed that this would not be personal data.

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Figure 16: Workshop - Data Scenario 3

Figure 17: Data Scenario 3 - risks & benefits

At the end workshop, 7 out of the 8 participants completed an evaluation survey[16]. As shown in Figure 18, all of the participants agreed or strongly agreed that the workshop had met their expectations. The findings showed that they all had a good understanding

---

[16] https://airtable.com/shr4EVfBWPcABVx0p

TWIN ERGY

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

41

of the technology that would be installed in their homes as part of TwinERGY (see Figure 19) and they all understood what personal data was (Figure 20) – all agreed or strongly agreed to these questions. The participants also said they had a good understanding how their data would be collected in the project (Figure 21) and they understood how to make choices around whether to share data (Figure 22).
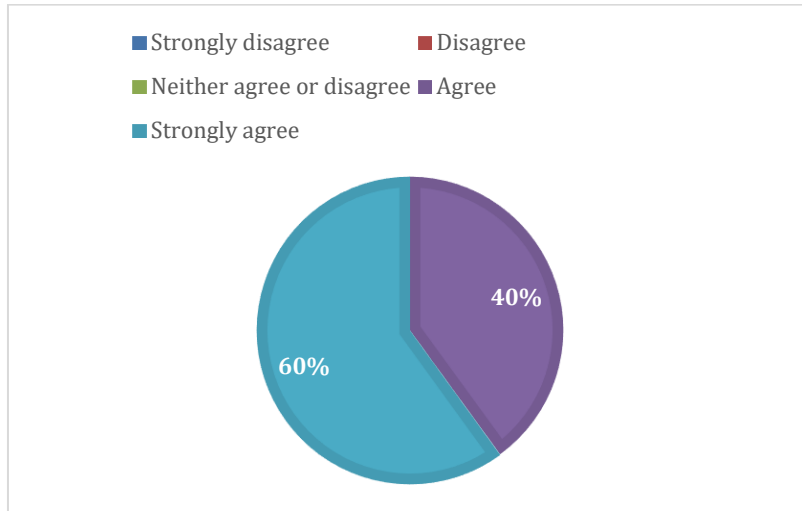
Figure 18: Evaluation: Did the workshop meet your expectations?

Figure 19: Evaluation: I have a good understanding of the technology that will be installed in my home as part of TwinERGY?

Figure 20 :Evaluation: I have a good understanding of how my data will be collected in the TwinERGY project?

Figure 21: Evaluation: I understand what personal data is?

Figure 22: Evaluation: I understand how to make choices around whether to share my data in the project?

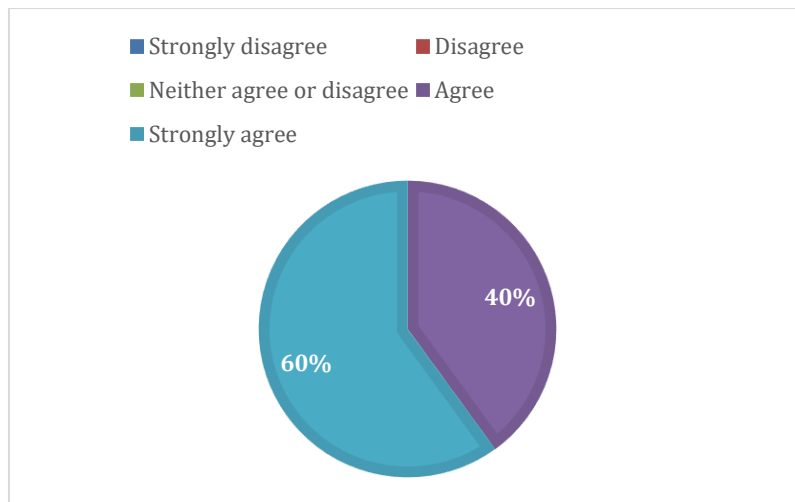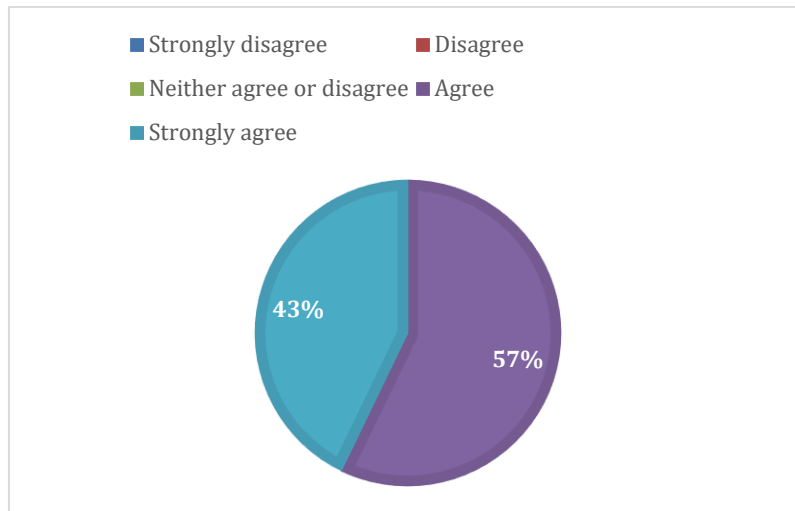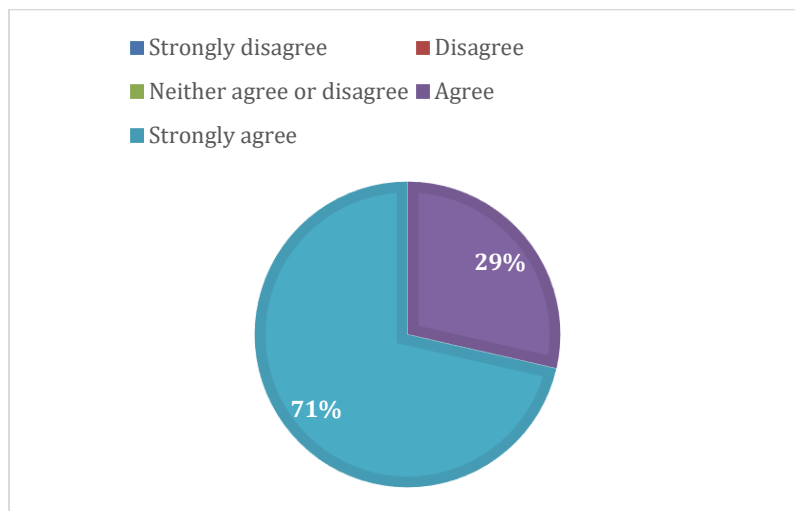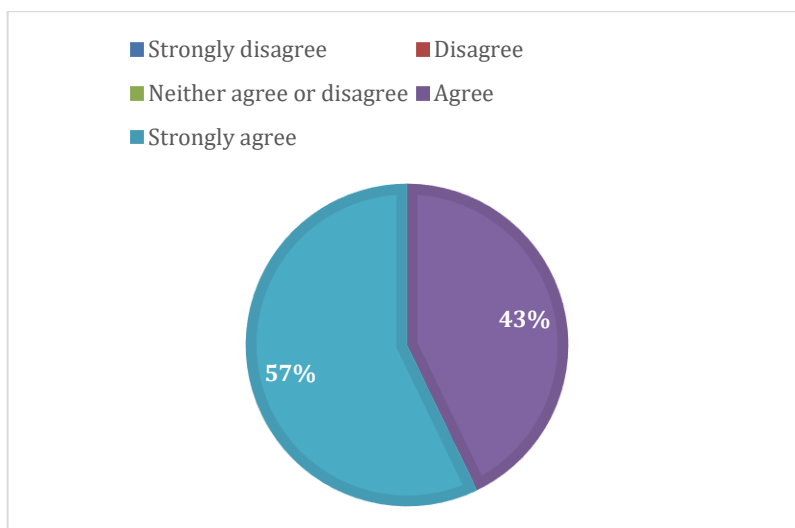These findings showed that the workshop had met the objectives set and after the workshop KWMC updated the data use license template. The key lessons learnt for TwinERGY and similar projects are:

- It is important to engage with citizens from the start of a project and explain clearly what technology will be used, what data it will collect, how the data will be used and stored securely and who it will be shared with and why. It is important this is done as a dialogue, with the opportunity for citizens to ask questions, so a data workshop is an ideal mechanism for this.
- Citizens have particular concerns around who has access to their personal data, the security/privacy of their data and whether it will be used for purposes they have not consented to.
- If citizens understand the benefits of sharing their data, and there are processes in place to securely manage their data and to opt into data sharing (rather than opt out), they are more likely to consent to data sharing and not withdraw from the project.
- The data use license template provides a tool which makes the data management process transparent, enabling a participant to check how and where they shared data and to request changes.
- The process of developing a data use license template also helps project partners to better understand data management processes in a pilot and the rights and responsibilities around data including compliance with data protection regulations.

4.3 Sharing data use license approach with TwinERGY partners

The next step was to share the learning from the data workshop with the Bristol pilot participants and the data use license template with all the TwinERGY project partners, including the pilots in Germany, Greece and Italy. This was done through an online workshop held on Zoom on the 13th January 2022 from 10-11am Central European Time. The agenda for this workshop is in Annex 2 (Table 4) and the event was recorded and shared with the project partners.

The workshop objectives were for the TwinERGY project partners to:
- understand the purpose of the Data Use License template
- have discussed data ethics and data rights in the context of TwinERGY
- have explored the findings of the data workshop with Bristol pilot participants
- have discussed how the approach is relevant to their TwinERGY pilot

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

- have a workshop format/data use license template that can be adapted for use in their TwinERGY pilot

In the workshop KWMC presented how we had developed the data use license template, discussing the information contained within the D12.5 report on data ethics and data rights. We also talked about how we had developed and run the data workshop with the Bristol pilot participants and the outcomes of the activities. Then we explored with the TwinERGY partners how the learning was applicable to their pilots or more widely. For example, how they were addressing data issues with their pilot participants and how they could use the tools developed for D12.5 (data workshop resources and data use license template) in their pilots. The outputs from this discussion were captured on Jamboard, see Figure 23 below.

Figure 23: Jamboard from data use license sharing workshop

In the pilot in Greece, they said that many of the participants have a basic understanding of the technology being installed in their pilot. That the project partners leading the pilot had already engaged with their participants around data and talked to them about keeping their data secure and had a form that dealt with these issues. They thought the scenario cards used in the data workshop were a helpful tool and aligned with similar cards which had been used in the community engagement work they participated in related to Deliverable 2.1, the community engagement guidelines. They said their participants had raised similar concerns those raised in scenario 1 in the Bristol pilot (see Figure 12) which is around data security and privacy issues. They said they would further

engage with their participants in Greece as the pilot progressed and would look to run a similar workshop.

For the pilot in Germany, they posted on the Jamboard to say they had different levels of participation in their pilot and this was discussed in more detail in the workshop. They mentioned that participants were making choices about how they wanted to participate and some had chosen not to share or use internet related services. This may be due to privacy concerns. The conversations were being led by the pilot partner who lived in the local community and had good local connections with the participants. They mentioned they had managed to collect the survey information for the digital twin without collecting personal data.

For the pilot in Italy, they said many of the participants were familiar with the energy technologies being used as they owned photovoltaic panels already installed on the homes/buildings. They also mentioned around 50% were elderly, so the learning from the Bristol pilot which also included some older residents could be helpful. They said they had worked with participants to discuss the project technologies and how their data will remain confidential and that participants had signed a form related to this. They had used the scenario cards in activities related to Deliverable 2.1 (Best practice guidelines for engaging citizens in the pilots) to help guide this process and that they would keep track of concerns that their participants raised about data issues.

In addition, there were some wider comments from other project partners (in yellow on Figure 23). For example, the importance of understanding what motivates a participant to get involved in a pilot. That the data use template is useful for improving transparency around data collection and sharing. A comment about whether the other pilots had entry level people regarding the technology, although many said they had people familiar with the technology. And that the next step was having a good understanding of all the technology applications being developed e.g., the TwinERGY modules.

The findings show that the workshop objectives were met in terms of sharing the best practice on data ethics and data rights, the data use license template and workshop resources and learning. The discussions highlighted that:
- The TwinERGY pilots have participants with different levels of knowledge around the energy technologies being installed.
- All the pilots have had some discussions with their participants about data issues and they all have consent forms which deal with data protection.

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

- Sharing learning from engaging with particular groups, such as older people, was helpful.
- The other pilots considered how to use the tools created (workshop resources and data use license template) within their pilots and shared ideas.
- They liked the idea of using the scenario cards from the data workshop.
- Greece mentioned they already had plans for a data workshop and this would be a good opportunity to use the tools.
- There was recognition that as the TwinERGY modules are deployed this will involve further engagement with participants, so this presents a good opportunity for the pilots to use the tools and adapt the data use template for their pilot.
- To ensure the pilots in Greece, Italy and Germany take advantage of the tools, and embed the data use license approach, it will be important to continue to share learning and progress on this at the monthly consortium meetings.

4.4 Sharing data use license approach with wider stakeholders

The TwinERGY learning on working with citizens around data and the data use license template that has been captured in D12.5, will be shared with wider stakeholders through Work Packages 3 and 11. In particular Task 3.1 – Utilization of other projects' results funded under complementary topics and similar projects through the BRIDGE initative - and Task 11.5 – Networking with related research projects and initiatives. These tasks are led by European Dynamics and SmartEn and together they are organising a workshop on Consumer Engagement Approaches and Prosumers Business Models Workshop on the 1st February 2022, which aligns with the BRIDGE[17] initiative and will involve the iFLEX[18] and SENDER[19] projects. KWMC and Ideas for Change are preparing a presentation about the key activities and learning from D12.5 to present at that workshop.

---

[17] https://www.h2020-bridge.eu/
[18] https://www.iflex-project.eu
[19] https://en.smartinnovationnorway.com/research-and-innovation/r-and-i-projects/sender-2020-2024/

5. Conclusion

TwinERGY is a large and complex project involving 18 partners across Europe. A goal of the project is to empower citizen's active participation in the energy market and all of the pilots involve participants trialling the technologies. TwinERGY project partners have a responsibility to ensure that the technology is developed and deployed in a responsible manner. A digital twin by its nature is a data driven technology and understanding the rights and responsibilities in relation to data protection and ethics is a complicated task.

Work Package 12 of TwinERGY – Ethics, Legislation and Standardization – ensures regulatory, legal and ethics compliance of the project. Within this Work Package, a data use license was developed in Task 12.4. This report provides an overview of the development of the data use license in the UK (Bristol) Pilot of the TwinERGY project, including data workshop run with the pilot participants and a further workshop to share learning with all the TwinERGY partners and pilots. The data use template has been designed to be a user-friendly document that helps to guide and support the process of informed consent in relation to the sharing of personal data. It is a web-based document so it contains links to consent forms used during the pilot so a participant can track the forms they have completed.

The development of the data use license template has helped the TwinERGY project partners to better understand the rights and responsibilities associated with data. The first step to handling data responsibly is understanding what data will be collected and how to categorise the data, which can often be a complicated process. The development of the data use licence template involved mapping the participant journey in the Bristol Pilot and identifying when and how data will be collected and how that will be managed. Then holding a data workshop with the Bristol participants to explore data collection/management in the project, discuss the data use license template and explore their thoughts about the risks and benefits of data sharing. In general participants said they were happy to share personal data and energy data, as long as measures were in place to minimise the risks. They could see that the data use template helped them to keep track of their data sharing and made the process of data collection more transparent.

The D12.5 report also explains how the learning from the workshop and the tools have been shared and discussed with the other pilots in Germany, Greece and Italy through a TwinERGY data use license sharing workshop. This provided the opportunity for wider

discussion of approaches to data management and citizen engagement in the pilots. The pilots have participants with different levels of knowledge around the energy technologies being installed and all are having discussions with their participants about data protection and data sharing issues. The data workshop resources and data use license template will provide useful tools to support that continuing work.

The learning captured in D12.5 is also being shared with wider stakeholders and the BRIDGE initiative through Work Packages 3 and 11 (as part of Tasks 3.1 and Task 11.5) with a workshop taking place on the 1st February 2022.

TWIN ERGY

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

References

ALERC (Association of Local Environmental Record Centres). (2016). https://www.alerc.org.uk/uploads/7/6/3/3/7633190/an_introduction_to_open_shared_and_closed_data.pdf

Brand, J. and Sander, I. (2020). Critical data literacy tools for advancing data justice: A guidebook. https://datajusticelab.org/wp-content/uploads/2020/06/djl-data-literacy-guidebook.pdf Data Justice Lab.

CESSDA. (2021). https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/6.-Archive-Publish/Publishing-with-CESSDA-archives/Licensing-your-data

Collins Dictionary. (2021). https://www.collinsdictionary.com/dictionary/english/lay-person.

DECODE. (2020). Common Knowledge: Citizen-led data governance for better cities. https://decodeproject.eu/publications/common-knowledge-citizen-led-data-governance-better-cities.html

Dencik, L. & Cable, J. (2017). "The Advent of Surveillance Realism: Public Opinion and Activist Responses to the Snowden Leaks", International Journal of Communication, 11: 763-781. http://eprints.glos.ac.uk/5428/1/The%2520Advent%2520of%2520Surveil-lance%2520Realism.pdf

Dgen Network. (2021). https://www.dgen.net/0/2019/05/06/the-data-spectrum-defining-shared-closed/

European Commission. (2018). Ethics and data protection. https://ec.europa.eu/info/sites/default/files/5._h2020_ethics_and_data_protection_0.pdf

European Commission. (2021). EU Charter of Fundamental Rights. https://ec.europa.eu/info/aid-development-cooperation-fundamental-rights/your-rights-eu/eu-charter-fundamental-rights_en

European Commission. (2021a). Regulation (EU) 2016/679. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02016R0679-20160504&qid=1532348683434

Harris Interactive. (2021). Information Rights Strategic Plan:
Trust and Confidence. Prepared for the Information Commissioner's Office. https://ico.org.uk/media/about-the-ico/documents/2620165/ico-trust-and-confidence-report-290621.pdf

Hummel, P., Braun, M., Tretter, M., Dabrock, P. (2021). Data sovereignty: A review https://doi.org/10.1177/2053951720982012

ICO. (2018). https://ico.org.uk/about-the-ico/news-and-events/news-and-blogs/2018/09/organisations-must-continue-to-improve-transparency-and-accountability/

ICO. (2021). https://ico.org.uk/about-the-ico/research-and-reports/information-rights-research/

Lewis, T., Gangadharan, S. P., Saba, M., Petty, T. (2018). Digital defense playbook: Community power tools for reclaiming data. Detroit: Our Data Bodies. https://www.odbproject.org/wp-content/uploads/2019/03/ODB_DDP_HighRes_Single.pdf

ODI. (2016). How do we own data? https://theodi.org/article/how-do-we-own-data

ODI. (2017). Helping organisations navigate ethical concerns in their data practices. https://www.scribd.com/document/358778144/ODI-Ethical-Data-Handling-2017-09-13

ODI. (2019). For stronger data rights, we must start with a shared language of data. https://theodi.org/article/for-stronger-data-rights-we-must-start-with-a-shared-language-of-data/

ODI. (2020). Data 2020: Data rights and ownership. https://theodi.org/article/data-2020-data-rights-and-ownership/#1582288758996-7962dae9-8fc4ea0b-47fc

ODI. (2021a). The Data Ethics Canvas. https://theodi.org/article/the-data-ethics-canvas-2021/#1624955096642-4c6671b7-cee2

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

ODI. (2021b). The Data Spectrum. https://theodi.org/about-the-odi/the-data-spectrum/#:~:text=To%20unpack%20data's%20challenges%20and,It%20can%20be%20simple.

ODI. (2021c). Weather, energy and environment. https://theodi.org/topic/weather/

Open Knowledge Foundation. (2021). The Open Data Handbook. https://opendatahandbook.org/guide/en/what-is-open-data/

Samson, R., Gibbon, K., and Scott, A. (2019). About Data About Us. ODI, Luminate, RSA. https://www.thersa.org/globalassets/pdfs/reports/data-about-us-final-report.pdf

Taylor, L., and Dencik, L. (2020). Constructing commercial data ethics. Technology and Regulation, 2020, 1-10. https://doi.org/10.26116/techreg.2020.001

UK Parliament. (2018). Data Protection Act 2018. https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted

van der Wees, A., Hudig, A I., Stefanatou, D., Pathania, P. and Righi, V. (2021) TwinERGY Deliverable 12.1: Legal and Ethical Compliance Guide.

Warne, H., Dencik, L., and Hintz, A. (2021). Advancing civic participation in algorithmic decision-making: a guidebook for the public sector. Data Justice Lab. https://datajusticelab.org/wp-content/uploads/2021/06/PublicSectorToolkit_english.pdf

Annex 1

TwinERGY Data Use License

The project

TwinERGY is a European funded research project and the Bristol pilot will install energy technology in 12 homes who already have solar panels – to help you manage your energy use in a smarter way.

Below we refer to the Bristol pilot as 'the project'.

The purpose of this document

This document is intended to provide information to participants in the project, people whose personal data is being collected, used and shared by the organisations involved.

The organisations are Knowle West Media Centre, Bristol City Council and University of Bristol.

The information should help you make informed choices about whether to share your data, keep track of consent forms you are asked to complete during the project and answer questions you may have.

If you would like further information please contact: twinergy@kwmc.org.uk

Roles of organisations in the project

- Knowle West Media Centre (KWMC) is responsible for managing community engagement in the project.
- Bristol City Council is responsible for the project management of the project.
- University of Bristol is responsible for the technical aspects of the project.

Project aim

The project aims to

  I. Test new technology to increase the efficiency of energy use and generation in buildings
 II. Place citizens at the heart of the energy market

By collecting data about participants, the organisations above will be able to contact them about taking part in the project activities and involve them in trialling the energy technology within their homes and understand more about their energy use behaviour and experiences of using the technology.

By sharing some data about participants, the organisations will be able to coordinate the project activities and conduct the analyse the data collected in the project.

By publishing some anonymised data (as open data) the organisations will be able to share the results and learning from this project.

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Data terms

Below we explain what types of data are collected in the project, the access given and how data is managed in the project.

Data types and access

Personal data is data from which a person can be identified as defined in UK GDPR. If data can be combined with other information to identify a person, that data will still be 'personal data'. Personal data includes sensitive data and behavioural data described below.

Sensitive data is personal data that describes integral features of who we are e.g. reveals racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data (where used for identification purposes), data concerning health, a person's sex life or sexual orientation.

Behavioural data is personal data collected about your actions and activities, which can include data collected online by technologies and websites that track, monitor or analyse your behaviour.

Societal data is data that incorporates elements of personal data (e.g. location, health, energy use data) but does not need to include personal identifiers that link back to us as individuals, in order for it to be useful. If societal data is anonymised it can be made open data.

Closed data is data that is only accessible to one person or organisation.

Shared data can take multiple forms, three are:

> **Named access** – data that is shared only with named people or organisations
> **Group-based access** – data that available to specific groups who meet certain criteria
> **Public access** – data that is available to anyone under terms and conditions that are not 'open'

Open data is data that anyone can access, use and share but it usually requires you to attribute the source.

Data processes

Data anonymisation is the process of turning data into a form which does not identify individuals and where identification is not likely to take place.

Data aggregation is the combination of individual data records into groups to avoid individuals' data being identified.

Data categories

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Registration information is the data participants provide when signing up for project activities, which is necessary to take part in the project (e.g. name, email, address, etc.).

Self-reported information is the data participants are asked to provide which is useful to the goals of the project but is not necessary for taking part in the project e.g. it can include sensitive data (such as gender and race) which will be collected anonymously.

Project generated information is the data that is generated by or with participants during the project (e.g. home energy consumption data and behavioural data).

Data collection and use

Registration Information: we have asked you to complete the following forms which ask for personal data so that we can contact you participating in project activities and arrange deployment of the technology:

- Expression of Interest Form (KWMC)
- Research Ethics Form – participant information and consent form (University of Bristol)
- TwinERGY Acceptance letter, including terms and conditions (Bristol City Council)
- Data Workshop Registration and Pre-Survey Form (KWMC)

Sensitive information: we have asked you to complete the following forms which asks for sensitive data so we can better understand who takes part in the activities. It is optional to complete this form.

- Equalities form (KWMC)

Project generated information: we will be installing equipment in your home and asking you to complete surveys, which will collect the following data:

- The Acceptance Letter explains the equipment being installed in your home:
  - 2 x Equiwatt Smart Plugs + energy monitoring device (power capsule) + associated app [all homes] – the app collects personal data and energy data
  - Home energy storage battery + Passiv Systems device and app [some homes] – the app collects personal data and energy data
  - Building survey [all homes] – collects data about your home and energy use and includes some personal data
- Data Workshop Evaluation Form – asks for your feedback on workshop and asks for some personal data

Data storage and deletion

Data collected in the project will be stored securely by the organisation's involved and deleted a maximum of 5 years from collection. Access to personal data will be limited.

Data sharing

When KWMC, Bristol City Council or University of Bristol collect your personal data and this needs to be shared between these organisations or with others this will be specified in the form where you will be asked for your consent for us to collect that data.

The organisation collecting the data will put in place a data sharing agreement to manage this process in a secure manner and the data will be transferred in a secure manner.

Publishing open data

This section will be updated to set out what data will be published openly, where it will be published, under what license and why – when this information is available.

Reporting concerns

When you complete project forms that collect your personal data they will include contact details to ask for further information or to report your concerns.

You can also report any concerns to the project Data Protection Officer

Theo.Tryfonas@bristol.ac.uk Tel: 0117 428 2489

Your data rights

Under the UK Data Protection Act (2018) and UK General Data Protection Regulation (GDPR), you have explicit rights around data about you (personal data). To exercise these rights, you can follow the processes laid out here.

The right to be informed

You have the right to be informed about how personal data about you is being collected, used and shared. This document aims to provide much of the information you might want however if you have any specific questions you can contact twinergy@kwmc.org.uk

The right of access

You have the right to access the personal data about you held by the organisations involved in the project. Please contact twinergy@kwmc.org.uk to request this information

The right to rectification

You have the right to rectify or correct personal data about you which the organisations hold if it is inaccurate or incomplete. Please contact twinergy@kwmc.org.uk to request this.

The right to erasure

You have the right to erase or remove data we hold about you. Please contact twinergy@kwmc.org.uk to request this.

The right to restrict processing

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

You have the right to restrict or 'block' processing of personal data about you that the organisations hold. Please contact twinergy@kwmc.org.uk to request this.

The right to data portability

You have the right to port or transfer the personal data about you that the organisations hold. Please contact twinergy@kwmc.org.uk to request this

The right to object

You have the right to object to the use of personal data about you that the organisation holds for specific purposes, including direct marketing. Please contact twinergy@kwmc.org.uk to request this

Rights in relation to automated decision making and profiling.

You have a set of rights around automated decision making involving the use of personal data about you that the organisations hold. Please contact twinergy@kwmc.org.uk to request this information

Responsibilities

This section describes the responsibilities of the participants, the organisation and third parties play in ensuring the privacy and security of participant's personal data.

Your responsibilities

When completing forms that ask for your personal data, please only use trusted and secure devices.

Take care to keep your passwords safe and secure. Only use strong passwords that include a mix of letters, numbers and symbols.

Keep your antivirus software up to date and install the latest security updates for your device's operating system.

You can find more advice on protecting your data and devices here https://www.ncsc.gov.uk/section/information-for/individuals-families

Our responsibilities

In handling your data, KWMC, Bristol City Council and University of Bristol will ensure that we comply with any applicable data protection and privacy legislation including the UK Data Protection Act (2018) and UK GDPR.

Your personal data will be stored securely on our servers and we have internet security procedures in place.

If there is a data breach or privacy concerns we will contact you.

Third party responsibilities

The responsibilities of third-parties regarding data collection and management are outlined in the TwinERGY Acceptance Letter in the terms and conditions section.

Updates

We will update the data use license, including adding links to the applicable consent forms, as you are asked to make choices around the collection and sharing of your data.

If the event of new government policy on data protection and privacy, a data breach or concerns being raised by a participant or a regulator, we will also review and update the data use license as necessary.

We will contact participants in the event of any of the above.

Figure 24: Data Use License – Bristol Pilot

Annex 2

Research Ethics - Information Sheet

TwinERGY: *Intelligent interconnection of prosumers in positive energy communities with twins of things for digital energy markets.*

Disclaimer

The views and opinions expressed in this document are solely those of the TwinERGY project, not those of the European Commission. Before making a decision on whether you want to participate (or not), please read this document carefully. Feel free to ask any questions to ensure that you fully understand the pilot study before you complete the consent form.

Background Information

You are invited to take part in the Bristol (UK) pilot of the TwinERGY project which is a research project funded by European Union's Horizon 2020 research and innovation programme (Grant Agreement No 957736).

The Bristol pilot of TwinERGY involves University of Bristol, Bristol City Council and Knowle West Media Centre (referred to as 'Bristol Project Partners' below). There are also pilots in Greece, Germany and Italy, with a total of 18 partners involved in the TwinERGY project https://www.twinergy.eu

Project aim and activities

TwinERGY is a three-year EU funded research project. The project aims to (i) Test new technology to increase the efficiency of energy use and generation in buildings (ii) Place citizens at the heart of the energy market.

Being a participant in the pilot will involve the installation of a technology package that will help you to make better use of the solar PV panels on your home. It will also involve your participation in related research activities such as sharing home energy data, taking part in workshops, surveys and the project evaluation.

Duration of the activities

The Bristol pilot will start in October 2021 and end in October 2023 – although dates could be subject to small changes.

Benefits and Risks

The benefits of taking part in the pilot are receiving a free energy technology package that will give you insights into how to better manage your energy, which could reduce your carbon emissions and save money. You will also be part of a research project where you will meet like-minded people and learn about digital energy twins.

We do not anticipate any negatives of your participation in this project. Bristol Project Partners have organisational measures in place to manage the project risks including data protection procedures. The terms and conditions outline the responsibilities for Bristol Projects Partners and for you.

Refusal or withdrawal of participation

Participation in the project is voluntary and you are free to withdraw from the study at any time without having to provide a reason for your decision. This includes withdrawing the use of your personal data as explained later. The project terms and conditions explain what you need to do if you choose to leave the project.

Contact person

If you would like further information or have questions or concerns about taking part in the study (including after you have signed this form) please contact:

Dr Patrick Tully, Research Project Manager, University of Bristol

patrick.tully@bristol.ac.uk

Tel: 0117 331 5617

Compliance with legal and ethical regulations

Bristol Project Partners will assure full compliance with the TwinERGY ethical standards and relevant legislation including the UK Data Protection Act (2018), UK General Data Protection Regulation (GDPR) and EU GDPR.

Data Collection and Use

The personal information (data) that you supply to us on this form will enable the University of Bristol and Bristol Project Partners to evidence your consent to participate in the TwinERGY project activities. The study is designed to promote scientific knowledge and the data you provide will be used for no other purpose than research.

During the study the Bristol project partners will contact you about participation in the project activities e.g. equipment being installed in your home, taking part in workshops, sharing data about your home including energy use and completing surveys. When we ask you to participate in a project activity, we will explain what will be involved including what data will be collected and how this will be used, shared, stored and erased. We will explain categories of data and seek your informed consent to collect and process that data. We will also help you to keep track of the choices you make around data and enable you to review them.

We will minimise the amount of personal data we collect about you. We will assign you a participant code so that anonymised research data (e.g. energy and building related data) will be stored separately from your personal data (e.g. name, address, telephone number etc). Anonymous research data aggregated from the pilot will be published in research publications related to the project.

Data Sharing
University of Bristol will share the information you provide on the ethics consent form with the TwinERGY project coordinator (University of Patras) and The European Commission. We will not share your personal information with anyone else, except where you have given us explicit written permission or if we are required to do so by law. Anonymised research data will be shared with the

Data Storage and Erasure
The completed ethics consent form will be securely stored on University of Bristol servers and retained for five years. At the end of this period, your personal information will be securely destroyed.

Your Rights and Reporting Concerns
If you would like further details or have any concerns about data protection please contact Professor Theo Tryfonas at the University of Bristol, who is Data Protection Officer for the Bristol Pilot.

theo.tryfonas@bristol.ac.uk
Tel: 0117 428 2489

Under UK GDPR, you have the right to:
- be informed about how personal data about you is being collected, used and shared.
- to access personal data we hold about you

- to rectify or correct personal data which we hold if it is inaccurate or incomplete
- the right to require us to erase data we hold about you
- to restrict or 'block' processing of personal data we hold about you
- the right to port or transfer the personal data we hold about you
- the right to object to us using your personal data for specific purposes
- rights in relation to automated decision making and profiling

https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/

TwinERGY Bristol Pilot Consent Form

By signing this document, you will be agreeing to take part in the study. One copy will be kept by the University of Bristol with the study records and you will be given a copy for your records.

Please answer the following questions to the best of your knowledge:

	Yes	No
I have been given the study information sheet which outlines the study aims and procedures including any risks		
I have been given the opportunity to read the information sheet, ask questions and discuss the study		
I have received satisfactory answers to any questions I asked		
I have received enough information about the study to make a decision about participating in the study		
I am aware I can choose not to participate in the study or withdraw at any time without having to give a reason		
I have been informed about how my personal data will be collected and how it will be stored securely		
I am aware of my rights around data protection and that I can ask for my personal data to be withdrawn from the study at any time		
I have been informed about the equipment that will be installed in my home as part of the study, what data it will collect and how this will be managed securely		
I am aware that research data collected (which is anonymised data) will be used in research publications related to the project		

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

62

I hereby fully and freely consent to my participation in this study:

Participant's signature:………………………………………………………………… Date:…………………..

Name in BLOCK Letters:……………………………………………………………………………………………..

Statement of investigator's responsibility:

I have explained the nature and purpose of this research study, the procedures and any risks involved. I have answered any questions and believe that the participant understands my explanation and has freely given informed consent.

Researcher's signature:………………………………………………………………… Date:…………………..

Name in BLOCK Letters:……………………………………………………………………………………………..

This consent form is made pursuant to the relevant national, European and international data protection laws and regulations and personal data treatment obligations. Specifically, this consent document complies with the General Data Protection Regulation (2016/679).

Figure 25: Research Ethics Forms - Bristol Pilot

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Expression of Interest Form

Project information

TwinERGY is a European research project which will involve 12 households in Bristol. The Bristol pilot involves Knowle West Media Centre, Bristol City Council and University of Bristol.

We are looking for 12 homes with solar PV panels and the project will involve:
  – installation of a technology package that will help you to make better use of the energy they generate
  – participation in related activities such as sharing energy data and workshops

Please complete this form if you are interested.

The information you provide will enable us to do an initial assessment of your home's suitability. Selection of homes will be made on a first come, first served basis if suitable. We will contact you to let you know the outcome and next steps.

The project is funded by the European Union Horizon 2020 funding (project no. 957736)

Expression of Interest Form – full form available at https://airtable.com/shr7eyOJi8KQ56s1j

Figure 26: Expression of Interest Form - Bristol Pilot

Twinergy has received funding from the European
Union's Horizon 2020 research and innovation
programme under grant agreement No. 957736

Table 3: Data Workshop Agenda for Bristol Pilot Participants

Thursday 9th December 2021

Time	Activity
Home Visit	Pre-workshop iPad distribution iPads – a quick tour with instructions
Open room 10 mins before	Extra time for people to join if unfamiliar with Zoom Ask them to complete pre-survey if not completed before
19:00-19:05	Welcome – Introductions / ice-breaker
19:05-19:20	Data inspiration - what is data + some inspiring examples including video
19:20-19:30	TwinERGY presentation, overview of Bristol Pilot and wider project
19:30-19:40	Exploring data more - introduce different types of data with focus on what is personal data and sharing data
19:40-19:50	Data being collected in TwinERGY - what data is being collected in TwinERGY and explore the data use license template
19:45-19:55	Break (10 mins)
19:55–20:20	Activity: Data Risk / Benefits Scenarios x 3
20:20-20:25	Next steps
20:25-20:30	Closing - Evaluation survey with follow up questions

Table 4: Data Use License Sharing Workshop Agenda

Thursday 13th January

Time	Activity
09:00-09:05	Welcome – workshop objectives and structure
09:05-09:10	Data Use License Template + Data Ethics and Rights
09:10-09:15	Questions & Answers
09:15-09:25	Data Workshop – activities + findings
09:25-09:35	Questions & Answers
09:35-09:55	Pilot Jamboard Activity + discussion
09:55- 10:00	Next steps + Close