GRETA
GREEN ENERGY TRANSITION ACTIONS

D3.7
Multinational citizen consultation results database

Prepared by: LUT
Contributions from: CWD, GESIS, TNO, UNIBO, FhG, TEC

Deliverable nature	Other
Dissemination level (Confidentiality)	Public (PU)
Delivery date	2022-10-07
Version	1.0
Total number of pages	53
Keywords	multinational survey, energy citizenship, survey data
Cite as	Annala, S., Mendes, G., Melkas, H., Wolff, A. (2022). Multinational citizen consultation results database. D3.7 of the Horizon 2020 project GRETA, EC grant agreement no 101022317, Lappeenranta/Lahti, Finland
Project contact	Salla Annala, email: lut.greta@lut.fi

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022317.

Disclaimer and acknowledgement

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101022317.

Executive summary

The GRETA project aims to improve the understanding of the conditions and barriers for the emergence of energy citizenship, i.e., a form of active participation within energy systems that ultimately supports local and global decarbonisation goals.

The GRETA consortium believes that a broad, EU-wide, citizen and stakeholders' consultation is necessary for developing a better understanding of the rationales behind energy citizenship behaviours and its emergence phenomena. As such, the GRETA consortium has designed a multinational survey that has been launched on September 29, 2022, being expected to be completed during October 2022. The GRETA consortium has worked closely together to design this survey, both content-wise and structurally. An external service provider was hired for running practical survey aspects, such as implementation of interface, respondent recruitment, and translation into local languages. The survey is currently being carried out in 16 EU Member States.

The target sample size defined by the GRETA consortium for its multinational survey is 10.000 individual responses, of which 90% is to be covered by citizens/households, and the rest by businesses (5 %) and individuals involved in policy making (5 %). Dedicated question sets were designed for each of the three respondent groups. Although all three questionnaire versions address the same themes, there are variations in some questions. Furthermore, the questionnaire for citizens (e.g., normal residential energy users) is more extensive than the other two questionnaires.

This deliverable describes the methodologies applied in the design and implementation of the survey, presenting also its main structure and contents. Key themes in the survey include engagement with the energy transition, energy use and underlying factors (e.g. building characteristics), energy literacy and energy information, social cohesion (e.g., energy community initiatives), and the 3-stage energy citizenship emergence model elaborated earlier in the project. Energy justice aspects have been transversally integrated across the survey.

The deliverable also offers an assessment of the current state of the survey's fieldwork.

The survey data will be made available for further analyses via the GRETA Open Portfolio for Civic Energy Empowerment (GRETA OPCE) which is GRETA project's Zenodo community.

Project information

Grant agreement No.	101022317
Acronym	GRETA
Full title	GReen Energy Transition Actions
H2020 Topic	H2020-LC-SC3-2020-NZE-RES-CC
Project URL	www.projectgreta.eu

Document information

	Number	Title
Deliverable	D3.7	Multinational citizen consultation results database
Work package	WP3	Data gathering from case studies and multinational citizen consultation
Task	T3.3	Data gathering from case studies and multinational survey

Delivery date	Contractual: M17, Actual: M18
Nature	☐Report ☒Other ☐ORDP
Dissemination level	☒Public ☐Confidential
Authors (partners)	Salla Annala, Gonçalo Mendes, Helinä Melkas, Annika Wolff (LUT)
Reviewers (partners)	Izaskun Jimenez (TEC)
Summary (for dissemination)	This report describes the contents, planning and implementation of the GRETA multinational citizen consultation (GRETA multinational survey). The overarching goal of the survey is to improve the understanding of the conditions and barriers for the emergence of energy citizenship, i.e., a form of active participation within energy systems that ultimately supports local and global decarbonisation goals. The survey fieldwork started on 29th of September 2022, and the resulting data will at a later stage be made available free of charge via the GRETA Zenodo community.
Keywords	multinational survey, energy citizenship, survey data

Version	Date	Description
0.1	2022-09-23	First draft
0.2	2022-10-02	Second draft
1.0	2022-10-07	Final version

Table of contents

List of figures

List of tables

Abbreviations and acronyms

WP#	Work Package(#)
OPCE	Open Portfolio for Civic Energy Empowerment
GDPR	General Data Protection Regulation
ECC	Energy Citizenship Contract
CTP	Community Transition Pathway

1 Introduction

The GRETA project aims to improve the understanding of the conditions and barriers for the emergence of energy citizenship, i.e., a form of active participation within energy systems that ultimately supports local and global decarbonisation goals.

1.1 Understanding energy citizenship

The GRETA glossary elaborated by the consortium and published on the GRETA website[1] defines energy citizen in the following manner:

> *An energy citizen is an individual who participates individually or collectively in the transition of energy systems in a particular geographical area. Energy citizens use, consume, produce and/or store energy in an improved or reduced manner. Energy citizens' activities and behaviours affect the decarbonisation of current energy systems in the long run. Their energy-related knowledge, when shared, allow energy citizens to also have an advocacy role. The effects can be positive (e.g., supporting the clean energy transition, investing in energy-efficient appliances, or participating in a local energy initiative), negative (e.g., public resistance to new forms of renewable energy) or neutral.*

The GRETA consortium believes that a broad, EU-wide, citizen and stakeholders' consultation is necessary for developing a better understanding of the rationales behind energy citizenship behaviours and its emergence phenomena. As a result, a multinational quantitative survey has been designed, initially guided by qualitative data from interviews done within the GRETA case study communities.

1.2 EU-wide empirical consultation

The proposed wide-ranging empirical consultation will inform several key activities in the project, being fully transversal across GRETA, in that:

- Its scientific design has been supported by WP1 and WP2.
- Its general coordination and administration come from within WP3.
- Its resulting data will be analysed and utilized in WP2, WP4, WP5 and WP6.

[1] https://projectgreta.eu/glossary/

- WP2 analyses how can different ways of presenting data and information derived from digitalization and social media impact energy citizenship development
- WP4 designs and tests different energy and behavioural models which will be used in WP5 to identify where energy citizenship is most likely to emerge, in relation to different geographical levels
- WP6 will produce policy recommendations geared towards favouring civic energy engagement in context of the energy transition

The results of the multinational citizen consultation will be made freely available for further analyses via the Open Portfolio for Civic Energy Empowerment (OPCE), a GRETA dissemination tool hosting curated project outputs, such as anonymised data and novel knowledge on energy citizenship emergence.

1.3 Overview of the deliverable

This deliverable explains the approaches taken in the design and implementation of the GRETA multinational survey which is still ongoing during early October 2022. The survey data (Multinational citizen consultation results database) will be made available as part of the GRETA Open Portfolio for Civic Energy Empowerment at a later stage of the project following the principles set in the GRETA data management plan. This deliverable is split into three main parts. The first part – Section 2 – gives an overall account of the methodologies used for design and implementation of the survey, as well as for making the output data openly available to any potentially interested stakeholders. The second part, embodied in Section 3, describes the overall organization of the survey, including its questionnaire blocks and respondent groups. Finally, a third part – Section 4 – assesses the current state of the survey's fieldwork (which in early October is still ongoing). Section 5 concludes the deliverable.

2 Methodology

2.1 Consortium approach

Due to the transversal nature of the multinational survey, the majority of the GRETA consortium partners have been involved in its preparation in one way or another. This includes participations in questionnaire structuring and design, and in building the call for tenders to find a service provider to implement the survey.

Several dedicated meetings were organized by LUT during 2022 to facilitate cooperative design of the questionnaire and planning of the procurement criteria. Starting point topics discussed were higher-level aspects such as goals and role of the survey, causal links to other activities in the project, target respondents, sampling approach, roles of the partners and contributions in the process, resources available, call for tenders and specific minimum criteria to be followed, ranking approach, etc. In addition, survey process updates have been delivered and related discussion ensued at many of the GRETA monthly meetings. Furthermore, a shared MS Teams folder was created within GRETA's WP3 workspace to host documentation and literature related to the multinational survey (e.g., meeting slides, relevant scientific papers, etc.).

The core GRETA team supporting survey design was composed of FhG, TNO and LUT. This team had been tasked with further developing and completing the questionnaires, as well as with compiling any relevant/required partner inputs and assimilating them into the survey. After discussing high-level survey goals, a document in which GRETA participants could propose questions was established in the project's MS Teams workspace, with several partners participating. Subsequently, the participants had the opportunity to comment and suggest further modifications to the proposed questions, to ensure that these are understandable for non-professional and non-academic audiences, and can be applied in several countries.

2.2 Selection of the service provider

A specialized service provider was hired to translate the survey into respondents' local languages, to host the survey, to recruit the respondents, and to collect and clean survey data. LUT prepared the procurement criteria as a result from several iterations with the consortium and the internal LUT procurement services team. In the resulting call for tenders, each proposal had to fulfil the following minimum requirements:

- Graphical interface/survey questionnaire translated to mother tongue of each EU state in which survey is conducted.
- Technology-agnostic approach, i.e., enables responding in multiple interfaces, including mobile, computers.

- Raw (anonymized, but otherwise untreated) data accessible to GRETA consortium members.
- At least 10 EU member states covered.
- Size of respondents' sample (approx. 90% citizens, 5% businesses, 5% individuals involved in policy making) of at least 5000.

The last two bullet points listed describe the minimum criteria. In addition, the number of countries (ideally 27) and respondents (target sample 10.000) had an impact on the grading of the proposals. Other criteria – with no minimum requirements but impacting grading – included for example the ability to conduct vignette and choice (conjoint) survey experiments and ability to split the sample.

The call for tenders was sent to the Cloudia digitalised sourcing service on June 22, 2022, and the service provider was selected in early August. The selection of the service provider was based on an assessment of best ratio of value for money.

2.3 Cooperation with the service provider

LUT and the selected service provider have held regular meetings (at least weekly) to discuss survey practicalities invariably linked to the timely completion of the overall process. After practical elements were established, multiple rounds of comments and iterations related to content and structure-based feasibility of the provided questionnaires took place between the survey provider and the consortium, with LUT acting as a mediator. Ultimately, several adjustments have been implemented in the survey on the basis of the service provider's recommendations.

After iterations on the questions and structure, the service provider programmed the master version to check the functionality of the survey. Furthermore, data generated in the pre-testing phase was investigated to ensure that data is recorded correctly, and filters and instructions for the logical structure are properly implemented. A test link was provided to the consortium for final checks, with further quick improvements being implemented as a result from this process.

2.4 Survey implementation

2.4.1 Selected countries

According to the Grant Agreement, the multinational survey would span potentially 27 countries (i.e. all EU Member States). However, in the procurement criteria it was defined that the proposals must include at least 10 countries, and the selected proposal promised to conduct the survey in 16 countries. The proposal suggested a country selection spanning across Northern, Southern, Eastern and Western Europe. The 10 largest EU countries by population are included in this selection. Furthermore, all

countries where the GRETA case studies[2] are located are included. Partially the country selection was impacted by the availability of specific business panels in some of the countries. After discussions with the service provider, one of the proposed Northern European countries was replaced with Finland to include a country with a cold climate. The countries in which the survey is implemented are presented in Figure 1 and Table 1.

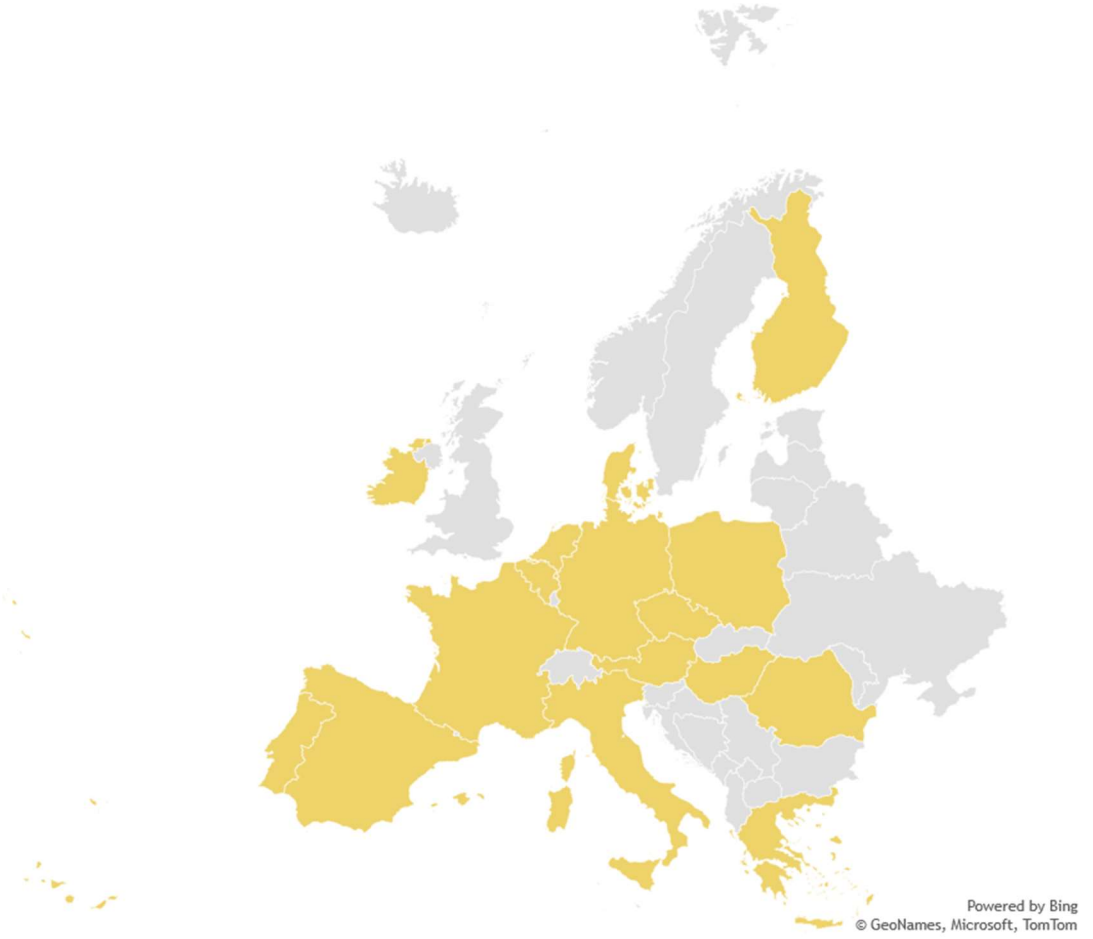

Figure 1: Countries included in the survey.

[2] The GRETA case studies are: Pilasro-Roveri renewable energy district in Italy, Natural Gas Free Neighbourhoods in the Netherlands, Coopérnico – renewable energy-driven cooperative in Portugal, UR BEROA – energy efficiency-driven cooperative in Spain, The Earnest App – a virtual community for sustainable mobility in Darmstadt, Germany, and an EU wide Electric autonomous and connected mobility network.

Table 1: Countries included in the survey according to their geographical location.

Region	Countries
Northern Europe	Finland, Netherlands, Ireland and Denmark
Southern Europe	Greece, Italy, Spain and Portugal
Eastern Europe	Czech Republic, Hungary, Poland and Romania
Western Europe	Austria, France, Belgium and Germany

The survey is conducted in local languages of the respondents. The master version was translated by professional translators hired by the service provider. In total, the survey is conducted in 14 languages.

2.4.2 Respondent groups and quotas

The GRETA consortium set a goal of 10.000 individual responses, of which 90% would be covered by citizens and the rest by businesses (5 %) and individuals involved in policy making (5 %). The inclusion of the business and policy actors is important especially for the analyses based on the 3-stage energy citizenship model elaborated in D1.1 but provides insights also for other analyses. Dedicated question sets were designed by the GRETA team for each of the three groups.

The selected service provider has set a goal of collecting 10.400 individual responses. Such sample size corresponds to a margin of error of approximately 1% with confidence level of 95% (at EU level).

The number of expected responses per respondent group and per country is presented in Table 2.

Table 2: Number of targeted responses per country and respondent group.

	Number /16 countries	Number per country
Citizens	9.376	586
Businesses	512	32
Policy makers	512	32
Total	10.400	650

The sample for citizens follows specific quotas for age, gender, and geographical distribution to ensure representativeness of the sample within each country. Thus, questions related to these topics are asked in the beginning of the survey. Table 3 shows the targeted proportion of respondents from each age group in the surveyed countries. The representation of age groups is based on the age distribution (2021) in each of the surveyed countries.

Table 3: Targeted representation of age groups in each country.

Country	18-25	26-35	36-45	46-55	56-65	65+
Austria	11 %	16 %	16 %	18 %	17 %	22 %
Belgium	14 %	16 %	16 %	16 %	16 %	22 %
Czech Republic	9 %	16 %	19 %	18 %	15 %	23 %
Denmark	13 %	16 %	15 %	17 %	16 %	24 %
Finland	11 %	16 %	16 %	15 %	16 %	26 %
France	12 %	15 %	16 %	17 %	16 %	25 %
Germany	10 %	15 %	15 %	17 %	18 %	25 %
Greece	10 %	13 %	17 %	18 %	16 %	26 %
Hungary	10 %	16 %	19 %	18 %	15 %	23 %
Ireland	13 %	16 %	21 %	18 %	14 %	18 %
Italy	9 %	13 %	16 %	19 %	17 %	26 %
Netherlands	12 %	16 %	15 %	17 %	17 %	23 %
Poland	10 %	17 %	20 %	15 %	16 %	21 %
Portugal	10 %	13 %	17 %	18 %	16 %	25 %
Romania	10 %	16 %	18 %	19 %	15 %	22 %
Spain	10 %	14 %	19 %	19 %	16 %	23 %

In addition, gender specific quotas for age groups are applied. The quotas for geographical location are based on NUTS1 classification.

2.4.3 Data collection and monitoring

The data collection began in all countries simultaneously with a soft launch. The content of the questionnaire and the technical infrastructure have already been tested thoroughly before this phase. The focus of the soft launch is on rechecking the technical aspects of the questionnaire and the success of the screening procedures in all countries and in a real-world environment.

Hard quotas have been defined before the survey launch, and the service provider constantly monitors the number of completed questionnaires by country and socio-demographic aspects (age, gender). In addition to the responses to the survey questions, para-data such as time spent, device used, and location of breakoffs are collected (see Section 4).

2.4.4 GDPR and ethical issues

The GRETA multinational survey is handled by a third party with expertise in ethics and privacy matters relating to data collection by surveys. This third-party service provider works with several panel providers across EU, and the participants of these panels have already given consent for being invited to surveys. Personal data of these participants is not transferred to the service provider or the GRETA team.

Furthermore, no personally identifiable information is asked in the survey. The most detailed locational information asked is the municipality in which the respondent lives (asked only from the citizen sample). This question is responded via a drop-down menu, eliminating the risk of respondent accidentally giving more detailed information.

2.5 Availability of data

GRETA participates in the Open Research Data Pilot of the European Commission and is thus committed to ensure open access to research data and scientific publications produced during the project. However, embargo periods and other restrictions may be applied. According to the GRETA data management plan (D8.5),

- Access to data and reports will be limited to members of the GRETA project until publications and presentations are submitted.
- Some data and reports may be held back temporarily until the results are reviewed and validated by the appropriate intellectual property office at LUT or the partner institutions.
- Some data might not be made available if deemed sensitive personal information by the supervising committee.
- Proprietary information (if any) provided by commercial firms under a confidentiality agreement will not be made available without the consent and approval of the firms.

The GRETA Open Portfolio for Civic Energy Empowerment (OPCE) will be one of the major outputs of the project. GRETA OPCE will make available curated project outputs, such as anonymised data in questionnaires, interviews, surveys (including the EU-wide survey), novel knowledge on energy citizenship emergence, the GRETA framework for energy citizenship emergence, developed behavioural models, and Energy Citizenship Contract (ECC) and Community Transition Pathway (CTP) packages. These contents will be usable beyond the project by any interested stakeholders from civil society, academia, industry, or others.

To ensure the availability of these outputs after the project ends, GRETA OPCE has been set up as a Zenodo community (see https://zenodo.org/communities/greta).

3 Questionnaire structure

The overarching structure of the GRETA multinational survey is presented in Figure 2.

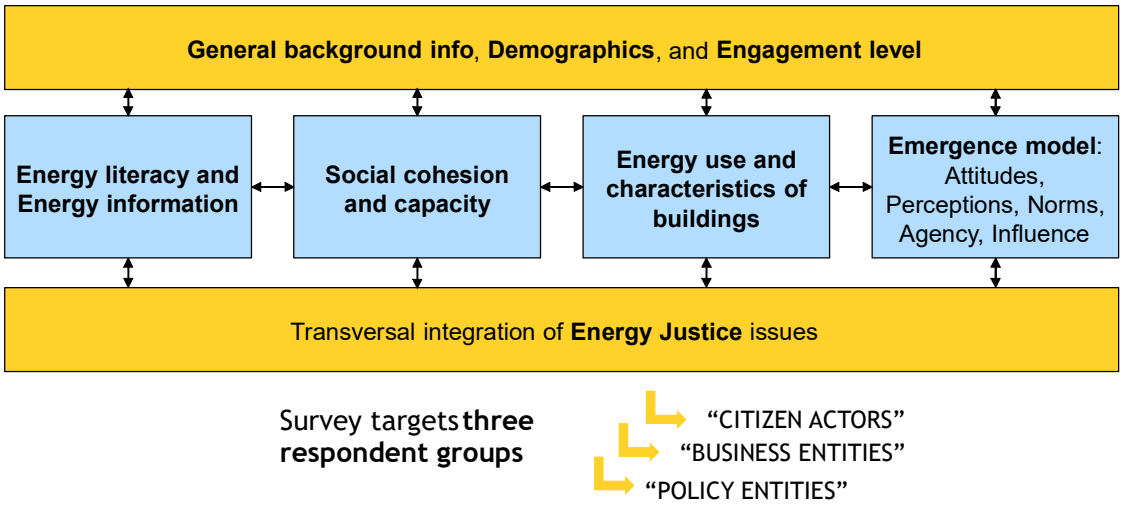

Figure 2: Overarching survey structure.

The survey includes questions related to background of the respondents, demographic information and their engagement in energy citizenship / energy transition, forming the basis for various analyses. In addition, the survey includes specific question blocks related to energy literacy and energy information, social cohesion and capacity, energy use and characteristics of buildings, and the 3-stage energy citizenship emergence model elaborated in D1.1. Stage 1 of the model provides the basis for a better understanding of the individual energy behaviour, whereas stages 2 and 3 offer understanding of how energy citizenship could emerge at the collective and societal levels. The design of the questions included in this last-mentioned block is based on qualitative interviews conducted within the six GRETA case studies, utilizing the same theoretical underpinning.

Energy justice is a transversal theme across the survey. Instead of pertaining to a dedicated question block, these aspects have been integrated into the questions of the other blocks.

The survey targets three separate respondent groups: 1) citizens (majority of the sample), 2) businesses, and 3) people involved in policy making. While the questionnaires to all three groups address the same main themes, there are variations in the questions, the citizen questionnaire being more extensive than the other two. Dedicated business panels are applied in 11 countries, whereas in other countries all respondents are directed to the appropriate questionnaire version based on a screening

question asking about the respondents' employment status and entrepreneurial and policy activities.

The citizen survey applies quotas for the gender, age, and geographical location (NUTS1) of the respondents, those questions being asked at survey onset. The other two versions of the survey use quotas only for the country of the respondents.

Table 4 presents examples of themes addressed in the specific question blocks.

Table 4: Examples of themes addressed in the survey.

Question block	Example themes
General background info / demographics	Respondent's age, gender, geographical location, education level, income Screening question to assign respondent to the appropriate survey version
Engagement level	Participation in activities supporting decarbonization (e.g. use of sustainable transport)
Energy literacy and information	Sources used for energy information and trust in them, use of social media for energy information
Social cohesion and capacity	Opinions about own neighbourhood Vignette experiment on citizen assemblies Choice experiment on energy community projects
Energy use and characteristics of buildings	Heating and electricity costs, heating and cooling methods, age of building, building type
Emergence model	Questions related to the 3-stage energy citizenship emergence model elaborated in D1.1

The questionnaire applies exclusively closed-ended questions, even though some questions have a text box after response option "other" for further clarifications. This is because the GRETA consortium has aimed to design the survey in such way that the average time taken to complete the survey would not exceed 30 minutes.

The questionnaires for the three groups can be found in Annex 1. The questions related to the 3-stage energy citizenship emergence model address four behaviours, namely:

1) Cooperative self-generation of renewable energy.

2) Use of sustainable transport (e.g., walking, using a bike, public transport or an electric vehicle).

3) Use (buying, renting or leasing) of an electric vehicle with an autonomous and connected capacity.

4) Activities to replace the use of gas in domestic appliances (cooking and/or heating).

These four behaviours represent roughly the target behaviours of the GRETA case studies. To not overburden the respondents, each respondent group is randomly stratified into three or four (Behaviour 4 is included only in the Netherland and Germany as these countries have a special interest in such behaviours due to national initiatives and the current political situation) sub-groups responding to questions related to one specific behaviour. Annex 1 shows the questions related only to the behaviour "cooperative self-generation of renewable energy". The questions related to the other behaviours follow the same structure.

In addition to the regular questions, the survey includes a choice experiment (only citizen respondents) and a vignette framing experiment (all respondent groups). The choice experiment alludes to a community energy project planned in the respondents' local community. The varied attributes include, e.g., technology (solar or wind), annual dividend, and distance between project and own home. The vignette experiment addresses citizen assemblies and their role in decision making on energy and climate policy, and the perceived fairness and willingness to accept decisions made by them.

4 Progress of the survey

4.1 Fieldwork implementation and progress

The fieldwork started running on Thursday, September 29, 2022, and is now in progress. It respects predefined quotas, making sure that a variety of respondents in terms of age, gender, and geographical distribution have answered the questions. At the same time, a target number of responses was established per country, which is further subdivided into respondent groups.

4.1.1 Individual responses by respondent group, per country

Table 5 shows the proportion of the target number of 650 responses per country (more specifically, 586 responses for citizens, 32 responses for businesses, and 32 responses for policy makers) that has been reached during the first week of fieldwork.

Table 5: Proportion of responses after one week of survey fieldwork, by group and country.

Country	Citizens	Businesses	Policy makers	Total
Austria	81,6%	100,0%	12,5%	79,1%
Belgium	58,0%	78,1%	28,1%	57,5%
Czech Republic	100,0%	87,5%	0,0%	94,5%
Denmark	96,2%	87,5%	31,3%	92,6%
Finland	99,5%	100,0%	18,8%	95,5%
France	92,2%	87,5%	34,4%	89,1%
Germany	92,0%	81,3%	43,8%	89,1%
Greece	85,0%	100,0%	9,4%	82,2%
Hungary	93,3%	100,0%	28,1%	91,4%
Ireland	85,2%	75,0%	21,9%	81,5%
Italy	93,2%	87,5%	34,4%	90,0%
Netherlands	87,2%	84,4%	53,1%	85,4%
Poland	89,6%	93,8%	18,8%	86,3%
Portugal	86,0%	87,5%	6,3%	82,2%
Romania	93,7%	100,0%	31,3%	91,2%
Spain	74,7%	87,5%	21,9%	72,8%

4.1.2 Completion time

The targeted average time for survey completion by each respondent is 30 minutes. After beginning of the fieldwork, any early signs of a significantly longer completion time require immediate follow-up measures from the GRETA consortium and the service provider.

During the first days, the average survey completion time was 29 minutes and 11 seconds.

4.1.3 Breakoffs at different stages

The service provider monitors the occurrence of breakoffs in survey completion, more specifically their number and specific location (i.e., the stage in the survey where the respondents have dropped the survey). This information serves as indicator of possible difficulties in answering specific questions, allowing for localized corrective actions to be taken in a timely fashion.

The current number of breakoffs at different survey stages is presented in Table 6.

Table 6: Number of breakoffs at different stages.

Question	Number of break offs
In which municipality do you live?	1403
When you think of your personal contribution to the energy transition, do you perform the following activities?	1328
Before the start of the CBC experiment	1057
What gender do you identify as?	746
To what extent has your household been engaged in cooperative self-generation of renewable energy?	474
What is the configuration of the heating system?	253
In general, are you in favour of this policy for your region?	160
Have you travelled by plane for personal use (not work-related) in the last 3 years?	125
In which type of housing do you live?	102
How much did you spend in an average month in the last year for heating your home?	99

4.2 Overall evaluation of progress and corrective actions

After about one week of fieldwork the percentage of completion is above 70% for almost all countries. Particularly for almost half of the countries involved in the survey (Czech Republic, Denmark, Finland, Hungary, Italy and Romania), 90% of completion was reached.

The survey length is approximately 29 minutes and within the agreed limit.

According to the relevant breakoffs, the highest number of drop-outs are related to:

- Screening questions, such as gender (746) and municipality (1403)
- Personal contribution to the energy transition (1328)
- Page link between initial survey and CBC experiment (1057)

In total, 9345 incomplete interviews were conducted during the first days. Based on the service providers' previous experience, the values above are within acceptable limits: a percentage around or lower than 10% of incomplete interviews is still reasonable. The only corrective action relates to opening of age quotas in five of the countries to reach the targeted number of responses.

5 Conclusions

This deliverable has described the design, features, and implementation of the GRETA multinational citizen consultation, which aims to improve the understanding of the rationales behind energy citizenship behaviours and its emergence.

The survey is conducted in 16 EU countries and its total sample size is about 10.000 respondents. The survey targets three groups 1) citizens (90% of the sample), 2) businesses (5% of the sample), and 3) individuals involved in policy making (5%). The questions for the three groups address the same main themes, with slight question variations. The citizen questionnaire is also more comprehensive than the ones for the other two groups

The fieldwork started running on Thursday, September 29, 2022, and is now in progress. It is expected to be completed during October 2022. No major issues occurred during the first week of field work.

The survey data will be at a later stage made available free of charge for further analyses via the GRETA Zenodo page (https://zenodo.org/communities/greta). Before the data will be published, it will be utilized in various analyses by the GRETA consortium. Open access to the GRETA deliverables and scientific publications based on this data will also be ensured.

References

Landeck, J., Ahmed, F., Wolff, A. (2021). Data Management Plan. D8.5 of the Horizon 2020 project GRETA, EC grant agreement no 101022317, Coimbra, Portugal.

Montalvo, C., Schlindwein, L., Ruggieri, B., Kantel, A. (2021). Framework for research on energy citizenship emergence structure and dynamics. D1.1 of the Horizon 2020 project GRETA, EC grant agreement no 101022317, The Hague, The Netherlands.

Annex 1: Questionnaires

Questions for all respondent groups

What gender do you identify as?
1. Female
2. Male
3. Gender-queer / Non-binary / Other
4. Prefer not to say

Please indicate your age in years

Which of these categories best describes your situation?
1. In education or training
2. Employed
3. Self-employed with employees
4. Self-employed without employees
5. Helping family member in a family farm or business
6. Unemployed
7. Retired
8. In military or civic service
9. Taking care of the home or family
10. On maternity/paternity leave or on parental leave or childcare leave
11. Ill or disabled for a long time or permanently
12. Contributing to policy making while employed in the public sector
13. Contributing to policy making while employed in NGOs, associations or similar organisations

Questions for citizens

In which region do you live?

In which municipality do you live?

What is your level of education?

Where do you live?
1. Village/small town (less than 10,000 people)
2. Medium/large town (10,000 to 100,000 people)
3. City (Over 100,000 people)
4. Very large city (Over 1,000,000 people

Does your home have a cooling system, and if yes what type is it?

1. No
2. Yes, central air conditioning
3. Yes, room/window air conditioning
4. Yes, heat pump
5. Yes, district cooling
6. Other, please specify:
7. I do not know

In which periods of the day do you usually use the cooling?
Please select all that apply
1. Morning (7:00-13:00)
2. Afternoon (13:00-20:00)
3. Nighttime (20:00-07:00)
4. Other, please specify:

What heating system do you currently use in your home, i.e. how do you heat your rooms? Several answers are possible, i.e. you can also select a combination of heating systems.
1. Oil boiler
2. Gas boiler
3. Electric heater or electric boiler
4. District heating
5. Heat pump
6. Solar thermal plant
7. Biomass boiler, heater, fireplace, or stove (e.g., pellets, wood)
8. Other, please specify:
9. I don't use any heating system at home
10. I do not know

What is the configuration of the heating system?
1. Central heating (heating the whole building where I live)
2. Individual heating system (heating the whole house or apartment)
3. It only heats the rooms where it is located (individual heaters)
4. Other, please specify:

In which periods of the day do you usually use the heating?
Please select all that apply
1. Morning (7:00-13:00)
2. Afternoon (13:00-20:00)
3. Nighttime (20:00-07:00)
4. Other, please specify:

Do you or your household use the following items?
Please select all that apply
1. Solar electric panels
2. An electric vehicle

3. A green electricity tariff (100% renewable)
4. A battery storage
5. None of above

How much did you spend in an average month in the last year for heating your home?
1. Less than 15 EUR
2. 15-35 EUR
3. 36 - 60 EUR
4. 61 - 85 EUR
5. 86 - 110 EUR
6. 111 - 135 EUR
7. 136 EUR or more
8. I do not know
9. Not applicable

How accurate do you believe your previous answer (monhly heating costs) is, on a scale of 1 to 5 where 1 is very inaccurate and 5 is very accurate? (Options 1-5)

How much did you spend in an average month in the last year for hot water?
1. Less than 15 EUR
2. 15-35 EUR
3. 36 - 60 EUR
4. 61 - 85 EUR
5. 86 - 110 EUR
6. 111 - 135 EUR
7. 136 EUR or more
8. I do not know
9. Not applicable

How accurate do you believe your previous answer (monthly hot water costs) is, on a scale of 1 to 5 where 1 is very inaccurate and 5 is very accurate? (Options 1-5)

How much did you spend in an average month in the last year for electricity?
1. Less than 15 EUR
2. 15-35 EUR
3. 36 - 60 EUR
4. 61 - 85 EUR
5. 86 - 110 EUR
6. 111 - 135 EUR
7. 136 EUR or more
8. I do not know
9. Not applicable

How accurate do you believe your previous answer (monthly electricity costs) is, on a scale of 1 to 5 where 1 is very inaccurate and 5 is very accurate? (Options 1-5)

Please answer the following questions: (Options: Never, In 1 or 2 months in the last year, Some months in the last year, Almost every month in the last year)

1. How often did you worry that you wouldn't be able to pay your home energy bill?
2. How often did you have a supplier threaten you to disconnect your electricity or home heating fuel service, or discontinue making fuel deliveries?
3. During the winter months, how often did you keep your home at a temperature that you felt was unsafe or unhealthy?
4. During the summer months, how often did you keep your home at a temperature that you felt was unsafe or unhealthy?

In which type of housing do you live?

1. Detached house
2. Semi-detached house
3. Terraced house
4. Flat in a building with less than ten dwellings
5. Flat in a building with ten or more dwellings
6. Other

What is the housing area of your home?

1. Less than 50 m2
2. 50 to 100 m2
3. 100 to 150 m2
4. 150 to 200 m2
5. Greater than 200 m2

Do you know when was the building in which you live built?

1. Before 1945
2. 1945–1969
3. 1970 –1979
4. 1980–1989
5. 1990–1999
6. 2000–2009
7. 2010–2015
8. After 2015
9. I do not know

Has the building or house undergone major renovations since it was built?
Please select all that apply

1. Insulation of walls and/or the ceiling
2. Replacement of heating system
3. New windows
4. Nothing was renovated
5. I do not know
6. Other, please specify:

Do you have an Energy Performance Certificate of your house?

1. Yes
2. No
3. I do not know

What is the Energy rating of your building?
1. A or higher (e.g. A+)
2. B or higher (e.g. B+)
3. C or higher (e.g. C+)
4. D or higher (e.g. D+)
5. E or higher (e.g. E+)
6. F or higher (e.g. F+)
7. G or higher (e.g. G+)
8. Other type of rating, please specify:

How many cars do you have in your household?
1. None
2. Number of cars driving with petrol or diesel:
3. Number of hybrid cars (driving partly with fuel and partly with electricity):
4. Number of fully electric cars:

How often do you use the following modes of transport for personal use (including commuting to and from work but excluding business trips)? (Options: Hardly or never, Less often, 1-3 times per month, 1-3 times per week, (Almost) daily)
1. Walking
2. Biking
3. Car
4. Fully electric car
5. Long-distance train or bus
6. Local and regional public transport such as metro, tram, bus

Have you travelled by plane for personal use (not work-related) in the last 3 years?
1. Yes
2. No

How often and how far did you travel by air in the last 3 years?

Please only consider flights for a private occasion such as vacation or family trips, i.e., no business-only trips. Please count the outward and return flights separately as two flights. Flights with stop-overs are one flight. For reference:
- A flight from Berlin to Munich is around 500km
- A flight from Berlin to London is around 1000km
- A flight from Munich to New York is around 6500km
- A flight from Frankfurt to Singapore is around 10300km

Number of flights:
Very short trips up to 500km (less than 1h flight time):
Short trips between 501 and 1500km (between 1 and 2h flight time):

Medium trips between 1501km and 3000km (between 2 and 4h flight time):
Long distance trips between 3001km and 10000km (between 4 and 12h flight time):
Very long distance trips over 10000km (over 12h flight time):

Please select the option that best describes your opinion about the neighbourhood in which you live. (Options 1-7, 1 = Strongly disagree, 7 = Strongly agree)

1. Most people in this area can be trusted
2. People in this area will take advantage of you
3. If you were in trouble, there are a lot of people who would help you
4. Most people in this area are friendly
5. People in this area have lots of community spirit
6. People in this area do things to help the community
7. People in this area treat each other with respect
8. People in this area are tolerant of others who are not like them
9. In this area there are people who belong and some who don't

Imagine that a new policy proposal targeting inner-city driving is currently considered in your region. In order to decrease the usage of cars in city centres, municipalities are considering introducing a green levy on parking tickets. The costs for parking would increase in your region, on average, by 10/50/200% and the revenue would be used to finance the improvement of public transportation in your region. The measure affects residents and visitors alike. Fully electric vehicles are exempt from the levy. The measure is primarily meant to reduce greenhouse gas emissions but is also expected to have other benefits, like reduced local pollution and noise emissions.
In general, are you in favour of this policy for your region?

1. Yes
2. No
3. Don’t know

Vignette experiment

To what extent do you agree with the following statements? (Options 1-7, 1 = Strongly disagree, 7 = Strongly agree)

1. I think of myself as an environmentally friendly consumer
2. I think of myself as someone who is very concerned with environmental issues
3. Acting environmentally-friendly is an important part of who I am
4. Please select the middle option here to show that you pay attention
5. I am the type of person who acts environmentally-friendly

When you think of your personal contribution to the energy transition, to what extent do you agree with the following statements? (Options: 1-7, 1 = Strongly disagree, 7 = Strongly agree)

1. I do not know what the energy transition is
2. I think the energy transition is wrong and I do not want to participate in it
3. I think the energy transition is a good thing. However, I think myself can contribute little to it

4. The energy transition is a joint task in which everyone in society, including me, should make a contribution ‘’

When you think of your personal contribution to the energy transition, do you perform the following activities? (Options: Yes, No, Planning to do, Stopped doing)

1. I save energy in my everyday life
2. I use apps to track my energy consumption and behaviour
3. I talk with friends and family about the energy transition.
4. I engage in a local energy project
5. I demonstrate against climate change and for climate justice.
6. I am a member of an energy cooperative

Choice experiment on energy communities

In how far do you trust the following groups and institutions regarding decisions on the energy transition? (Options: Fully distrust, Tend not to trust, Undecided, Tend to trust, Fully trust)

1. EU parliament / European Commission
2. National politicians (members of parliament, ministers, etc.)
3. Regional politicians (members of the state parliament, state ministers, etc.)
4. Local politicians (members of city council, mayors, etc.)
5. National government agencies
6. Judiciary / legal system
7. Scientists
8. Industry
9. Public media (TV, radio, newspapers, etc.)
10. Private households / citizens
11. Energy providers

How many people – including yourself – live mainly in your household?

1. Number of adults (older than 17 years) mainly living in the household incl. yourself:
2. Number of children (under 18 years) mainly living in the household:

Are you a tenant or owner of the apartment or house you are living in?

1. Owner, with mortgage or loan
2. Owner, no outstanding mortgage or housing loan
3. Tenant, rent at market price
4. Tenant, rent at reduced price or free
5. Other, please specify:
6. Do not know / prefer not to say

How much is your rent / mortgage / loan per month?

Do the following aspects apply to people mainly living in your household? (Options: Yes, No)

1. Chronical disease or disability that requires more air
2. Chronical disease or disability that requires more heating
3. Chronical disease or disability that requires special care for transport
4. Smoking
5. Receiving any form of public support such as social welfare payments or housing allowances

What is the occupancy status in your household?
1. Single
2. Two or more persons (not a family)
3. Family (single person or couple with children)
4. Family with no children
5. Other

My monthly income situation is mostly stable
1. Yes
2. No

How would you describe your household's current income?
1. Finding it very difficult to live on current income
2. Finding it difficult to live on current income
3. Coping on current income
4. Living comfortably on current income
5. Living very comfortably on current income

Please indicate your household's annual mean net income [€] in the last year
1. No income
2. Less than 15.000€
3. Between 15.000€ and 29.999€
4. Between 30.000€ and 49.999€
5. Between 50.000€ and 74.999€
6. Between 75.000€ and 99.999€
7. Between 100.000€ and 150.000€
8. More than 150.000€
9. Prefer not to say

Please indicate in how far you agree with the following statements. (Options 1-7, 1 = Strongly disagree, 7 = Strongly agree)
1. I identify with nationally oriented policies
2. I identify with socially oriented policies
3. I identify with conservative policies
4. I identify with liberally oriented policies
5. I identify with environmentally oriented policies

To what extent has your household been engaged in cooperative self-generation of renewable energy?[3]

1. We are unaware of cooperative self-generation of renewable energy
2. We know about it but not using the option
3. We are using it
4. We are promoting it
5. We are actively championing it

How likely is it that your household will participate in cooperative self-generation of renewable energy? (Options 1-7 where 1 = very unlikely and 7 = very likely)

1. Within the next five years
2. In the longer term

The environmental problems generated by the usage of electricity generated with fossil fuels are likely to be:
controllable … uncontrollable
not threatening … threatening
of very local impact … of global impact
with no fatal consequences … with fatal consequences
equally distributed … affecting people very unequally
non-catastrophic … catastrophic
not affecting future generations … affecting future generations very strongly
voluntary for those exposed … involuntary for those exposed
not affecting me … affecting me
observable … not observable
unknown to those exposed … known to those exposed
arising with long delay … arising immediately
new risk … old risk
pure speculation … scientifically confirmed

The environmental effects of the usage of electricity generated with fossil fuels for our community are likely to be: (Options: Low, High)

1. At the moment
2. Within the next five years
3. In the longer term

Cooperative self-generation of renewable energy is likely to result in the following effects for my household: (Options: 1-7, I do not know, 1 = highly negative, 7 = highly positive)

---

[3] This is the first question related to the 3-stage model. Only questions related to behaviour "cooperative self-generation of renewable energy" are shown as an example. The questions structure for the other three behaviours follows the same structure.

1. Safety
2. Emissions and environment
3. Complying with regulations
4. Our comfort and convenience
5. Our economy
6. Our autonomy
7. Participation in our community
8. Our health
9. Our internet privacy
10. Other (if applicable), please speciy:

Overall effect:

11. Now?
12. In five years?
13. In the long term?

How is the support given to cooperative self-generation of renewable energy by the following stakeholders or parties? (Options: 1-7, I do not know, 1 = strong opposition, 7 = strong support)

1. Family
2. Partner
3. Friends
4. Local government
5. Regional government
6. National government
7. European regulation
8. From associations and businesses
9. Other (if applicable):

Overall support from stakeholders:

10. Now?
11. In five years?
12. In the long term?

How would you assess your knowledge and resources to participate in cooperative self-generation of renewable energy? (Options: 1-7, I do not know)

1. Knowledge (technical, infrastructure, equipment, etc.)
2. Capacity to collaborate with others
3. Financial resources
4. Knowledge on funding sources
5. Relevant laws and regulations
6. Availability of time
7. Trust on technical solutions
8. Trust on business
9. Trust on government
10. Pre-existing old energy appliances within the household/building
11. Other (if applicable):

Your Overall capacity to adopt/participate:

12. Now?
13. In five years?
14. In long term?

My relation with business providing solutions for cooperative self-generation of renewable energy is likely dominantly characterised by:
1. Everything is done for the common societal good
2. Business dominates and dictates the terms of the service
3. I pay back as I receive
4. Everything has a price

Ideally this relation should be:
1. Everything is done for the common societal good
2. Business dominates and dictates the terms of the service
3. All contributions and what we receive should be a tit for tat, I give as I receive
4. Everything should have a price

My relation with government concerning cooperative self-generation of renewable energy solutions is likely dominantly characterised by:
1. Everything is done for the common societal good
2. Government dictates the form and terms of our relation
3. I pay back as I receive
4. Every service has a price

Ideally this relation should be:
1. Everything should be done for the common societal good
2. Government dictates the form and terms of our relation
3. All contributions and what we receive should be a tit for tat, I give as I receive
4. Everything should have a price

The idea of cooperative self-generation of renewable energy for my household makes me feel: (Options: 1-7, I do not know, 1 = Strongly disagree, 7 = Strongly agree)[4]
...good
...proud
...worthwhile
...satisfied
...bad
...guilty
...pointless
...remorseful

[4] This is the last question related to the 3-stage model.

How often do you perform the following activities? (Options: Never, Rarely, Occasionally, Often, Always, Prefer not to say)

1. Unplug electronic devices that are not being used
2. Actively search for products that are more energy efficient
3. Turn off all lights before leaving a room
4. Encourage friends or family to be more energy efficient
5. Consciously participate in carpooling
6. Consciously choose to travel without a car (e.g., walk, bike, public transport, etc.)

If you had a question about energy (e.g., trends, policy, efficiency, conservation, etc.), where would you most likely turn to, to find information?
Select all that apply

1. Textbooks
2. Friends
3. Family
4. Search engines (e.g. Google search)
5. Scholarly research database
6. Online or print encyclopedias (e.g. Wikipedia)
7. Social media feed; non-professional profiles (e.g. friends, family, etc.)
8. Social media; professional profiles (e.g. industry, non-profit, or subject expert)
9. Blogs or forums
10. Government websites
11. Industry websites (e.g., utility, gas, renewables, etc.)
12. Non-profit agencies
13. Other, please specify:

Indicate also the extent to which you trust the information provided by each of the following information sources. (Options: Strongly distrust, Somewhat distrust, Neutral, Somewhat trust, Strongly trust, Prefer not to say)

1. Textbooks
2. Friends
3. Family
4. Search engines (e.g. Google search)
5. Scholarly research database
6. Online or print encyclopedias (e.g. Wikipedia)
7. Social media feed; non-professional profiles (e.g. friends, family, etc.)
8. Social media; professional profiles (e.g. industry, non-profit, or subject expert)
9. Blogs or forums
10. Government websites
11. Industry websites (e.g., utility, gas, renewables, etc.)
12. Non-profit agencies

Please select the option that best describes your use of social media channels and energy information. (Options: I use this to follow energy related information,I use this but not for energy related information, I do not use this at all)

1. Facebook

2. Instagram
3. Twitter
4. YouTube
5. TikTok
6. LinkedIn
7. Other (mention all that apply)

Which two of the following topic areas do you believe you are most likely to proactively gather information from, over the next 6 months?
Please select two options

1. Energy efficiency
2. Environmental impacts of energy actions
3. Economic impacts of energy actions
4. Social impacts of energy actions
5. Role of foreign affairs in energy decisions
6. Energy trends
7. Energy resources
8. Energy safety
9. Access to affordable energy
10. I'm unlikely to gather any energy related information

How complex do you find (Options 1-7, I do not know; 1 = not very complex, 7 = extremely complex).

1. Understanding my monthly electricity consumption
2. Understanding my monthly heating and/or cooling consumption
3. Knowing how much I spend in energy
4. Knowing the share of renewable energy and fossil fuel-based energy that I consume
5. Implementing green energy solutions, such as PV panels and air-source or ground-source heat pumps, at home

Ten years from now, how do you think your country will have changed in each of the following areas? (Options: Significantly decrease, Decrease, Same as today, Increase, Significantly increase, Prefer not to say)

1. Use of oil as an energy source
2. Use of gas as an energy source
3. Use of coal as an energy source
4. Production of nuclear energy
5. Consumption of renewable energy sources (e.g,., wind, solar, etc.)
6. Technology advancements in energy efficiency and conservation
7. Consumer energy awareness
8. Government actions to address climate change
9. Energy demand
10. Energy self-sufficiency (e.g. rooftop solar panels, individual wind turbine, geothermal, etc.)
11. At-home electricity storage

12. Energy consumption costs

Which of the following are examples of a behaviour that would help to save energy? Choose all that apply

1. Lower the temperature set point of your water heater
2. Take shorter showers
3. Drive slower on the highway
4. Run full loads in the dishwasher
5. Utilize public transportation when available

Please indicate the degree to which you disagree or agree with the following statements. (Options 1-7, Prefer not to say)

1. Energy efficiency and conservation isn't that important to me
2. I'm too busy to be concerned with my energy usage
3. It would be too much of an inconvenience to my lifestyle to reduce my energy usage
4. When home, I take actions to conserve energy
5. There is very little I can do personally to conserve energy in my home
6. My efforts to conserve energy will have a positive impact on the environment
7. I am not willing to conserve energy at home if that comes at any cost to my comfort
8. Energy conservation and efficiency are very common topics of conversation among my family and friends
9. Energy efficiency is vital to my country's economy
10. I have a moral obligation to reduce my energy usage
11. I am willing to compromise with those whose views on energy are very different from mine
12. Reducing my energy consumption will have a strong, positive impact on my personal finances

Please indicate the degree to which you disagree or agree with the following statements. (Options 1-7, Prefer not to say)

1. We need to develop more ways of producing renewable energy, even if that means energy will cost more
2. The government has a strong role to play in our nation's energy efficiency and conservation policies
3. Climate change is a vital issue that must be addressed
4. I frequently stay up-to-date on local and national energy issues
5. I believe I have a voice in helping to impact energy policies
6. Clean energy is more important than reliable and affordable energy
7. My country needs to invest more money and effort into becoming energy independent as soon as possible
8. Becoming an energy independent country is vital to our economic success and national security
9. The EU should be focused on leveraging all energy sources (oil, gas, coal, and renewables)

10. Lower income people should not bear the cost of the energy transition

Questions for businesses

In which sector does your company operate?
Please select all that apply
1. Agriculture
2. Construction
3. Energy
4. Fashion, textile, clothing, leather
5. Finance
6. Food, gastronomy, hotel
7. Health
8. Manufacturing, automotives
9. Public sector
10. Research, education
11. Technology: ICT, electronics
12. Tourism, leisure
13. Transportation
14. Other please specify:

Counting all locations where your company operates, what is the total number of persons who work there?
1. 1–9
2. 10 – 49
3. 50 – 249
4. 250 or more

How many employees in total are permanently employed in your company at the location you are working at?
1. Less than 10
2. 10-49 employees
3. 50-249 employees
4. 250-500 employees
5. More than 500 employees

How old is your company?
1. 0 – 5 years
2. 6 years or more

For how many years are you working at this company (including other locations)?

How complex do you find (Options: 1-7, I do not know, 1 = not very complex, 7 = extremely complex)...

1. Understanding my monthly electricity consumption
2. Understanding my monthly heating and/or cooling consumption
3. Knowing how much I spend in energy
4. Knowing the share of renewable energy and fossil fuel-based energy that I consume
5. Implementing green energy solutions, such as PV panels and air-source or ground-source heat pumps, at home

Please select the option that best describes your use of social media channels and energy information. (Options: I use this to share energy related information, I use this to share business related but not energy related information, I do not use this at all)

1. Facebook
2. Instagram
3. Twitter
4. YouTube
5. TikTok
6. LinkedIn
7. Other (mention all that apply):

What heating system does your company use? Several answers are possible, i.e. you can also select a combination of heating systems.

1. Oil boiler
2. Gas boiler
3. Electric heater or electric boiler
4. District heating
5. Heat pump
6. Solar thermal plant
7. Biomass boiler, heater, fireplace, or stove (e.g., pellets, wood)
8. Other, please specify:
9. My company does not have a heating system
10. I do not know

How large are your company's premises?

1. Less than 50 m2
2. 50 to 100 m2
3. 100 to 150 m2
4. 150 to 200 m2
5. 200 to 300 m2
6. Greater than 300 m2

Do you know when was the building in which you (mainly) operate built?

1. Before 1945
2. 1945–1969
3. 1970 –1979
4. 1980–1989
5. 1990–1999

6. 2000–2009
7. 2010–2015
8. After 2015
9. I do not know

Do you have an Energy Performance Certificate of your premises?
1. Yes
2. No
3. I do not know

What is the Energy rating of your building?
1. A or higher (e.g. A+)
2. B or higher (e.g. B+)
3. C or higher (e.g. C+)
4. D or higher (e.g. D+)
5. E or higher (e.g. E+)
6. F or higher (e.g. F+)
7. G or higher (e.g. G+)
8. Other type of rating, please specify:

Please select the option that best describes your opinion about the following statements: (Options: True, Partly true, False, I do not know)
1. My clients ask for energy/environmental certificates of my company/products
2. My company asks providers for energy/environmental certificates of their company/products
3. The regulatory framework allows and promotes the implementation of energy renewable systems in my company
4. There is financial help to implement energy efficiency measures in my company
5. My company has implemented energy efficiency measures

Please choose the most appropriate option: (Options: True, Partly true, False, I do not know)
1. We implemented energy efficiency measures because it was profitable
2. We implemented energy efficiency measures because we wanted to be more sustainable
3. We implemented energy efficiency measures because our clients were requesting us to do it
4. We would implement energy efficiency measures again in the future
5. We would recommend implementing energy efficiency measures to other companies

How many cars does your business have (e.g. for business trips, cars for employees)?
1. None
2. Number of cars driving with petrol or diesel:
3. Number of hybrid cars (driving partly with fuel and partly with electricity):

4. Number of fully electric cars:

How often do you use the following modes of transport for business trips (excluding commuting to and from work and personal trips)? (Options: Hardly or never, 1-2 times per year, 3-11 times per year, Monthly, (Almost) weekly, Several times per week)
1. Walking
2. Biking
3. Car
4. Fully electric car
5. Long-distance train or bus
6. Local and regional public transport such as metro, tram, bus
7. Plane

How often and how far did you travel by air in the last 3 years?
Please only consider flights for a business trips i.e., no private trips. Please count the outward and return flights separately as two flights. Flights with stop-overs are one flight. For reference:
- A flight from Berlin to Munich is around 500km
- A flight from Berlin to London is around 1000km
- A flight from Munich to New York is around 6500km
- A flight from Frankfurt to Singapore is around 10300km

Number of flights:
Very short trips up to 500km (less than 1h flight time):
Short trips between 501 and 1500km (between 1 and 2h flight time):
Medium trips between 1501km and 3000km (between 2 and 4h flight time):
Long distance trips between 3001km and 10000km (between 4 and 12h flight time):
Very long distance trips over 10000km (over 12h flight time):

Imagine that a new policy proposal targeting inner-city driving is currently considered in your region. In order to decrease the usage of cars in city centres, municipalities are considering introducing a green levy on parking tickets. The costs for parking would increase in your region, on average, by 50% and the revenue would be used to finance the improvement of public transportation in your region. The measure affects residents and visitors alike. Fully electric vehicles are exempt from the levy. The measure is primarily meant to reduce greenhouse gas emissions but is also expected to have other benefits, like reduced local pollution and noise emissions.
In general, are you in favour of this policy for your region?
1. Yes
2. No
3. Don't know

Vignette experiment

In how far do you trust the following groups and institutions regarding decisions on the energy transition? (Options: Fully distrust, Tend not to trust, Undecided, Tend to trust, Fully trust)

1. EU parliament / European Commission
2. National politicians (members of parliament, ministers, etc.)
3. Regional politicians (members of the state parliament, state ministers, etc.)
4. Local politicians (members of city council, mayors, etc.)
5. National government agencies
6. Judiciary / legal system
7. Scientists
8. Industry
9. Public media (TV, radio, newspapers, etc.)
10. Private households / citizens
11. Energy providers

Please select the answer that best describes your opinion: I think climate change is...
1. ... not a problem
2. ...a mild problem
3. ...a moderate problem
4. ...a severe problem
5. ...a very severe problem

When you think of your business' contribution to the energy transition to what extent do you agree with the following statements? (Options: 1-7, 1 = Strongly disagree, 7 = Strongly agree)
1. I do not know what the energy transition is
2. I think the energy transition is wrong and I do not want to participate in it
3. I think the energy transition is a good thing. However, I think me and my business can contribute little to it
4. The energy transition is a joint task in which everyone in society, including me and my business, should make a contribution

To what extent has your company engaged in providing solutions for cooperative self-generation of renewable energy recently?[5]
1. We are unaware of it
2. We know about it
3. We know about it but not participating
4. We are participating
5. We are promoting it
6. We are actively championing it

[5] This is the first question related to the 3-stage model. Only questions related to behaviour "cooperative self-generation of renewable energy" are shown as an example. The questions structure for the other three behaviours follows the same structure.

How likely is it that your company will supply solutions for cooperative self-generation of renewable energy? (Options: 1-7, 1 = very unlikely, 7 = very likely)

1. Within the next five years
2. In the longer term

The environmental problems generated by the usage of electricity generated with fossil fuels are likely to be:
controllable … uncontrollable
not threatening … threatening
of very local impact … of global impact
with no fatal consequences … with fatal consequences
equally distributed … affecting people very unequally
non-catastrophic … catastrophic
not affecting future generations … affecting future generations very strongly
voluntary for those exposed … involuntary for those exposed
not affecting me … affecting me
observable … not observable
unknown to those exposed … known to those exposed
arising with long delay … arising immediately
new risk … old risk
pure speculation … scientifically confirmed

The environmental effects of the usage of electricity generated with fossil fuels for our community are likely to be: (Options: Low, High)

1. At the moment
2. Within the next five years
3. In the longer term

Our company engaging in providing solutions for cooperative self-generation of renewable energy is likely to result in: (Options: 1-7, I do not know, 1 = highly negative, 7 = highly positive)

1. Safety
2. Emissions and environment
3. Complying with regulations
4. Our profit margins
5. Our technology portfolio
6. Public image
7. Participation in our community
8. Relations with stakeholders
9. Spinning new business
10. Technical systems risk
11. Data and internet security
12. Access to financial support
13. EU energy autonomy contribution
14. Other (if applicable):
    Overall effect:

15. Now?
16. In five years?
17. In the long term?

How is the support given to your company for providing solutions for cooperative self-generation of renewable energy by the following stakeholders or parties? (Options: 1-7, I do not know, 1 = strong opposition, 7 = strong support)

1. Key suppliers (components, materials, subsystems, etc.)
2. Company top management
3. NGOs
4. Citizens associations
5. Labour Unions
6. Local government
7. Regional government
8. National government
9. European regulation
10. From business associations
11. Other (if applicable):
    Overall support from stakeholders:
12. Now?
13. In five years?
14. In the long term?

How would you assess your company's knowledge and resources to provide solutions for cooperative self-generation of renewable energy? (Options: 1-7, I do not know, 1 = very low, 7 = very high)

1. Knowledge (technical, infrastructure, equipment, etc.)
2. Capacity to collaborate with others
3. Financial resources
4. Knowledge on funding sources
5. Relevant laws and regulations
6. Availability of time
7. Trust on technical solutions
8. Trust on citizens
9. Trust on government
10. Existing legacy systems
11. Existing regulatory systems
12. Other (if applicable):
    Your Overall capacity to adopt/participate:
13. Now?
14. In five years?
15. In long term?

Our relation with citizens for providing solutions for cooperative self-generation of renewable energy is dominantly characterised by:

1. Everything is done for the common societal good

2. Business dominates and dictates the terms of the service to citizens
3. We supply services or products in equal proportion as we get paid, no more.
4. Everything has a price

Ideally this relation should be:
1. Everything is done for the common societal good
2. Business dominates and dictates the terms of the service or products supply
3. All contributions and what we receive should be a tit for tat, we give as we receive
4. Everything should have a price

Our relation with government concerning provision providing solutions for cooperative self-generation of renewable energy is dominantly characterised by:
1. Everything is done for the common societal good
2. Government dominates and dictates the terms of the regulation deployment
3. Business dominates and dictates the terms of the regulation deployment
4. We support new regulations and as pay back they support our businesses
5. Our relations with government have a price (political or economic)

Ideally this relation should be:
1. Everything should be done for the common societal good
2. Government dictates the form and terms of our relation
3. Business dictates the form and terms of our relation
4. All contributions and what we receive should be a tit for tat, I give as I receive
5. Everything should have a price

The idea of our company engaging in providing solutions for cooperative self-generation of renewable energy makes me feel: (Options: 1-7, I do not know, 1 = Strongly disagree, 7 = Strongly agree)[6]
...good
...proud
...worthwhile
...satisfied
...bad
...guilty
...pointless
...remorseful

[6] This is the last question related to the 3-stage model.

Questions for individuals involved in policy making

Please specify the policy sector(s), that your work mainly contributes to.
Select all that apply

1. Agriculture
2. Economy & Financial Affairs
3. Education & Research
4. Energy
5. Environment
6. Health
7. Housing
8. Innovation
9. Social affairs
10. Spatial planning
11. Tax
12. Tourism
13. Trade
14. Transport
15. Other, please specify:

Position (optional):

Please specify your involvement in policymaking. My work is mainly related to...

1. Development of new policies
2. Decision-making
3. Influencing decision-making
4. Implementing policies
5. Evaluating policies
6. Not involved in policy-making
7. Other

How many years of experience in policymaking do you have?

Ten years from now, how do you think your country will have changed in each of the following areas? (Options: Significantly decrease, Decrease, Same as today, Increase, Significantly increase, Prefer not to say)

1. Use of oil as an energy source
2. Use of gas as an energy source
3. Use of coal as an energy source
4. Production of nuclear energy
5. Consumption of renewable energy sources (e.g., wind, solar, etc.)
6. Technology advancements in energy efficiency and conservation
7. Consumer energy awareness
8. Government actions to address climate change
9. Energy demand

10. Energy self-sufficiency (e.g. rooftop solar panels, individual wind turbine, geothermal, etc.)
11. At-home electricity storage
12. Energy consumption costs

Please select the option that best describes your use of social media channels and energy information. (Options: I use this to share energy related information, I use this to share work related but not energy related information, I do not use this at all)

1. Facebook
2. Instagram
3. Twitter
4. YouTube
5. TikTok
6. LinkedIn
7. Other (mention all that apply):

How often do you use the following modes of transport for business trips (excluding commuting to and from work and personal trips)? (Options: Hardly or never, 1-2 times per year, 3-11 times per year, Monthly, (Almost) weekly, Several times per week)

1. Walking
2. Biking
3. Car
4. Fully electric car
5. Long-distance train or bus
6. Local and regional public transport such as metro, tram, bus
7. Plane

How often and how far did you travel by air in the last 3 years?
Please only consider flights for a business trips i.e., no private trips. Please count the outward and return flights separately as two flights. Flights with stop-overs are one flight. For reference:

- A flight from Berlin to Munich is around 500km
- A flight from Berlin to London is around 1000km
- A flight from Munich to New York is around 6500km
- A flight from Frankfurt to Singapore is around 10300km

Number of flights:
Very short trips up to 500km (less than 1h flight time):
Short trips between 501 and 1500km (between 1 and 2h flight time):
Medium trips between 1501km and 3000km (between 2 and 4h flight time):
Long distance trips between 3001km and 10000km (between 4 and 12h flight time):
Very long distance trips over 10000km (over 12h flight time):

Imagine that a new policy proposal targeting inner-city driving is currently considered in your region. In order to decrease the usage of cars in city centres, municipalities are considering introducing a green levy on parking tickets. The costs for parking would increase in your region, on average, by 50% and the revenue would be used to finance

the improvement of public transportation in your region. The measure affects residents and visitors alike. Fully electric vehicles are exempt from the levy. The measure is primarily meant to reduce greenhouse gas emissions but is also expected to have other benefits, like reduced local pollution and noise emissions.
In general, are you in favour of this policy for your region?
1. Yes
2. No
3. Don't know

Vignette experiment

In how far do you trust the following groups and institutions regarding decisions on the energy transition? (Options: Fully distrust, Tend not to trust, Undecided, Tend to trust, Fully trust)
1. EU parliament / European Commission
2. National politicians (members of parliament, ministers, etc.)
3. Regional politicians (members of the state parliament, state ministers, etc.)
4. Local politicians (members of city council, mayors, etc.)
5. National government agencies
6. Judiciary / legal system
7. Scientists
8. Industry
9. Public media (TV, radio, newspapers, etc.)
10. Private households / citizens
11. Energy providers

Please select the answer that best describes your opinion: I think climate change is...
1. ... not a problem
2. ...a mild problem
3. ...a moderate problem
4. ...a severe problem
5. ...a very severe problem

Have you already encountered the term "energy citizenship"? Please select the option that applies the best.
1. No, I have never heard of the term before
2. Yes, I have heard of the term but I do not know in detail what is entails
3. I know about the concept but have not worked on it so far
4. I am familiar with the concept, which was already relevant for my work
5. I was involved in policymaking related to energy citizenship
6. I am planning to get involved in policymaking related to energy citizenship

When you think of your contribution to the energy transition to what extent do you agree with the following statements? (Options: 1-7, 1 = Strongly disagree, 7 = Strongly agree)

1. I do not know what the energy transition is
2. I think the energy transition is wrong and I do not want to participate in it
3. I think the energy transition is a good thing. However, I think citizens can contribute little to it
4. The energy transition is a joint task in which everyone in society, including me, should make a contribution

To what extent has your organization been engaged in supporting cooperative self-generation of renewable energy? [7]

1. We are unaware of it
2. We know about it
3. We know about it but not participating
4. We are participating
5. We are promoting it
6. We are actively championing it

How likely is it that your organization/agency will engage and support cooperative self-generation of renewable energy? (Options: 1-7, 1 = very unlikely, 7 = very likely)

1. Within the next five years
2. In the longer term

The environmental problems generated by the usage of electricity generated with fossil fuels are likely to be:
controllable … uncontrollable
not threatening … threatening
of very local impact … of global impact
with no fatal consequences … with fatal consequences
equally distributed … affecting people very unequally
non-catastrophic … catastrophic
not affecting future generations … affecting future generations very strongly
voluntary for those exposed … involuntary for those exposed
not affecting me … affecting me
observable … not observable
unknown to those exposed … known to those exposed
arising with long delay … arising immediately
new risk … old risk
pure speculation … scientifically confirmed
The environmental effects of the usage of electricity generated with fossil fuels for our community are likely to be: (Options: Low, High)

[7] This is the first question related to the 3-stage model. Only questions related to behaviour "cooperative self-generation of renewable energy" are shown as an example. The questions structure for the other three behaviours follows the same structure.

1. At the moment
2. Within the next five years
3. In the longer term

Our involvement in initiatives supporting cooperative self-generation of renewable energy is likely to result in: (Options 1-7, I do not know, 1 = highly negative, 7 = highly positive)

1. Safety
2. Emissions and environment
3. Citizens regulations acceptance
4. Our comfort and convenience
5. Our national economy
6. Political risk
7. Inter-ministerial relations
8. Empowering citizens
9. Public health
10. Internet security & privacy
11. Other (if applicable):
    Overall effect:
12. Now?
13. In five years?
14. In the long term?

How is the support given for cooperative self-generation of renewable energy by the following stakeholders or parties? (Options: 1-7, I do not know, 1 = Strong opposition, 7 = Strong support)

1. Citizens associations
2. NGOs
3. Our own agency/organization
4. Other national ministries
5. Local government
6. Regional government
7. National government
8. European regulations
9. From businesses associations
10. Other (if applicable):
    Overall support from stakeholders:
11. Now?
12. In five years?
13. In the long term?

How would you assess your organization's knowledge and resources to support cooperative self-generation of renewable energy? (Options 1-7, I do not know, 1 = very low, 7 = very high)

1. Knowledge (technical, infrastructure, equipment, etc.)
2. Capacity to collaborate with others

3. Financial resources
4. Knowledge on funding sources
5. Enforcing required regulations
6. Availability of time
7. Trust on available technical solutions
8. Trust on business
9. Trust on citizens
10. Existing legacy systems
11. Existing regulatory systems
    Other (if applicable):
12. Your Overall capacity to adopt/participate:
13. Now?
14. In five years?
15. In long term?

Our relation with business to implement new regulations/solutions required by cooperative self-generation of renewable energy is dominantly characterised by:
1. Everything is done for the common societal good
2. Government dominates and dictates the terms of the regulation deployment
3. We support businesses and as such pay back as they support our new regulations
4. Our relations with businesses have a price (political or economic)

Ideally this relation should be:
1. Everything should be done for the common societal good
2. Government dominates and dictates the terms of regulation enforcement
3. All contributions and what we receive should be a tit for tat, we give as we receive
4. Everything should have a price

Our relation with citizens to implement new regulations/solutions required by cooperative self-generation of renewable energy is dominantly characterised by:
1. Everything is done for the common societal good
2. Government dominates and dictates the terms of the regulation deployment
3. We support citizens and as such pay back as they support our new regulations
4. Our relations with citizens have a price (political or economic)

Ideally this relation should be:
1. Everything should be done for the common societal good
2. Government should dominate and dictate the terms of regulation enforcement
3. All government retributions to citizens should be a tit for tat, we give as we receive
4. Everything should have a price

Personally, the idea of cooperative self-generation of renewable energy makes me feel: (Options: 1-7, I do not know, 1 = Strongly disagree, 7 = Strongly Agree)[8]
...good
...proud
...worthwhile
...satisfied
...bad
...guilty
...pointless
...remorseful

[8] This is the last question related to the 3-stage model.