



Parity: Residential Consumers (english version)

1. Residential Consumers

About our project

The main objective of PARITY Project is to develop tools, which take advantage of the ability of electricity users to modify the way they consume or generate energy, in order to improve the operation of the electricity system.

In the electricity system of the future there will be many distributed generation sources (solar photovoltaic panels or windmills) and storage systems (batteries) spread along the grid. For proper grid operation, generation, storage and energy consumption must be coordinated. To reach this, generation, storage and energy consumption must be monitored and controlled by smart systems.

The tools to be developed in PARITY will allow for monitoring of the grid (finding problems) and monitoring of generators and consumers (finding solutions from the demand side):

* Electricity consumers involved in this project will be monitored to learn consumption patterns and comfort preferences, in order to calculate possible modifications of consumption to support the grid operation. For example, increasing the temperature set-point of an air conditioning system (from 21°C to 23°C) when there is excess of electricity consumption. This is called “Demand Response”.

* Renewable electricity generators will be monitored and urged to increase their consumption, or store the surplus in batteries, when it is sunny and there is excess renewable energy.

As compensation for supporting electricity companies in the operation of their grids, consumers and generators will be paid for their flexibility and the quantity will be traded in new “flexibility markets”.

A new actor in the flexibility markets will be the “aggregator”, an entity that will represent a high number of small customers in these markets. As a result, small consumers could participate in these markets without any special knowledge.

The PARITY solutions will be tested in buildings belonging to four pilot sites around the European Union (Spain, Greece, Switzerland and Sweden) to validate the effectiveness across climatic, cultural and techno-regulatory conditions.

Information we need

To develop the PARITY project tools and properly adapt them to all the electric system actors (from system operators and regulators to small consumers), different surveys and interviews need to be carried out.

This survey will be used to gather information among residential customers to learn which tools are most appropriate to monitor their energy consumption and demand. This survey will also allow us to characterize (energy consumption patterns, availability of technologies, such as electric vehicles or photovoltaic installations, etc...) residential consumers in the various project pilot sites.

Estimated time to complete the questionnaire: 15 minutes

Personal data protection:

According to the in force regulation, you are informed that due to the monitoring and control obligations to which Fundación CIRCE – Centro de Investigación de Recursos y Consumos Energéticos (hereinafter, “CIRCE” or the “Foundation”) is subject in the Project H2020 PARITY Project: Prosumer AwaRe, Transactive Markets for Valorization of Distributed flexibility enabled by Smart Energy Contracts (Nº864319) (hereinafter, the “Project”), in their condition of collaborator of the mentioned Project together with the rest of consortium partners, are obliged to keep records of the activities carried out, including meetings, training and/or dissemination of Project activities, interviews, among others, in the frame of the Project, aiming at performing the actions required by the control bodies and any other competent authorities or authorities of the Project.

With this consent, you are informed that your personal data can be sent to control bodies and any other competent authorities of the Project and to the rest of the consortium partners in order to comply with the control requirements under CIRCE’s obligations in the frame of the Project, and will be kept until the end of the Project and for the limited periods of the responsibilities that may result enforceable.

* 1. Additionally, CIRCE will process the personal data you provide us in this form to, in the framework of the Project, send you different surveys for completion, with the objectives of identifying the specifications of the tools developed in the framework of the reference project, based on the preferences of potential users, under their consent and / or the relationship maintained with Fundación CIRCE. In this sense, if you expressly authorize it by checking the corresponding boxes at the bottom of this form, your data may be processed by Fundación CIRCE for the purposes indicated above. You have the right, among others, to oppose the processing of your data, revoke your consent at any time, access, limit, rectify and / or delete your data by contacting the Data Protection Officer of CIRCE via email at protecciondatos@fcirce.es. You are also entitled to lodge a complaint with the Spanish Data Protection Agency. You will find more detailed information about your rights and other privacy conditions in our Privacy Policy: <http://www.fcirce.es/politica-de-privacidad-y-cookies>

- I have been informed about the treatment of my data by CIRCE and I authorize their use.
- I authorize the use of the data resulting from the completion of the surveys that, where appropriate, are sent to me by Fundación CIRCE.

Want to know more? Please visit <https://www.parity-h2020.eu/> for more information about the PARITY Project.



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2. Residential Consumers

PROFILING and PREFERENCES

This section requests generic information about composition and the building characteristics.

This is also about your preferences regarding comfort and smart devices at your working place (office buildings, petrol stations, light industry and others). We will also gather your opinion about Demand Response market participation.

Please, mark all the options that apply to you at each question. if none apply, please mark the closest to your case.

2. What is your main heating system at home?

- Individual Heat Pump
- Central Heat Pump
- District heating
- Electric radiators with heat storage
- Electric radiators or portable heaters without heat storage
- Fan Coils
- Individual Gas/ Diesel
- Individual Biomass boiler
- Central Gas/ Diesel
- Central Biomass boiler
- Other (please specify)

3. What kind of cooling system do you have at home?

- Heat Pump
- Air conditioning
- Fans
- No cooling system
- Other (please specify)

4. What is your domestic water heating system at home?

- Electric water heater with storage tank
- Electric water heater without storage tank
- Gas/ Diesel
- Biomass boiler
- Solar thermal hot water
- Other (please specify)

5. What system do you have to ventilate your home?

- Forced ventilation
- Manual ventilation
- Mixed ventilation

6. Does the dwelling have dimmable lighting?(Dimmable lighting refers to light fixtures that vary automatically according to signals from sensors or time of the day)

- Yes, all over the house
- Yes, but only in some rooms.
- No,
- I don't know

7. Does the dwelling have any smart sensors for the following features? (please, mark one or more options if needed).

- Temperature
- Humidity
- Luminance
- Air quality
- None
- Other (please specify)

8. If yes, can these sensors be monitored remotely?

- Yes, using a phone (tablet) app
- Yes, using an internet web browser
- No
- I don't know

9. Do you have an Electricity Smart Meter at home?(A Smart Meter is a meter equipped with communication capabilities and able to send instant consumption information remotely. Smart meters started to be rolled-out in the years 2010-depending of the country)

- Yes
- No
- I do not know what kind of metering I have at home.

10. Do you drive an Electric Vehicle (EV)?

- Yes, I drive a plug-in hybrid EV (PHEV).
- Yes, I drive a non plug-in hybrid EV (HEV).
- Yes, I drive a pure EV (BEV).
- Yes, I ride an electric bicycle.
- Yes, I ride an electric motorbike.
- Yes, I ride an electric scooter.
- I do not drive an EV.
- Yes, I drive other electric vehicles:

11. Have you already installed any smart home product at home? (Smart devices are those connected to internet that can be programmed and controlled remotely with an app or web browser). (please, mark one or more options if needed).

- Smart TV.
- Smart fridge
- Smart washing machine / dish washer
- Smart heating system
- Smart cooling system
- Smart windows/curtains
- Smart coffee maker/stove/oven or similar
- None
- Other (please specify)

12. If yes, can these devices be monitored and controlled remotely?

- Yes, using a phone (tablet) app
- Yes, using an internet web browser
- No
- I don't know

13. Do you have distributed energy resources (generation, storage or others) at home? (please, mark one or more options if needed).

- Solar photovoltaic system.
- Wind turbine.
- Heat and Power Co-generation.
- Storage system with batteries.
- Electric vehicle.
- Other (please specify)

14. If yes, are they controllable?

- They are non-controllable.
- Controllable locally using touchscreen or buttons in the system.
- Controllable remotely.

CONTRACTING AND CONSUMPTION

This section requests information about the energy consumption at home, and the type of supply contract / tariff that you have. If you do not know the accurate answer, please mark what you think is the closest to your case.

15. How much is your household average total electricity bill per month?

- Lower than 25€
- 25 - 50 €
- 50 - 100 €
- 100 - 150 €
- 150 - 200€
- 200 € or more,
- I do not know

16. What impact do you feel your electricity bill has on your household budget?

- very high impact
- high impact
- medium impact
- low impact
- no impact
- I do not know

17. What kind of electricity supply tariff do you have? Do you have a tariff that allows hourly discrimination? Mark as many options as needed.

- Regulated tariff (PVPC).
- Market Fixed price tariff.
- Market Variable price tariff (per hour)
- 2 period hourly discrimination tariff (usually day-time tariff, night-time tariff)
- More than 2 period hourly discrimination tariff
- I do not know.

18. Do you produce your own electricity and, if so, what is your facility nominal power?

- No
- Yes, with my own facility
- Yes, with my own facility shared with my neighbourhood or energy community

If yes, please indicate the power generated (kW)

PREFERENCES

This section is about your preferences regarding smart devices and your opinion about Demand Response and flexibility market participation. Please, mark all the options that apply to you at each question. If none apply, please mark the closest to your case.

19. Would you be interested in knowing your real-time electricity consumption? Mark all the options that apply.

- No, I do not need to access this kind of information.
- Yes, I would like to access it through a Mobile app
- Yes, I would like to access it through a Web Browser
- Yes, I would like to access it through other means (please specify)

20. If yes on the question above, what features would you like? Mark all the options that apply.

- Power consumption/generation in real time
- Energy consumption/generation statistics
- Energy cost, absolute, average and in real time
- Incentives by energy markets for flexibility
- Comfort related information (temperature, air quality, etc...)
- Home automation features (monitor consumption, remote control of specific devices, etc)
- Other (please specify)

21. How often would you like to be informed about flexibility data? Mark all the options that apply.

- On-line, on demand
- At every demand response request
- Daily
- Weekly
- Monthly
- Yearly
- Never

22. Would you like smart devices at home?

- Yes, I have some and already use them.
- Yes, I have some, but I do not usually use them.
- No, I do not like them, but I use them sometimes.
- No, I do not like them and never use them.
- I do not have an opinion to this respect.
- Other (please specify)

23. Would you be willing to automatize your most significant electric devices, to save some energy and be able to monitor and control them remotely?

- Strongly willing
- Willing
- Slightly willing
- Unwilling
- Undecided

24. Are you making savings in your electricity bill by shifting the use of electrical devices at home from expensive peak hours to cheaper off-peak hours (e.g. day-time to night-time)?

- I already make full use of it.
- Yes, but my savings are low and I would like to increase them.
- No, but I would like to benefit from this possibility.
- No, because I have a fixed hourly electricity tariff.
- No, because real savings are really low.
- No, because I have little chance to shift electricity consumptions to cheaper hours.
- No, I am not interested.

25. Are you willing to participate in and benefit from demand flexibility markets without affecting your comfort at home?

- Yes, if there is a sufficient remuneration.
- No, I am not willing to change my consumption patterns at any time.
- No, I do not trust external companies accessing my consumption profile and taking control of my home devices remotely.
- No, I am just not interested at all.
- I do not know and I have no opinion on this.

Aggregator contract

This section requests information about the contract agreed with the aggregator or others to set flexibility and other characteristics.

26. Would you agree that your aggregator monitors and operates your electric devices automatically, without affecting your comfort, so you can provide services to the grid and receive remuneration? Please tell us how willing you would be to allow this for each of the applicable devices below:

	Strongly agree	Agree	Slightly agree	Don't agree	Undecided
Electric Heating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electric Cooling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electric Hot water supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dimmable lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electric vehicle charging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy storage systems (batteries)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Do you feel comfortable granting access to your personal and consumption data? Mark all the options that apply.

- Yes, always
- Only if the contract is GDPR compliant
- Only if specific non-disclosure clause is included in the contract
- Only for aggregation purposes
- Only if managed by a third party (not the aggregator)
- No
- Other (please specify)

28. What do you prefer?

- Electronic contract, signed digitally
- Physical contract (printed document)

Incentives and barriers

This section requests information about your perception of incentives and barriers to participate in explicit demand-response markets by means of a demand flexibility aggregator. Please, mark how important the given statements are for you (5 most important to 1 least important)

29. In order for you to feel more eager to participate in the demand flexibility remuneration programmes through a demand aggregator, how important are the following statements for you? (5 very important, 1 not important).

	1	2	3	4	5
Clear, transparent and consumer-protection regulations that ensure customer rights and market rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5
Full respect for private information (non-disclosure)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Full respect for comfort standards as stated by the consumer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Empowerment of small domestic consumers in electricity markets and balancing markets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fair remuneration based on transparent, clearly communicated methodologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Savings in energy bills for moving consumption from high cost periods to low cost periods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1

2

3

4

5

Contribution to the sustainability and greenness of the National and European electricity system by providing clean grid balancing solutions based on demand response, and reducing the electricity system gas emissions.

Use of high level inter-communicated smart technologies for automated control of home appliances and devices.

Contribution to electricity system sustainability by moving consumptions to higher renewable generation hours .

Other reasons. Please state:

30. Which of the following statements would make you feel more uneasy to participate in the demand flexibility markets described above, evaluate from 1 to 5 the following statements in your case. 5 most important to 1 least important.

	1	2	3	4	5
Initial investment on smart monitoring and control equipment. (200 € -300 €)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possible occasional economic penalties in case of failure to deliver the committed demand flexibility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possible misuse of personal information by third parties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial remuneration lower than initially expected.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of transparency of the contract and the remuneration.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of information about the partners (e.g. neighbours, DSO...) who participate in the flexibility market.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of control of your own energy production, distribution and selling price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5
Change in the habits of consuming and sharing energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lack of available funding to implement the changes needed for the adoption of a flexibility market.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Other reasons. Please state:

(PROFILING). Only in the case that this information is not available by other means.

This section requests generic information about domestic consumers, the household composition and the dwelling characteristics. If you do not know the answer, please select the option that you feel it describes best your case.

31. Your gender

- Female
- Male

32. Your age

- <30
- 30-44
- 45-64
- 65+

33. Your educational level

- Early childhood and primary education/ Equivalent
- Secondary education/ Equivalent
- Tertiary education/ Equivalent

34. Household composition. Please state the number of people in the household including yourself.

Children and youth under 18:	<input type="text"/>
Students:	<input type="text"/>
Employed:	<input type="text"/>
Unemployed:	<input type="text"/>
Retired and over 65	<input type="text"/>

35. Type of building you live in

- Detached house
- Semi-detached house
- Apartment building

36. In what country is your building?

- Greece
- Spain
- Cyprus
- Belgium
- Sweden
- Switzerland
- Austria
- Other (please specify)

37. Size of dwelling

- Less than 50 m²
- 50-75 m²
- 75-100 m²
- 100-150 m²
- 150-200 m²,
- More than 200 m²

38. Dwelling Tenancy regime

- Rented
- Ownership
- Usufruct

39. Building date of construction:

- Before 1970
- 1970 - 2000
- 2000 - 2010
- 2010 - present
- Do not know

40. Is your dwelling well insulated?

- Yes
- Partially:double glazing,
- Partially:wall insulation
- Partially:Roof insulation
- Partially:Doors
- No

41. Has the building ever been refurbished for energy efficiency?

- Only affecting the envelope insulation
- Only affecting the Equipment (HVAC, DHW)
- Affecting both envelope insulation and equipment.
- To include self-consumption generation systems.
- Never
- Do not know

42. Comfort temperature levels/range (degrees Celsius)?

- Winter: 18 - 21
- Winter: 20 - 22
- Winter: 21 - 23
- Winter: 23 - 25
- Summer: 20 - 22
- Summer: 21 - 23
- Summer: 23 - 25
- Summer: 24 - 28

43. Would you be willing to allow your aggregator (or others) to modify the temperature in your dwelling between your comfort temperature preferences?

- Yes, always
- Yes, but with prior explicit permission from my side
- No
- Explain your reasons, if no: