



WP I3 | ACTIVITY I3.2 | DELIVERABLE I3.2.1

**VALUE PROPOSITIONS FOR THE STAKEHOLDERS OF THE
cVPP IN THE BELGIAN CONTEXT**

PARTNER RESPONSIBLE: ENERAGENT

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Authors: Laura Van den Berghe, Jeroen Baets, Luc Meskens

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1 INTRODUCTION

This document aims to identify the value proposition for the various stakeholders of the cVPP in Gent. In collaboration with the project partners (TUE, TEA and DPL), a set of values has been defined, which forms the baseline of a quantitative research. The outcome of this research allows to tailor the design of the cVPP according to the specific needs of the stakeholders. As a result, the cVPP is more likely to succeed.

The document identifies the initial stakeholders and describes the research method that is used to identify a unique value proposition, the results found and the concluding value proposition as elaborated.

In addition to a tailor made value proposition, the success of the implementation depends on the willingness of the community to provide data and flexibility. Therefore, the efforts that members of the community are willing to make in return for the offered values, are investigated as well.

Definition of a VP

A value proposition (VP) is defined by a specific set of values which satisfy a customer's need or offer a solution to a customer's problem. Value propositions are linked to customers, products or services, an organization, business or a community, making it the cornerstone of every business model.

A definition could be:

A VP is a promise of value to be delivered, communicated, and acknowledged. It is also a belief from the customer about how value (benefit) will be delivered, experienced and acquired.

In the context of a cVPP, the VP is linked to a community of stakeholders. As acknowledged by all project partners, the VP goes beyond monetary assets and energy supply rationale. Hence, values have been categorised in five groups according to the acronym FIETS, i.e. financial, institutional, environmental, social and technical values. (Deliverable T1.2.1)

Target Groups

A cVPP is always built around a community. In Deliverable T1.2.1, a community is described as a social network of people and organisations that collectively engage in energy related initiatives and projects.

The stakeholders cVPP in Gent consist of several communities: the shareholders of EnerGent cooperative, the city of Ghent, Partner organisations, participants of the neighbourhood project Buurzame Stroom. All these stakeholders are contacted to participate in the VP research.

Within the interreg project, a cVPP will be specifically built around the Buurzame Stroom community, which is a small place-based community situated in the St Amandsberg neighbourhood in Ghent.

Yet, also the shareholder community of EnerGent has a high potential to operate as a VPP, because of its interest based network in which all members share the common interest of creating a sustainable and climate neutral society in Ghent. On a longer term and based on the research outcome, it might be interesting to create a cVPP around this community as well.

2 COMMUNITY PROFILES

2.1 STAKEHOLDERS OF THE GENT cVPP

The stakeholders of the cVPP in Gent consist of different groups, which are the shareholders, customers, sympathisants, members of the Buurzame Stroom community and of other communities related to activities and project of EnerGent. These groups, however, are not mutually exclusive, making it difficult to draw clear boundaries.

The cVPP within this project is build around the Buurzame Stroom community, located in St. Amandsberg. Yet, the other communities, and most of all EnerGent as an energy cooperative, are interesting as well for the development of other cVPP's in the future.

The research on these communities, therefor not only encompasses the Buurzame Stroom community, but also the stakeholders of the EnerGent energy cooperative.

Based on a sample of 241 stakeholders (both cooperants and participants of Buurzame Stroom), some statistics are drawn to approximate and describe the overall technological and demographical situation of the stakeholders.

An analysis of the current technological situation of the stakeholders is important to validate the cVPP's potential. Decentralised production units, owned by the community members are essential for a cVPP to be operational. Figure 1 shows the results. More than 50% of the stakeholders confirms to have a PV system installed, which makes a cVPP for the stakeholds more viable. Technologies like an electric boiler, heat pump and electric car allow for flexibility services. Hence, the presence of these technologies could be very useful. Fewer people possess these technologies (32% for an electric boiler, 8% for a heat pump and 6% for an electric car).

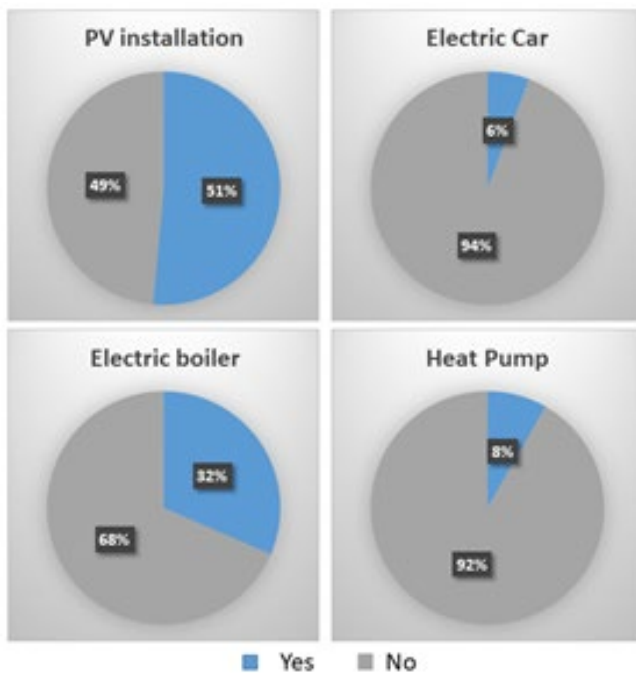


Figure 1: Technological situation

A deeper insight in the demographics allows to better understand the personal situation of the stakeholders. The results are displayed in Figure 2.

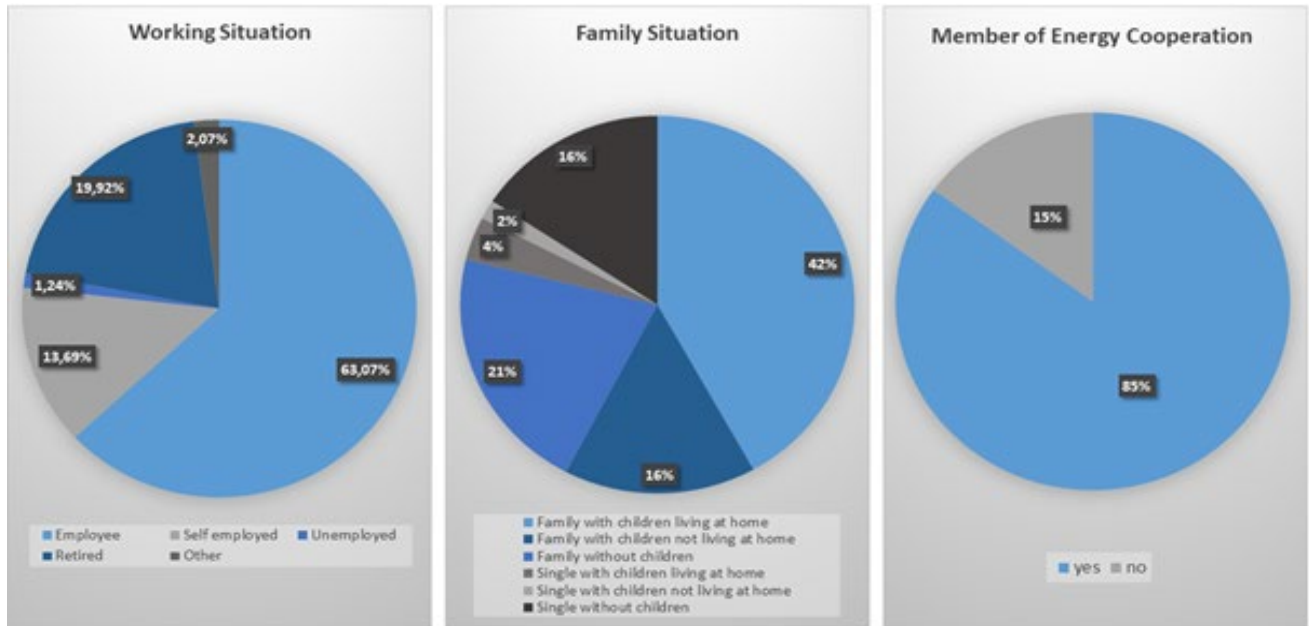


Figure 2: Demographics

Willingness to join a cVPP is analysed for different demographic groups by means of an Independent Samples t-test and an Anova test. Knowledge about possible differences in the willingness could be useful for targeting specific profiles with tailored marketing and recruitment campaigns to initiate the testing phase successfully.

Results show that the willingness to join a cVPP does not differ in function of the membership of an energy cooperation ($p = .6249$), family situation ($p = .509$) or working situation ($p = .385$). Figure 3 shows the differences within the groups, yet these are not significant.

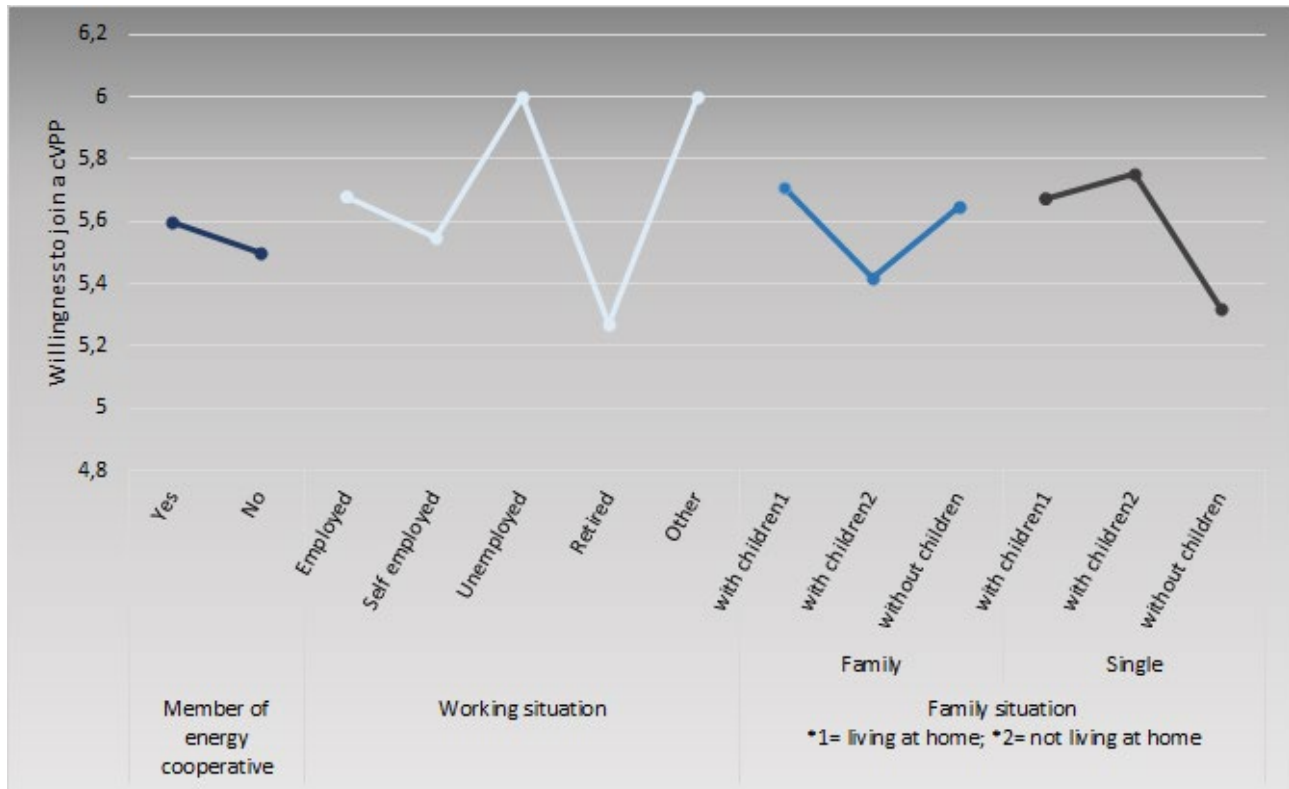


Figure 3: Willingness to join a cVPP per demographic situation

It can be concluded that demographic data of the stakeholders have no influence on the willingness to join a cVPP. All profiles are equally eager to participate, so no tailored marketing campaigns need to be developed and all the EnerGent stakeholders can be contacted for the testing. Probably willingness to join a cVPP depends on deeper characteristics, such as motivations and values instead of demographics.

2.2 BUURZAME STROOM COMMUNITY

The Buurzame Stroom community originates from a small group of local inhabitants that discovered an inefficiency in the renewable energy policy of their St. Amandsberg neighbourhood. On the one hand, they saw great potential for an outroll of photovoltaics, because of its ecological and financial benefits. On the other hand, a significant part of that potential couldn't be utilised because of unqualified rooftops and difficulties of households to bear the large investment cost. To realise this vision of PV installations for everyone, they partnered with the city of Ghent, EnerGent and other relevant organisations such as Ecopower, Eandis, UGent etc. Ever since, the project is named 'Buurzame Stroom', which is a contraction of the words 'Sustainable' (Duurzaam) and 'Neighbour' (Buur) in Dutch. The project is coordinated by EnerGent. (<http://buurzamestroom.EnerGent.be/wat-is-buurzame-stroom>)

The Buurzame Stroom community consists out of households, both tenants and owners of houses, and SME's, all located in the St. Amandsberg neighbourhood in Ghent. Within the Interreg project, a cVPP will be specifically built around this community, because of EnerGent's share in the Buurzame Stroom project and the presence of the RE infrastructure in the neighbourhood.

2.3 ENERAGENT SHAREHOLDER COMMUNITY

The shareholder community of EnerGent consists of its cooperants. By definition, they share the common vision of a sustainable and climate neutral society in Ghent. The cooperants co-fund all EnerGent investment projects (solar installations, wind mills, heat projects). On the long term, EnerGent sees value in creating a cVPP around this community as well because of the common vision, its professionalism (& capacity to organise supplementary business models) and its legal nature (a cooperative company, or cvba in Belgian law) that facilitates the roll-out of a cVPP.

3 VALUES OF THE cVPP COMMUNITIES

In this chapter, the value proposition for the EnerGent stakeholders is identified by analysing the importance of community values (resulting out of the qualitative research in collaboration with the project partners). More specifically, an answer to the research question '*Which values, offered by a cVPP, are important for a community and to what degree?*' is sought by means of a quantitative research.

3.1 RESEARCH METHOD

In a first stage, a qualitative research in collaboration with the partners is conducted to identify general stakeholder values in a cVPP project. These values are categorised according to the acronym FIETS (Deliverable T1.2.1). In a second stage, a quantitative research is conducted to verify the stakeholder values specific for the stakeholder communities of EnerGent.

Data for this quantitative research are collected by means of an online survey which was sent to all EnerGent's stakeholders (see Appendix A). The survey was implemented over three weeks (from December 14 till January 4 2019) and resulted in 241 usable responses.

The survey consisted of three major sections. First, each respondent was asked to rate the importance of the presence of 26 specific values in the decision to participate in a cVPP (see Appendix B1). All these values were measured on a 7-point Likert scale, ranging from "not important" to "very important". Second, respondents were asked to rate their willingness to offer flexibility services and provide data. Finally, demographics were measured.

As mentioned before, the stakeholder group can be divided in multiple communities and subgroups, which are not mutually exclusive. Therefore, it is difficult to analyse the specific results for the Buurzame Stroom community and the shareholder community. The variable 'membership of an energy cooperation' is used to approximate the distribution of both groups. Respondents who are a member of an energy cooperative are assumed to be shareholder, the others are assumed to be part of the Buurzame Stroom community.

All statistical analyses are executed in R (version 3.5.2).

In order to find differences in value rating between members of both communities, an Independent Samples t-test is conducted on the value categories (FIETS), allowing to compare key values. Next, a stepwise linear regression model is estimated with the general willingness to participate in a cVPP as a function of the values. The stepwise method allows to find the most optimal model as all values are stepwisely being added, analysed for their significance and deleted when not significant. As such, an optimal model is estimated including only the important values that truly influence the general willingness to join the cVPP project. But, a large number of predictors (i.e. 26 values) in the regression could cause multicollinearity problems, resulting in a bad prediction. Therefore, a factor analysis is conducted preceding the regression in order to reduce the set of values.

3.2 RESULTS OF THE cVPP COMMUNITY VALUES

The analysis is conducted in two parts. In a first part, the values *an sich* are studied. In the survey, respondents were asked to rate the importance of the presence of certain values. It is interesting to analyse the rating in function of the membership of an energy cooperation, because it allows EnerGent to identify which values are important for which communities (shareholder vs. Buurzame Stroom) and to tailor the design of the cVPP accordingly.

Results of the t-test show that there are no significant differences in the rating of financial ($p = .46$), institutional ($p=.45$), environmental ($p=.93$), technical ($p=.30$) and social values ($p=.31$) between members and nonmembers of an energy cooperation. This means that both communities rate the importance of the values similarly. Figure 4 visualises this effect.

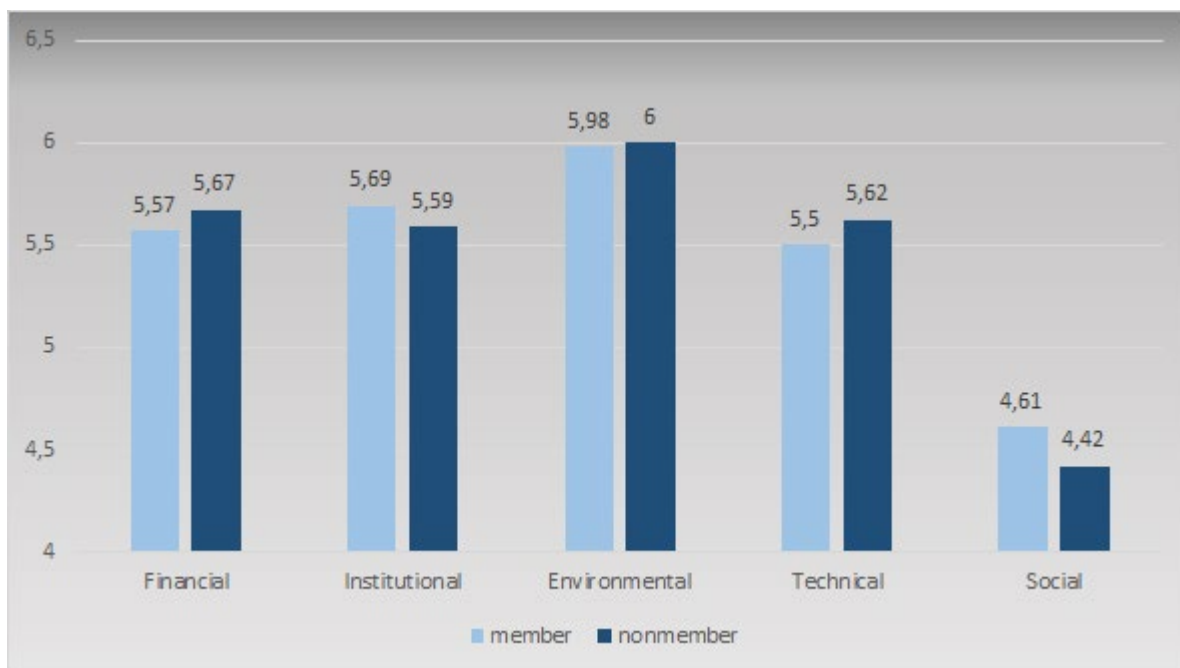


Figure 4: Average importance of the FIETS-values in function of membership of an energy cooperation

Figure 4 shows that differences in rating between groups are very small per value category. In addition, they are proven not to be significant. However, Figure 4 also shows a ranking of the value categories within the groups. Both communities rate environmental values as the most important and social values as the least important. The fact that respondents rate environmental values as highly important proves that the communities are very environmentally aware, which matches with EnerGent's mission of creating a sustainable and climate-neutral society. Shareholders rank the institutional values as second most important, whereas the Buurzame Stroom community gives this position to the financial values. In other words, shareholders relatively attach more value to a reform of the energy landscape than to financial benefits. A reason for this could lie in their entrepreneurial attitude. EnerGent shareholders are supporting innovative and sustainable initiatives, of which it is known that they are not cash cows. The projects transform the society in a more social and sustainable one. The shareholders are willing to invest their money without the need for high yearly dividends. So the mere fact that they made the choice of becoming shareholder could indicate why they value institutional values more than

financial ones. The Buurzame Stroom community, on the contrary, ranks the financial values slightly higher than the institutional ones.

In a second part, the effect of certain values on the general willingness to join a cVPP is studied, which enables estimating a prediction model of how eager people are to join a cVPP based on their motivations and needs.

The Factor analysis results in an extraction of five factors that summarize 12 values (Table 1). Results of the Cronbach's Alpha Internal Consistency analysis show that all factors are internally consistent and that they are reliable substitutes for the values. Further regression analyses are run with the reduced set of 19 values, i.e. the 5 factors, calculated as a summated scale, and the 14 remaining values.

Factor 1: Solving environmental issues (alpha = 0.85)	v11, v12, v13, v14
Factor 2: Compensating energy excesses (alpha = 0.87)	v5, v6
Factor 3: Expanding social contacts (alpha = 0.80)	v22, v23
Factor 4: Obtaining transparency (alpha = 0.75)	v20, v21
Factor 5: Being entrepreneurial (alpha = 0.72)	v7, v8

The stepwise regression analysis yields 5 significant parameters and can be formulated as follows.

$$Y = 0,22 + 0,21 * v3 - 0,16 * v4 + 0,21 * v9 + 0,16 * v10 + 0,46 * Factor1$$

with Y = General willingness to join the cVPP
 v3= Minimising costs for society to enforce the electricity grid
 v4 = Being a shareholder and earning a yearly dividend
 v9 = Actively participating in the energy market/policy
 v10 = Eliminating the dominance of big energy companies
 Factor 1 = Solving environmental issues

The model as a whole explains 34 percent of the variation in the general willingness to join the cVPP ($R^2 = 0.34$, $F(5,235) = 23.87$, $p < .001$). Results show that this general willingness is significantly associated with the value of minimising costs for society to enforce the grid ($b = 0.21$, $p < .001$), being a shareholder ($b = -0.16$, $p < 0.01$), actively participating ($b = 0.21$, $p < 0.01$), eliminating the dominance of big companies ($b = 0.15$, $p = 0.07$) and solving environmental issues ($b = 0.46$, $p < .000$). All other values seem to have no significant effect on the dependent variable. The relation between the general willingness to join the cVPP and the importance of being a shareholder is negative, meaning that when being a shareholder and earning dividends is perceived to be more important, people are less likely to join the cVPP project.

Figure 5 visualises importance x performance matrix of the analysis, in which the strength of the effect is represented in function of the average score.

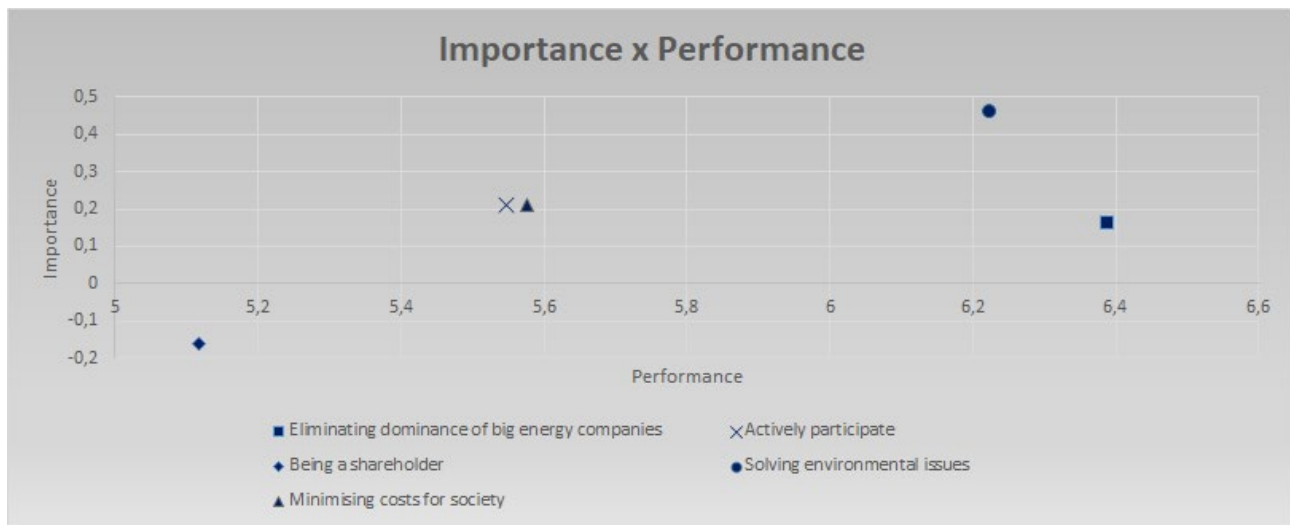


Figure 5: Importance in function of performance of the values

The x-axis represents the performance of the values, which is the average rating of the values done by the respondents. The value 'No dominance of big energy companies' (v10) received the highest score of respondents, which means that respondents find it important to see this value present in a cVPP. 'Being a shareholder' (v4) receives the lowest score (from all significant values). The y-axis visualises the level of importance, which is in other words the strength of the effect of the values on the general willingness to join a cVPP. The value 'Solving environmental issues' (Factor 1) has the strongest effect on the general willingness to join a cVPP, followed by 'Minimising costs for society' (v3), 'Actively participating in the energy market/policy' (v9), 'No dominance of big energy companies' (v10) and finally 'Being a shareholder' (v4). These values need to be considered in the abovementioned order when designing the cVPP.

'Solving environmental issues' is the most important value for people to join a cVPP and is two times more important than the other significant values. The results prove that people are very environmentally aware and that they want to support the massive outroll of RES in their neighbourhood. A cVPP then operates as the smart answer to the grid infrastructure problems that RES initiate. Other functionalities of a cVPP are much less important. When designing the cVPP it is important to keep this in mind.

'Minimising the costs for society to enforce the electricity grid' is also an important value. Remarkably similar values 'I pay lower distribution costs' (v1) and 'DSO's don't have to invoice higher costs' (v2) do not have a significant effect on the general willingness to join a cVPP. This could indicate that people attach more value to the collective than the individual level and that societal problems are being acknowledged, which is very important in the design of a cVPP. Installing a PV installation already implies a lower individual energy bill, which could explain the lower focus on this aspect in the willingness to join a cVPP. Yet, further research is needed to prove this.

Reforming the energy market and policy seem to be important as well, because of the significant effect of the values 'Actively participating in the energy market/policy' and 'No dominance of big energy companies'. The combination of these two values could indicate the need for a reform in which the cVPP takes the role of aggregator, DSO or even supplier in the energy market. Yet, by becoming a large party in the energy market with a strong power position, the cVPP could also merely be an influencer and enable a greening of the energy landscape by putting pressure on the big energy companies and the energy policy.

'Being a shareholder' and general willingness to join a cVPP are negatively correlated. The reason for this could be that when people find it important to become a shareholder and earn a dividend, they will probably invest in other, more profitable projects than in the cVPP project. That means that people understand the innovative nature of the project, which cannot be profitable at the start-up phase. EnerGent can be reassured that their community does not expect any dividends from this project.

3.3 SELECTION OF THE cVPP COMMUNITIES VALUE PROPOSITIONS

Results indicate that there are no differences in rating the values between the shareholder and the Buurzame Stroom community. Within the shareholder community, the environmental value is perceived as the most important, followed by institutional, financial and technical values and finally social values. All the differences are small though. Within the Buurzame Stroom, the environmental value is also perceived as the most important one, followed by financial, institutional and technical values and finally socially values. The differences are very small as well. The ranking could be considered in the design of the cVPP, which will, as a result, look differently for both communities. Also different marketing strategies to attract members for the cVPP could be developed because of the need to highlight different aspects of the cVPP.

'Solving environmental issues' is the most important value to join a cVPP. This value is two times more important than the other values. EnerGent should keep this in mind when designing the cVPP. Because the community really wants to achieve a CO₂ neutral neighbourhood with more RES, it is recommended that the cVPP is created locally and on a small scale. In addition, the cVPP should function as a smart solution that allows to install lots of RES without causing issues to the grid. Consequently, all other goals and services could be seen as nice-to-have instead of necessary-to-have.

Also the ability to reform the energy market and policy is important for the community. Hence, EnerGent could offer flexibility services to third parties (as a DSO, supplier, aggregator etc.), which implies an open instead of a closed design. These services serve preliminary to reform and the greening of the market, because it is not driven by the need for additional financial benefits.

4 IMPLEMENTATION

A successful implementation of the cVPP doesn't only depend on the value proposition. Also, the willingness of the community to make efforts to keep the cVPP operational is important. An operational cVPP implies the ability to balance energy supply and demand within the boundaries of the cVPP and/or offer flexibility services to third parties outside the cVPP. Therefore, private data such as quarterly energy production and consumption, peak capacity, information about installed technologies etc. needs to be provided. In addition, potential members of a cVPP need to be willing to provide some kind of flexibility as well to make the balancing possible.

4.1 COMMUNITY ENGAGEMENT TO PROVIDE DATA

Figure 6 shows the results of the analysis concerning the willingness to provide data. The figure consists out of 4 panels. In the left panels the willingness to provide data on a local level is visualised, allowing the cVPP to balance internal energy supply and demand. In the right panels, on the contrary, the willingness to provide data on a national level is displayed, enabling the cVPP to offer flexibility services to third parties and balance the national electricity grid. The upper panels visualise what kind of data people are willing to provide: all private data, private data which are anonymously processed or no data at all. The lower panels show only results for people that were initially (in the upper panels) not willing to provide private data. They were asked whether they would change their minds when a reimbursement is offered. These results can be consulted in the lower panels. The sample size is given for each panel.

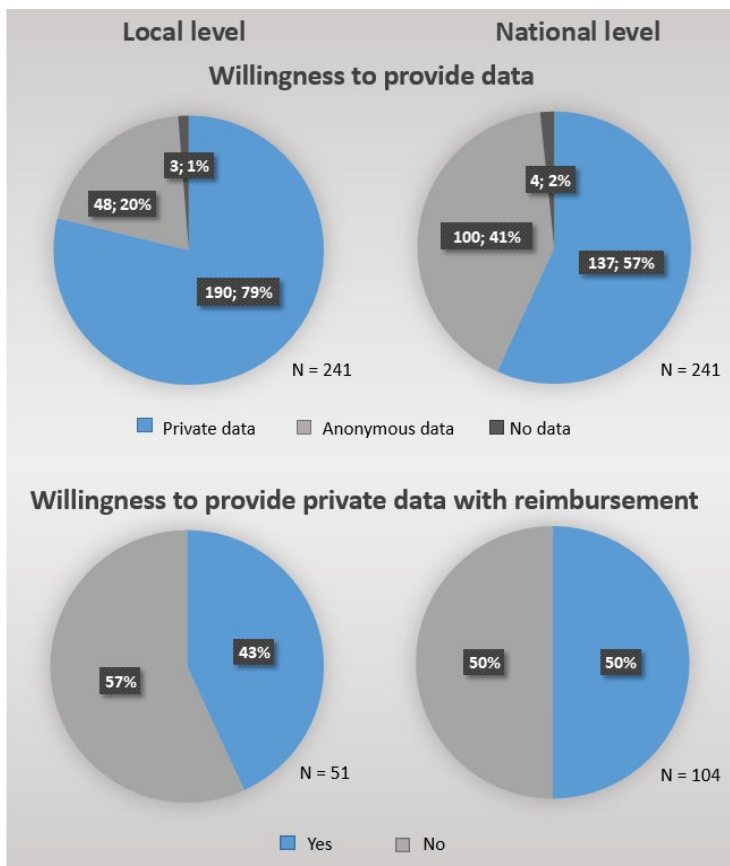


Figure 6: Willingness to provide data

Results show that the willingness to provide private data is bigger when it is only used within the boundaries of the cVPP and not used to offer services to third parties. However, a reimbursement could convince people to provide private data. Furthermore, EnerGent should investigate if the cVPP could offer flexibility services based on anonymously processed data, because the share of people who are willing to provide private data decreases when data are used on a national level instead of on a local one.

So, a sufficiently high number of people are willing to provide private data to enable the cVPP to balance internal energy supply and demand. This number decreases with about 20% when data are used outside the cVPP. Yet a reimbursement could convince people to provide private data nevertheless

4.2 COMMUNITY ENGAGEMENT TO PROVIDE FLEXIBILITY

The willingness to offer flexibility is analysed for different technologies and levels of reimbursement. Figure 7 and 8 show these results.

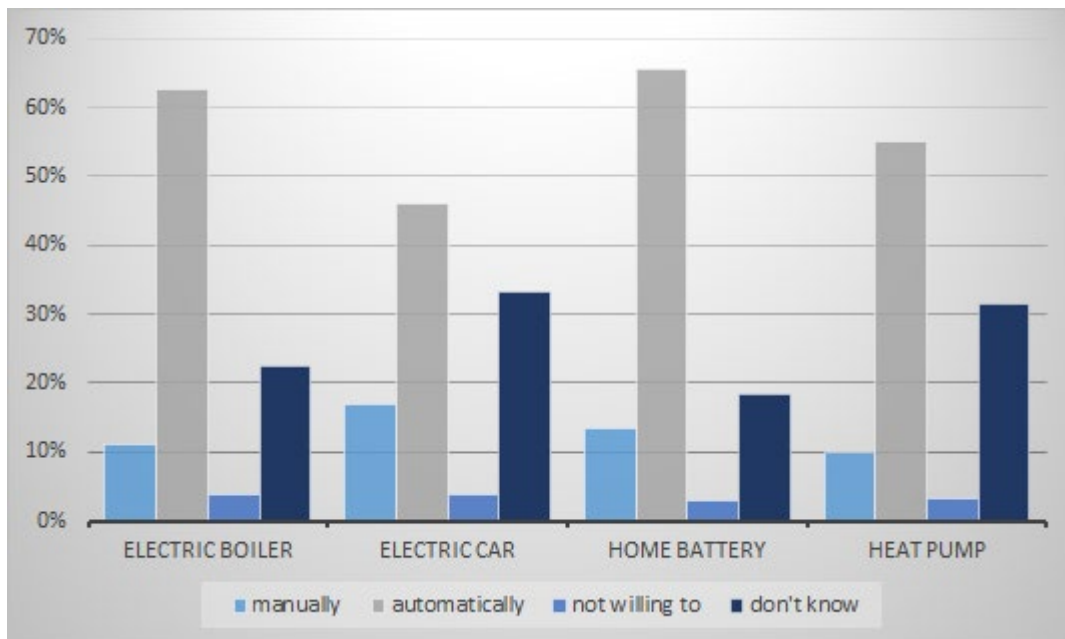


Figure 7: willingness to offer flexibility without reimbursement

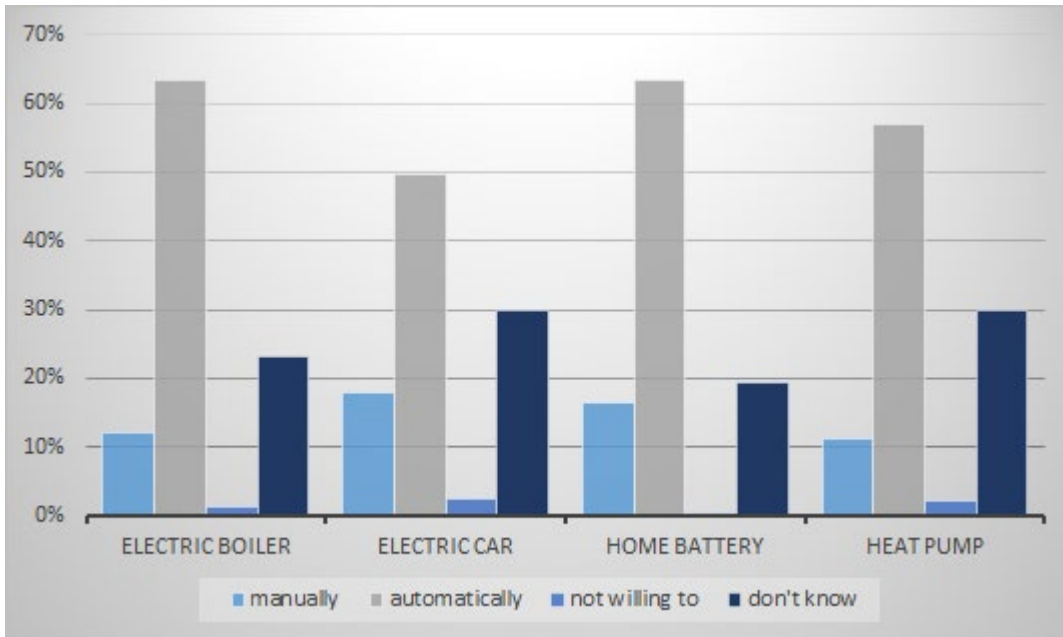


Figure 8: Willingness to offer flexibility with reimbursement

For each technology, people are most willing to offer flexibility automatically, followed by don't know, manually and finally not willing to. This applies for situations with and without reimbursement. When comparing the technologies, people are most willing to automatically load a home battery, closely followed by an electric boiler. Electric cars have the highest share of manually loading and the lowest of automatically loading. A reason could be that people want to have the full control over their car.

Also the effect of a reimbursement on the willingness to offer flexibility is analysed. Table 2 shows the results.

Degree of offering flexibility	Without reimbursement	Reimbursement
Manually activating the loading of technologies, according to the needs of the cVPP	47,1%	52,9%
Having an automatic loading of technologies, according to the needs of the cVPP (without losing any comfort)	49,6%	50,4%
Not willing to offer flexibility	68,8%	31,3%
Don't know	50,7%	49,3%

Results of the Chi² test indicate that the differences are significant on a level of 10%. Reimbursement causes a slightly higher percentage of manually/automatically loading and decreases the non-willingness to offer flexibility largely.

So, a sufficiently high number of people is prepared to offer some kind of flexibility (manually or automatically) for all technologies. A reimbursement could decrease the number of people who are not willing to offer flexibility largely.

5 ACTIVITIES OF THE COMMUNITY

5.1 GENERAL

Based on the values and capacities of the Buurzame Stroom and shareholder communities, the following target activities were distinguished:

- Facilitator role
 - Communities are empowered to install PV systems on their roofs at residential and industrial level (Advisory role versus Financer role through third party financing)
 - Communities are empowered to take energy efficiency measures.
 - Investments in local wind turbines are stimulated.

The activities, which EnerGent performs by taking the role of facilitator clearly correspond to the value the community gives to solving environmental issues. The outcome of the survey clearly indicates that the community wants to achieve a CO₂ neutral neighbourhood, which is best achieved by financially and administratively facilitating the out roll of RES.

- ESCO
 - An ESCO helps with implicit DSM services of communities.

Taking the role of an ESCO would also be beneficial for the community. The community is concerned about the societal costs of RES, which are induced by the imbalance of demand and supply. Implicit demand side management could offer an incentive to balance and to reduce societal costs, which is valued by the community.

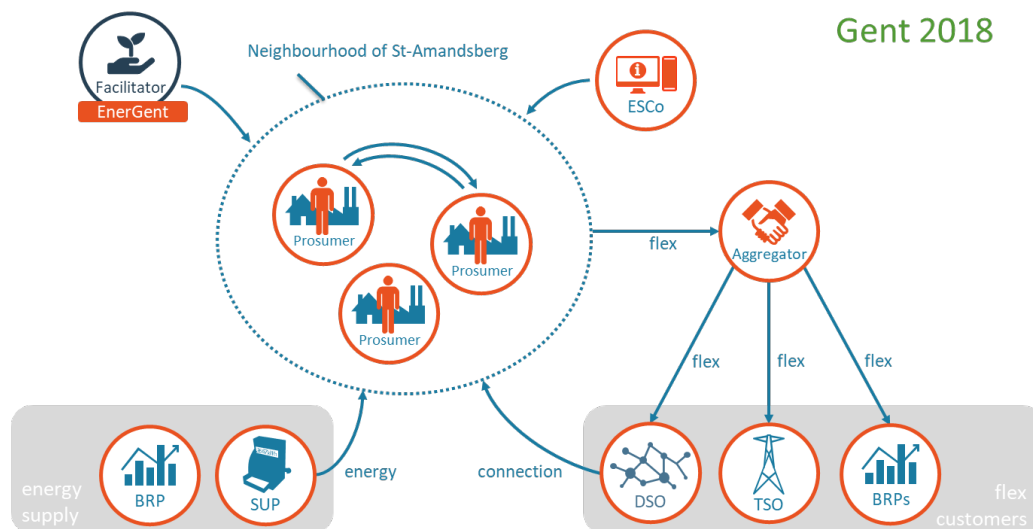
- Aggregator role
 - An aggregator helps with congestion management and explicit DSM services.

The results of the survey indicate that also the ability to reform the energy market and policy is highly valued by the community. Acting as an aggregator could help to meet this demand, because prosumer communities would become important actors in the energy market who cannot be easily neglected. Prosumers would have the chance to participate in the energy market as a fully-accepted actor, reducing the dominance of large energy firms. In addition, the explicit DSM allows to reduce societal costs.

5.2 2018 STATUS

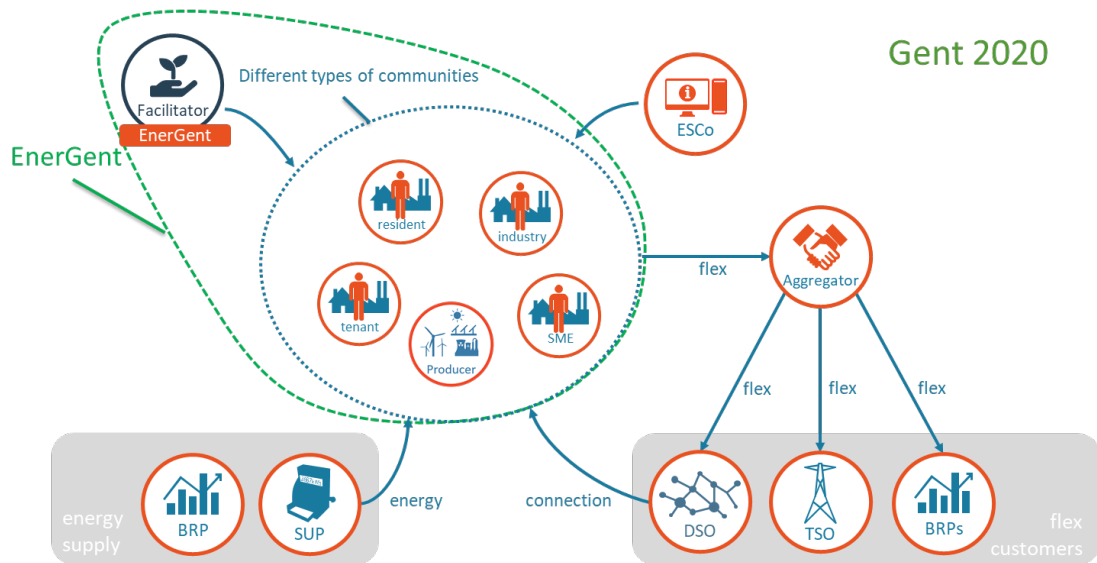
- Focus on residential and SME prosumers in the St. Amandsberg neighbourhood.
- EnerGent (as a consultant) took the facilitator role by:
 - Stimulating PV installations at residential prosumer level and for SME prosumers in the Buurzame Stroom Area

- Stimulating energy efficiency measures through the Wijkwerf project, a.o. in the Buurzame Stroom Area (<http://wijkwerf.EnerGent.be/wat-is-wijkwerf>)
- Empowering the community through knowledge sharing
- EnerGent also took the financier role through third party financing of small and larger PV plants.
- An Energy Management System (EMS) is installed to test and validate the ability of EnerGent to take the aggregator role for congestion management and the ESCO role to enable collective self-consumption and local congestion management. A viable business model has not emerged yet, because a regulatory framework that supports the opportunities of the energy transition has not yet been put in place.



5.3 2020 STATUS

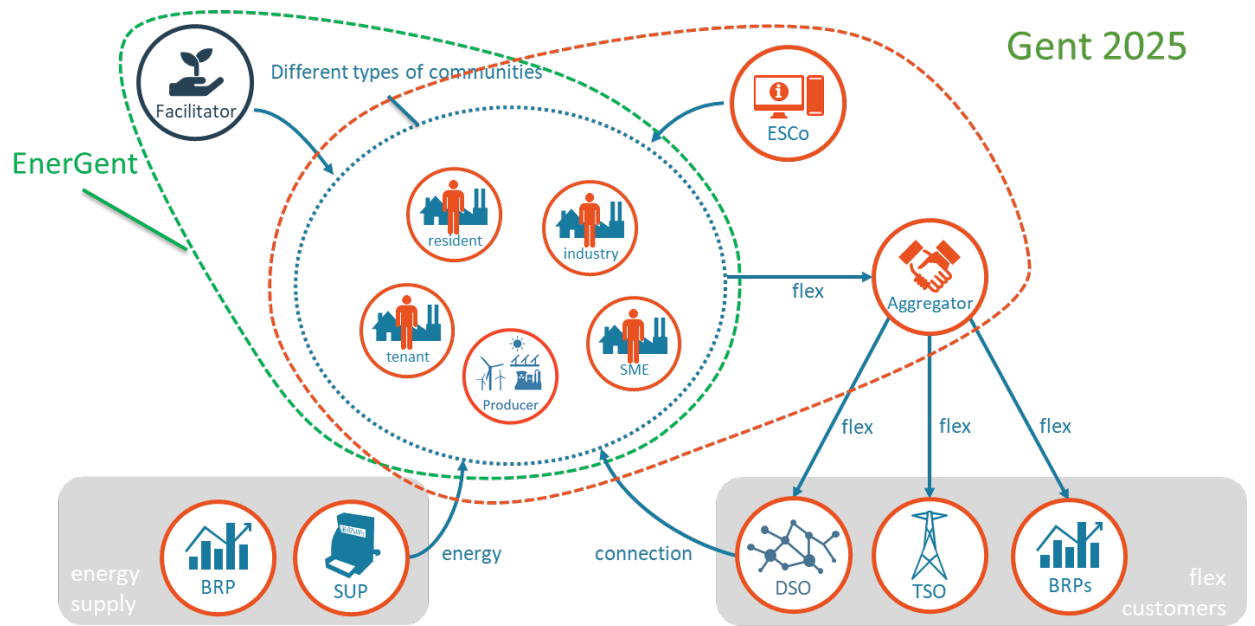
- Expanding the working area from residential and SME prosumers in the St. Amandsberg neighbourhood to most of the Gent region and serving additional customer segments such as tenants, apartments, socially weaker groups and more SME's.
- EnerGent (as an energy cooperation or as a consultant) takes the facilitator role by:
 - Stimulating PV installations at residential prosumer level and for SME prosumers to larger areas
 - Stimulating energy efficiency measures to larger areas
 - Empowering the community through knowledge sharing
- EnerGent also takes the financier role through third party financing of small and larger PV plants and new technologies like hydrogen, heat pump and large battery systems.
- EnerGent further develops the EMS system over a larger area in Gent, connecting more assets (heat pumps, more inverter brands, etc.), thereby moving closer to market roll out of cVPP systems.



5.4 2025 STATUS

- On the long term, a further development of EnerGent as an energy cooperation is aimed at.
- Different scenario's are possible.
 - It is possible that facilitators (energy cooperatives, or other private/public actors) could help the creation of cVPP such as neighbourhoods, apartments, etc.
 - Yet, through the project, it became clear that the development of a local (neighbourhood) cVPP on the long term is difficult while respecting local values and engagement. More possibilities might, in Belgium, likely exist more on the level of energy cooperatives. Cooperatives are legal and professional structure, that will more easily succeed in the deployment of new cVPP activities with respect to the FIETS-values of its cooperants. The complexity for such activities, nevertheless, might not even be possible for individual cooperatives, but rather for groups of cooperatives, such as RESCOOP or completely new cooperative structures that allow the creation of a new cVPP.

Gent 2025



6 VALUE PROPOSITION CONCLUSION

This document aimed at identifying the value proposition for stakeholders of the EnerGent cVPP, which will be built around the Buurzame Stroom community, located in the St Amandsberg neighbourhood in Ghent. In addition, the willingness to join the cVPP is studied.

The value proposition should be based on three key values. First, the cVPP should offer an environmental value, in which focus lies upon stimulating RES in the neighbourhood and making it CO2 neutral. Also the creation of a community in which climate change can be collectively fought for and in which one's impact is bigger than alone is important. Second, the value proposition should include a value that allows the reforming of the energy market and policy. Apparently, the people are not entirely pleased by the functioning of the current energy market. They want to see a market which is no longer dominated by big energy companies and their profit seeking, but is open to new parties, more conversation and sustainability matters. Finally, the cVPP should minimise costs for society. People clearly don't opt for an expansion and reinforcement of the electricity grid, which will bring high societal costs. On the contrary, they want to avoid these investments and participate in alternative solution which reforms the energy market at the same time.

For the Buurzame Stroom community it is important to highlight the environmental and financial values, whereas for the shareholder community the environmental and institutional values should be emphasized.

The value proposition and profile analysis allowed to draw a general profile of people who are interested to join the project. This profile doesn't include demographics, but motivations and interests. The profile that EnerGent should be looking for when building the cVPP consists of people who are environmentally aware and who want to see a transformation of the current energy market. Furthermore, if EnerGent would know the value profile of potential members, it could predict the willingness to join the project. In that way, potential members can be easily looked for.

A sufficient number of people is prepared to provide data and offer flexibility such that the cVPP can be operational. Despite these efforts, people are eager to join the cVPP project, which increases the success rate.

The value proposition identified in this report enables the development of the whole business model of the EnerGent cVPP. Yet, future research is still needed to link the values proposition to possible activities, roles, the earning model etc. in such a way that a perfect, though realistic, fit is created.

7 APPENDICES

Appendix A. Survey

Project: Een Virtuele Energiecentrale op Gemeenschapsniveau in de stad Gent

Pagina 1

De voorbije jaren is het aandeel van hernieuwbare energie voor elektriciteitsproductie sterk toegenomen. Ook andere duurzame technologieën op basis van elektriciteit, zoals warmtepompen en elektrische auto's, deden hun intrede in de markt. Deze twee trends zorgen voor een grotere hoeveelheid elektriciteit van variabele aard, omwille van weersafhankelijkheid in de productie. Hier is het huidige elektriciteitsnetwerk tot nu toe onvoldoende aan aangepast, waardoor het overbelast kan geraken. Het uitbouwen van een Virtuele Energiecentrale op Gemeenschapsniveau (Community-based Virtual Powerplant in het Engels - ofwel CVPP) biedt de mogelijkheid om duurzaam om te gaan met energie zonder het elektriciteitsnetwerk te belasten.

In een CVPP worden lokale energiebronnen, zoals zonnepanelen, windturbines, batterijen, warmtepompen, elektrische auto's... met elkaar verbonden. Een controlesysteem zorgt er dan voor dat de elektriciteitsproductie en -consumptie zo goed mogelijk op elkaar afgestemd worden, zodat het netwerk in balans blijft en kabels niet overbelast worden. Naast het maatschappelijk nut, heeft een CVPP ook tal van voordelen voor de zelf-energieproducerende consument (ook wel prosumert genaamd) op sociaal, ecologisch en financieel vlak.

In deze enquête willen we peilen naar de interesse van prosumerten om zich aan te sluiten bij een CVPP. De enquête neemt een tiental minuten in beslag. Uw anonimiteit wordt verzekerd.

Alvast bedankt!
Team EnerGent.

Pagina 2

We beginnen met enkele vragen over de energiecontext bij u thuis.

Hebt u zonnepanelen? *

- ja
 nee

Hebt u een warmtepomp? *

- ja
 nee

Hebt u een elektrische auto? *

- ja
 nee

Hebt u een elektrische boiler? *

- ja
 nee

Pagina 3

Hieronder wordt het concept van een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) nogmaals omschreven. Gelieve deze omschrijving aandachtig te lezen.

In een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) worden lokale energiebronnen, zoals zonnepanelen, windturbines, batterijen, warmtepompen, elektrische auto's... met elkaar verbonden. Een controlesysteem zorgt er dan voor dat de energieproductie en -consumptie zo goed mogelijk op elkaar afgestemd worden, zodat het elektriciteitsnetwerk in balans blijft en kabels niet overbelast worden. Naast het maatschappelijk nut, heeft het verenigen van prosumenten in een CVPP ook tal van voordelen voor deze prosumenten zelf. Zo hebben zij bijvoorbeeld meer inspraak in de energiemarkt, kunnen ze zelf energiediensten aanbieden tegen een vergoeding, hebben ze een grotere impact op ecologisch vlak, kunnen ze lokaal meer energie-onafhankelijk worden... Meer details over de voordelen van een CVPP komen later in deze enquête aan bod.

In welke mate vindt u het concept, zoals hier omschreven, duidelijk? *

Heel onduidelijk

Heel duidelijk

Pagina 4

Waarom vindt u dit concept onduidelijk?

Pagina 5

Onderstaande aspecten geven in detail aan welke meerwaarde een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) voor u zou kunnen leveren. In welke mate vindt u de aanwezigheid van volgende aspecten belangrijk om deel te nemen aan een CVPP? *

	Helemaal niet belangrijk	Niet belangrijk	Eerder niet belangrijk	Neutraal	Eerder belangrijk	Belangrijk	Heel belangrijk
Ik kan mijn sociale contacten uitbreiden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik kom in contact met mensen met een gelijkaardige visie en waardenpatroon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik word aanzien als milieubewust.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik word betrokken in een gemeenschap.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kosten voor de maatschappij ter versterking van het elektriciteitsnetwerk zijn minimaal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De lokale werkgelegenheid stijgt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pagina 6

In welke mate vindt u de aanwezigheid van volgende aspecten belangrijk om deel te nemen aan een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP)? *

	Helemaal niet belangrijk	Niet belangrijk	Eerder niet belangrijk	Neutraal	Eerder belangrijk	Belangrijk	Heel belangrijk
Er worden meer hernieuwbare energiebronnen in mijn omgeving geplaatst.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn omgeving kan worden omgevormd tot een CO2 neutrale omgeving.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In een CVPP heb ik een grotere positieve impact op het milieu dan alleen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik krijg de mogelijkheid om collectief te strijden tegen de klimaatopwarming.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Het gebruik van elektrische auto's (in tegenstelling tot auto's op diesel en benzine) wordt gestimuleerd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn energieoverschotten kunnen elders in de CVPP opgevangen worden, waardoor ik er een betere prijs voor krijg dan op de markt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik kan zelf energieoverschotten binnen de CVPP opvangen, waardoor ik energie kan aankopen aan een lagere prijs dan op de markt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pagina 7

In welke mate vindt u de aanwezigheid van volgende aspecten belangrijk om deel te nemen aan een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP)? *

	Helemaal niet belangrijk	Niet belangrijk	Eerder niet belangrijk	Neutraal	Eerder belangrijk	Belangrijk	Heel belangrijk
Ik betaal lagere distributiekosten omdat de energie lokaal opgewekt en gedistribueerd wordt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Netbeheerders hoeven geen hogere distributiekosten door te rekenen aan de maatschappij om het net te versterken.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik kan aandeelhouder worden van de CVPP, waardoor ik jaarlijks een dividend krijg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben minder afhankelijk van prijsschommelingen op de nationale en globale energiemarkten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik kan meer groene stroom verbruiken voor een lagere prijs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn inkomende energiestromen zijn transparanter. Ik weet waar mijn aangekochte energie vandaan komt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mijn uitgaande energiestromen zijn transparanter. Ik weet waar mijn geproduceerde energie naartoe gaat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pagina 8

In welke mate vindt u de aanwezigheid van volgende aspecten belangrijk om deel te nemen aan een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP)? *

	Helemaal niet belangrijk	Niet belangrijk	Eerder niet belangrijk	Neutraal	Eerder belangrijk	Belangrijk	Heel belangrijk
Het deelnemen aan een CVPP laat me toe mijn kennis over de werking van de energiemarkt te verruimen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik krijg de mogelijkheid om in te stappen in een innovatief project dat de huidige energiemarkt zal hervormen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik heb meer inspraak in de energiemarkt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De energiemarkt wordt niet langer gedomineerd door energiereuzen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben minder afhankelijk van de energiebevoorrading op de energiemarkt, waardoor de kans op een black-out bij mij thuis kleiner is.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wanneer de CVPP voldoende groot is, kan ik volledig losgekoppeld worden van het elektriciteitsnet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pagina 9

In welke mate vindt u het concept van een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) interessant? *

Totaal niet interessant

Heel interessant

Pagina 10

Waarom vindt u dit concept interessant?

Pagina 11

Opdat een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) effectief elektriciteitsproductie en -consumptie op elkaar zou kunnen afstemmen, moet er enige inspanning geleverd worden door de leden. Hieronder staan 4 vereisten voor een CVPP opgesomd. Beantwoord vervolgens alle bijhorende vragen.

1. Om de lokale elektriciteitsproductie en –consumptie BINNEN de gemeenschap op elkaar af te stemmen, heeft een CVPP toegang nodig tot al uw verbruiksdata: elektriciteitsverbruik op kwartuur basis, elektriciteitsproductie op kwartuur basis, piekcapaciteit, locatie van uw woning etc. Zonder private data kan een CVPP zijn doel niet verwezenlijken. Deze data worden enkel gebruikt BINNEN de gemeenschap.

Bent u bereid de CVPP toegang te verlenen tot uw private verbruiksdata om zijn doel te verwezenlijken? *

- Ja.
- Neen, ik wens enkel anoniem verwerkte data te verschaffen.
- Neen, ik wens geen enkele data te verschaffen.

Pagina 12

Indien u een financiële vergoeding zou krijgen, zou u dan bereid zijn om de CVPP toegang te verlenen tot uw private verbruiksdata? *

- ja
- nee

Pagina 13

2. Een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) kan ook diensten leveren aan netbeheerders om de ALGEMENE elektriciteitsproductie en –consumptie op elkaar af te stemmen zodat het NATIONALE elektriciteitsnetwerk in balans blijft. Hiervoor heeft een CVPP toegang nodig tot uw verbruiksdata. Deze data worden gebruikt voor dienstverlening aan derden.

Bent u bereid de CVPP toegang te verlenen tot uw private verbruiksdata zodat er diensten aan netbeheerders geleverd kunnen worden? *

- Ja.
- Neen, ik wens enkel anoniem verwerkte data te verschaffen.
- Neen, ik wens geen enkele data te verschaffen.

Pagina 14

Indien u een financiële vergoeding zou krijgen, zou u dan bereid zijn om de CVPP toegang te verlenen tot uw private verbruiksdata? *

- ja
 nee

Pagina 15

3. Een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) streeft naar een geoptimaliseerd elektriciteitsnetwerk waarin elektriciteitsconsumptie en –productie op elk moment aan elkaar gelijk zijn. Hiervoor is er een zekere mate van flexibiliteit langs de CONSUMPTIEzijde vereist. Prosumenten worden dan ook aangespoord om hun elektriciteitsverbruik zo veel mogelijk te verschuiven naar momenten waarop de elektriciteitsproductie het hoogst is, bijvoorbeeld overdag op zonnige momenten. Dit betekent bijvoorbeeld overdag de wasmachine en droogkast laten draaien en overdag de elektrische boiler, elektrische auto en warmtepomp OPLADEN. Welke inspanning bent u bereid te leveren in volgende situaties?

U bevindt zich in een situatie van gelijkblijvende prijzen en zonder financiële vergoeding. Duid voor elke gebruiker aan welke inspanning u bereid bent te leveren. *

	Handmatig het opladen inschakelen, wanneer dit gevraagd wordt.	Automatisch laten opladen volgens noden van CVPP, Niet bereid om flexibel op te laden zonder enig comfortverlies	laden	Weet niet/ Geen mening
Elektrische auto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warmtepomp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elektrische boiler	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Batterij	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U bevindt zich nu in een situatie van variabele elektriciteitsprijzen die lager zijn overdag, waardoor u financieel beloond wordt door overdag te consumeren. Duid voor elke gebruiker aan welke inspanning u bereid bent te leveren. *

	Handmatig het opladen inschakelen, wanneer dit gevraagd wordt.	Automatisch laten opladen volgens noden van CVPP, Niet bereid om flexibel op te laden zonder enig comfortverlies	laden	Weet niet/ Geen mening
Elektrische auto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warmtepomp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elektrische boiler	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Batterij	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pagina 16

4. Een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP) vereist ook een zekere mate van flexibiliteit langs de PRODUCTIEzijde. Er wordt dan gestreefd naar een hoger elektriciteitsaanbod van hernieuwbare energiebronnen tijdens de ochtend- en avondpiekconsumptie. Dit betekent bijvoorbeeld 's morgens of 's avonds de batterij van uw elektrische auto en thuisbatterij ONTLADEN om aan de elektriciteitsvraag te voldoen. Welke inspanning bent u bereid te leveren in volgende situaties?

U bevindt zich in een situatie van gelijkblijvende prijzen en zonder financiële vergoeding. Duid voor elke technologie aan welke inspanning u bereid bent te leveren. *

	Handmatig het ontladen inschakelen, wanneer dit gevraagd wordt.	Automatisch laten ontladen volgens noden van CVPP, zonder enig comfortverlies	Niet bereid om flexibel te ontladen	Weet niet/ Geen mening
Elektrische auto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Batterij	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U bevindt zich nu in een situatie van variabele elektriciteitsprijzen die hoger zijn 's morgens en 's avonds, waardoor u financieel beloond wordt door dan elektriciteit op het net te zetten. Duid voor elke technologie aan welke inspanning u bereid bent te leveren. *

	Handmatig het ontladen inschakelen, wanneer dit gevraagd wordt.	Automatisch laten ontladen volgens noden van CVPP, zonder enig comfortverlies	Niet bereid om flexibel te ontladen	Weet niet/ Geen mening
Elektrische auto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Batterij	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pagina 17

Na het lezen van de vereiste inspanningen en de meerwaarde van een Virtuele Energiecentrale op Gemeenschapsniveau (CVPP), in welke mate bent u geneigd om u aan te sluiten bij een CVPP? *

Helemaal niet geneigd Sterk geneigd

Pagina 18

Onderstaande vragen gaan over uw persoonlijke gegevens. Graag benadrukken we nog eens dat deze gegevens anoniem verwerkt worden.

Hoe oud bent u? *

jaar

Welke van de volgende situaties beschrijft het beste uw huidige werksituatie? *

- Student
- Werkend: loontrekkende
- Werkend: zelfstandige of ondernemer
- Gepensioneerd
- Werkloos
- Andere:

Wat is uw hoogst behaalde diploma? *

- Geen
- Middelbare school
- Master
- Lagere school
- Bachelor
- Doctor

Pagina 19

Welke van de volgende situaties beschrijft het beste uw huidige gezinssituatie? *

- Alleenstaand zonder kinderen
- Gezin zonder kinderen
- Alleenstaand met thuiswonende kinderen
- Gezin met thuiswonende kinderen
- Alleenstaand zonder thuiswonende kinderen
- Gezin zonder thuiswonende kinderen

Bent u lid van een energiecoöperatie? *

- ja
- nee

Appendix B. The Value Proposition of a cVPP

Table B1: Values of Stakeholders categorised according to FIETS		
Financial values		
v1	Lower_cost_individual	I pay lower distribution costs because energy is being locally produced and distributed. (Ik betaal lagere distributiekosten omdat de energie lokaal opgewekt en gedistribueerd wordt.)
v2	Lower_cost_DSO	DSO's don't have to invoice higher costs to enforce the electricity grid. (Netbeheerders hoeven geen hogere distributiekosten door te rekenen aan de maatschappij om het net te versterken.)
v3	MinCost_society	Costs for society to enforce the electricity grid are minimised. (Kosten voor de maatschappij ter versterking van het elektriciteitsnetwerk zijn minimaal.)
v4	Shareholder	I can be a shareholder and earn a yearly dividend. (Ik kan aandeelhouder worden van de cVPP, waardoor ik jaarlijks een dividend krijg.)
v5	Compensating_my_excess	My energy excess can be compensated. (Mijn energie overschotten kunnen elders in de cVPP opgevangen worden, waardoor ik er een betere prijs voor krijg dan op de markt.)
v6	I_compensate_others'_excess	I can compensate the energy excess of others. (Ik kan zelf energie overschotten binnen de cVPP opvangen, waardoor ik energie kan aankopen aan een lagere prijs dan op de markt.)
Institutional values		
v7	Innovative_project	I can participate in an innovative project that will reform the energy market. (Ik krijg de mogelijkheid om in te stappen in een innovatief project dat de huidige energiemarkt zal hervormen.)
v8	Knowledge	I can enlarge my knowledge of the energy market. (Het deelnemen aan een cVPP laat me toe mijn kennis over de werking van de energiemarkt te

		verruimen.)
v9	Active_participation	I can actively participate in the energy market and have more decision power. (Ik heb meer inspraak in de energiemarkt.)
v10	No_dominance_big_companies	The energy market will not be dominated by large energy companies anymore. (De energiemarkt wordt niet langer gedomineerd door energiereuzen.)
Environmental values		
v11	RES_neighbourhood	More RES are being placed in my neighbourhood. (Er worden meer hernieuwbare energiebronnen in mijn omgeving geplaatst.)
v12	CO2_neutral	My neighbourhood could be CO2 neutral. (Mijn omgeving kan worden omgevormd tot een CO2 neutrale omgeving.)
v13	Large_impact	In a cVPP I have a bigger positive impact on the environment than by myself. (In een cVPP heb ik een grotere positieve impact op het milieu dan alleen.)
v14	Fight_climate_change	I get the opportunity to collectively fight climate change. (Ik krijg de mogelijkheid om collectief te strijden tegen de klimaatopwarming.)
v15	Stimulus_EC	The use of electric cars is being stimulated. (Het gebruik van elektrische auto's (in tegenstelling tot auto's op diesel en benzine) wordt gestimuleerd.)
v16	Green_power	I can buy more green power at lower costs. (Ik kan meer groene stroom verbruiken voor een lagere prijs.)
Technical values (or infrastructural)		
v17	Independent_price_changes	I am less dependent from price changes on the (inter)national energy markets. (Ik ben minder afhankelijk van prijsschommelingen op de nationale en globale energiemarkten.)

v18	Independent_supply	I am less dependent of the energy supply on the market. (Ik ben minder afhankelijk van de energiebevoorrading op de energiemarkt, waardoor de kans op een black-out bij mij thuis kleiner is.)
v19	Self_sufficient	When the cVPP is sufficiently large, communities can be completely disconnected from the grid (Wanneer de cVPP voldoende groot is, kunnen gemeenschappen volledig losgekoppeld worden van het elektriciteitsnet.)
v20	Transparency_incoming	My incoming energy flows are more transparent. (Mijn inkomende energiestromen zijn transparanter. Ik weet waar mijn aangekochte energie vandaan komt.)
v21	Transparency_outgoing	My outgoing energy flows are more transparent. (Mijn uitgaande energiestromen zijn transparanter. Ik weet waar mijn geproduceerde energie naartoe gaat.)
Social values		
v22	Expand_social_contact	I am able to expand my social contacts (Ik kan mijn sociale contacten uitbreiden.)
v23	Contact_similar_vision	I get in touch with people who have similar visions and values. (Ik kom in contact met mensen met een gelijkaardige visie en waardenpatroon.)
v24	Social_status	I am seen as environmentally aware. (Ik word aanzien als milieubewust.)
v25	Community_feeling	I am involved in a community (Ik word betrokken in een gemeenschap.)
v26	Employment	Local employment increases. (De lokale werkgelegenheid stijgt.)