



Comparison between Portuguese and Dutch pilots

System Validation

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1. Project Summary

me² is a project that represents a new market place for urban actors, in which a local community of electric vehicle (EV) users and local smart meter owners are brought together, as a community, through means of a local urban online energy monitoring platform. The combination of these technologies in a community allows to integrate mobility with electricity, to balance the grid, to reduce electricity costs, and to enable a feeling of local belonging. me² enables urban demand-side management, i.e. aims at modifying consumer demand for energy, promoting less energy use during peak hours in an urban community. The project applies the technical and academic state of the art regarding smart grids, electric mobility, business models and policy incentives to the development of an innovative service concept, which is validated and optimized in two practical pilots and demonstrations in urban communities in Amsterdam and Lisbon.

The project me² pursues an integrated perspective on urban mobility and electricity with the following overall objective:

During the me² project timeframe, a web platform will be created to store and perform analytics on energy data retrieved by integrated smart sensors (home, EV, PV...), and smartly display this info on web and App dashboards for information to users and decision making by managers, with the final objective of promoting behaviour change and improving energy efficiency.

To test me² integrated system, 2 pilots are foreseen, one in Lisbon and a second in Amsterdam.

The first one, in Lisbon, will allow for the evaluation of the system in different dimensions: methodological (try out different approaches to end users, creation of digital communities, test communication options...); technological (test and debug me² software developments, integrate hardware and software components...); sociological (test different incentive methods, evaluate reaction to different types of tools and info packages...).

The second one, in Amsterdam, will benefit from the methodological, technical and sociological learning in the first one, and will tune the concepts paving the way towards the creation of a final product.

Document contents

This report provides a comparison of the two pilots, the used tools and the results. The two pilots were carried out consecutively at different stages of the me² platform development and thus show how the system validation was reached in several steps.

The report refers extensively to two other documents, the Lisbon pilot deliverable and the Dutch pilot deliverable. In addition, references are made to the analysis of smart meter data collected in the pilot, as reported in a separate document. All three documents are available at the project website and document repository.

2. Communities Characterization

The Lisbon community, as mentioned in the Lisbon pilot deliverable, is mainly composed by municipal workers, reaching approximately 70% of the total participants, due to the call for volunteers being made via the municipality workers emails. The other 30% is composed by people with interests regarding energy and electricity thematic.

The Dutch pilot community consisted of 46 participants from mainly the Northwest of the Netherlands, with a majority living in the larger metropolitan areas. 44 households drove a Plug-In Hybrid Electric Vehicle (PHEV) or a Full Electric Vehicle (FEV), one household drove an electric motorcycle and the remaining user was a small company with a company-shared EV.

Table 1 - Participants characterization, EV and PV quantity of each pilot

	Lisbon pilot		Dutch pilot	
Nº of Users	55		46	
Nº of people per gender	30 males	25 females	45 males	1 female
Nº of EV	13		46	
Nº of PV	3		25	

These results show that the Lisbon community is balanced, regarding the number of men and women, in contrast with the Dutch community, almost entirely composed by men and just one woman.

As said, the Lisbon community was mainly focused in the municipal workers and/or EV owners, gathering as much EV's as possible, having just 13 EV's. Meanwhile, the Amsterdam community is focused in EV owners, getting just participants with EV's, which was not possible in Lisbon, due to the small number of EV's in Portugal.

Despite the geographical difference and the bigger solar potential in Lisbon, in the Lisbon community it was only possible to get 3 participants with PV, however, in the Amsterdam community, along with the EV's, 25 participants have PV at home.

Regarding the type of households of the participants, which represents the number of bedrooms (i.e. T2 equal to 2 bedrooms), for the Lisbon pilot, it is shown in the following table.

Table 2 - Number of households per type of household in the Lisbon pilot

Type of household	Nº of households (Lisbon pilot)
T1	4
T2	10
T3	18
T4	17
T5	4
T6	0
T7	1

These results show that the most types of households in the Lisbon pilot is T2, T3 and T4, as for the Dutch pilot a different information was collected.

The average number of people living in the type of households of the participants, for the Lisbon pilot, is shown in the following table.

Table 3 - Average number of people per type of household in the Lisbon pilot

Type of household	Average nº of people per type (Lisbon pilot)
T1	1,8
T2	3,1
T3	3,2
T4	3,8
T5	3,5
T6	0
T7	4,0

In the Lisbon pilot, despite the difference in the type of households, the average number of people per type is balanced between 3 and 4 people per house. Just except for the type T1, which in average have less people living per household.

Regarding the Dutch Pilot, the number of occupants per household is presented in the following table.

Table 4 - Number of people per household in the Dutch pilot

Nº of people per household	Nº of cases (Dutch pilot)
1 occupant	1
2 occupants	17
3 occupants	3
4 occupants	9
5 occupants	7

In the Dutch pilot, most of the households participating in the pilot had two or more occupants, with an average of 3 occupants. There was one exception, which was the small company participating in the pilot, with 14 people working there.

The Lisbon pilot had the duration of 6 and half months, starting in the end of December 2016 and ending in the middle of July 2017. The Dutch pilot had the duration of 6 months, starting in September 2017 and ending in February 2018, mainly centred in EV users.

3. Methodology tool kit

A tool kit is presented with the objective to communicate with the communities, to monitor the engagement, to monitor the energy consumption, to motivate the communities, several tools were used, which there are explained in the Lisbon pilot deliverable and in the Dutch pilot deliverable. Besides the mentioned separated documents produced, it is important to have a comparison document to compare the used tools and the results, which is described in the developed topics.

Monthly semi-structured diaries

In order to obtain more feedback on the project participants' thoughts, opinions and experience, monthly questionnaires in the form of semi-structured diaries were used. The questionnaire was fixed, always with the same questions, so the me² team could monitor the evolution of people's opinions. This tool was particularly important to understand how the project was helping people's routines and to address and troubleshoot particular issues.

The questionnaires were sent to the participants in the beginning of each month, regarding the previous month period.

In the Lisbon pilot the questionnaire was composed by 22 questions and in the Dutch pilot by 19 questions.

In Lisbon, total of 5 questionnaires to each member were conducted and a total of 81 answers were obtained. For the first month, March, 20 responses were obtained, whereas for April they were 18 responses, 17 for May, 12 for June and 14 for July.

As for Amsterdam, also a total of 5 questionnaires, where 40 responses were collected, 12 for September, 15 for October, 9 for November, none for December due to not sending out the reminder email, 4 for January and 1 for February).

It was organized into 4 groups: me² related issues; me² user experience; consumption behaviour; electric equipment and vehicles.

Regarding the me² related issues, for both pilots, the most issues reported were about the communication between the Cloogy hub and the transmitter, which was the most common issue resulting in an unavailability of data. For the Lisbon pilot also, problems with the platform due to login errors which were immediately corrected, and unrealistic values were reported, different from the energy meter, which was corrected for the Dutch pilot.

As for suggestions, in both pilots were received feedback to the need of improving the user friendliness of the platform. Separately, In Lisbon suggestions were made to provide more smart plugs, requested the availability of quarter hour data, the introduction in the platform of KPI's and to tune the precision of the Cloogy, which was immediately done. In the Netherlands, another suggestion made to add a community feature, whereby users can contact each other, which was accomplished in the me² App.

Regarding the me² user experience, when the users were asked several questions, giving answers in a segmentation scale. The average results of the answers are represented in the following table.

Table 5 - Analytical data of the Monthly Semi Structured Diaries

	Lisbon	Amsterdam
Times per week		
Log into the me ² platform	1,8	1,8
Check your total energy consumption	1,8	2,1
Check a specific equipment energy consumption	1,7	1,4
Scale of 1 to 10, where 1 is very bad and 10 is very good		
Global impression of the me ² platform	6,3	5,4
Scale of 1 to 5, where 1 is totally disagree and 5 is totally agree		
Receive text messages and e-mails in a convenient time	3,6	3,6
Understand the content of the messages	4,2	4,4
The messages provide me with new information	2,9	2,1
The messages are relevant in my present domestic situation	3,0	2,1
Following the suggestions enclosed on those messages	3,3	2,4

These results show that in Lisbon users are much more preoccupied with the consumption of specific equipment, which disaggregates the total consumption and the Dutch users are significantly more interested in the total consumption. Also, that Lisbon users evaluate the me² platform in a better way, than the Dutch users. As for the messages, it is not very disparate in both pilots, however in Lisbon the users attributed more importance to the messages, than the Dutch users.

Regarding the consumption behavior, most of the users in both pilots are receptive to changing their consumption behavior. This change in consumption was in fact realized Lisbon pilot. The main reasons for change were to unplug unutilized equipment from the socket, to turn off standby equipment, to use more efficient lighting, turn the light on later and to switch to bi-tariff regimes. For those who own an EV, switched to charging at night only. As for the Dutch pilot, a common reason was charging the car at night and additionally, turning lamps off earlier.

Regarding electric equipment and vehicles, this topic had an objective just to monitor the tendency of the users, being very similar in both pilots, replacing equipment for more efficient ones, such as, fridges, heaters, ovens, microwaves and, also, a change from a diesel vehicle for an EV in the Lisbon pilot.

Problem-Centred Interviews

To obtain data needed to complement the monitoring and the semi-structured diaries concerning specific issues, problem-centred interviews were conducted.

This tool allowed to collect a descriptive and personalized opinion of each member of the community about some different topics.



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In the Lisbon pilot 31 interviews were conducted in the middle of the pilot, during May 2017 and for the Dutch pilot, 33 interviews were made in November 2017.

The Problem-Centred Interviews, were organized into four main topics for the Lisbon pilot: value proposition, design thinking, business model and finally a segmentation scale question group, and into 3 topics for the Dutch pilot, the same first three topics, excluding the 4th topic.

In Lisbon the interviews were composed by 15 questions and in Amsterdam composed by 14 questions.

Regarding the Value Proposition, for the Lisbon users, in a system that manages electricity usage, the most important was monitoring consumption, preferably per equipment and total household, in quarter-time intervals (closest to instantaneous) and to be able to access a historic data log for a comprehensive time span. The Lisbon users also mentioned they find important to have an efficient, reliable, simple, fast and user-friendly system. EV owners also mentioned the importance for this system to enable them to know their daily EV consumption. As for the Dutch pilot, the answers were not clear and significant.

Before the me², the Lisbon users mostly just checked their bills and every now and then cross-check them with the DSO reported meter readings, to learn if they needed to request any invoice corrections and some didn't check their energy consumption in any way. However, the Dutch users, in contrast, used a multitude of platforms, to gain information on their energy usage, EV charging sessions and PV production, such as website/app provided by their energy provider, monitor meter readings and bills, or a Graphical User Display at home connected to a smart meter and, also, different Home Energy Management Systems. Like in Lisbon, also in the Dutch pilot there were users that do not check their energy consumption in any way.

As for the benefits of the me², compared to the systems or procedure the participants used before, in the Lisbon pilot, it was recognized added value in the possibility to overview daily consumptions by equipment or total household, so they can discretize their spending and implement specific measures on each equipment. Which resulted in a general opinion of the me² platform not having drawbacks, except to be a bit complex. For the Dutch pilot, the benefits were of being able to check the energy usage of the appliances measured by the smart plugs, a specific group from the electric board or the EV. As drawbacks of the me², for the Dutch users, the two crucial issues were the difficulty in finding the information they are interested in and the lack of real-time feedback.

Regarding the Design Thinking, it started by getting feedback on how to better integrate the me² into the everyday lives of the participants. For the Lisbon pilot, it has been mentioned that the me² App was a helpful experience enhancer, the platform providing access to historical data was also a very positive aspect and finally suggestion for the platform and App sending more e-mails and text messages with alerts or tips. As for the Dutch pilot, the users were very cooperative, giving many suggestions, mainly in 3 different core topics: Data, Engagement and Integration. The Data for specific and individual messages, such as unusual consumption alerts that notify a user when consumption (of a specific appliance) is unreasonably high, also for the PV, showing a comparison between production and consumption, integrate suggestions for new appliances based on their data, showing the time period in which the energy efficient appliance pays itself



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back and finally having a short overview of their energy usage more easily available. The engagement in the me² could be upgraded and be more interactive with a display, while also removing the need to continuously log into the website. The Integration of the me² with other devices would be a positive aspect, for example, other smart meters.

When asking for which elements could be added, in the Lisbon pilot, 25% of the people didn't suggest any element as they were already satisfied with the offer and the other 75% suggested the aspects mentioned above. As for the Dutch pilot, the feedback was given again in 3 different core topics: Interface, Data, Hardware. For the Interface, along with the suggestions already mentioned above, a new one was the concern to the use of graphics in the App and improving the visualization of data. For the Data the suggestion made were to add also data on gas usage, weather forecasts for PV installations and an overview of national balance between energy shortage/surplus. For the Hardware suggestions included the wish for more appliances to be monitored, as well as a larger range for the smart plugs and the possibility of a connection between the Cloogy hardware and other systems.

When asking for which elements could be deleted, in the Lisbon pilot, 70% of the people had no suggestions. The remaining mentioned that the option to see multiple household entries in the platform/app is not necessary for those who only have one household, which is the case for most people. As for the Dutch pilot, more than 50% of the users did not have any suggestions regarding redundant features on the platform, but still has been mentioned the Greenpoint's as being unclear and not enticing.

Regarding the Business Model, in the Lisbon pilot, only 30% of people would pay for the installation service by some professional, with an average maximum value of €30. For the Dutch pilot, most users thought the installation was not very difficult, which means they would not be willing to pay for installation. They did, however, recognize the need for an electrician to install the Cloogy for the 'mainstream' consumer and estimating costs from €25 to €150, with €50 as the average price. As for the Cloogy, in Lisbon, half of the users would be willing to pay for the product, up to €80 in average. Others weren't interested or couldn't estimate stating they had never conducted any market research. In the Dutch pilot, the estimated price users were willing to pay for the complete package as received during the pilot was between €50, and €100.

To make the me² interesting regarding the energy savings, 60% of the Lisbon users answered with an average of €15 monthly savings or 15% total and, also, 35% of the users were receptive to sharing the savings from 3% to 100%, depending on how much time they would share. The Amsterdam users were very disparate, mentioning the me² would be interesting since residual savings, up to €20 per month or a total reduction of 5% to 10% and, also, sharing the saving from 50% up to 100%, like in Lisbon.

Regarding the Segmentation Scale, this topic was done just in the Lisbon pilot to identify how much motivated the users are about aspects as environment, financial or competitiveness, in a 7 points scale - two anchors 1 (strongly disagree) to 7 (strongly agree), presented below.

Table 6 - Segmentation scale questions of the Problem-Centred Interviews in the Lisbon pilot

Segmentation scale questions	Lisbon pilot
I am willing to change my energy consumption if it benefits the environment	6,5
I am willing to change my energy consumption if it helps me save money	6,5
I am willing to change my energy consumption if it helps me to perform better than the others	3,9
I am flexible to change my behaviours if it helps me to reduce my energy consumption	6,3

Analysing these results, it is possible to conclude that the participants of the Lisbon pilot are motivated to reduce their energy consumption to benefit the environment, to save money and to change their behaviour, although some have mentioned that it should be hard to make that change. In contrast, the participants are not motivated to perform better than the others, mainly showing no interest into compete.

Focus groups

The me² Workshop had as objective to better present the project, the new developments and to make a focus group, through the discussion in tables to gather the opinions of the participants on several subjects.

In the Lisbon pilot four main topics were addressed: me² experience, improve me² platform, Accessing the me² influence over my consuming behaviour and consumption improvement and energy saving measures implementation.

This feedback received was significantly useful to enhance the me² project and for the Dutch pilot.

As a resume of the Lisbon Focus Group, regarding the me² experience, the change from a diesel to electric vehicle and the change of the type of energy used, from natural gas to electricity, motivated the desire to monitor the total consumption, the consumption profile and the respective equipment's, including the electric vehicle. As for the accession for the me², opinions differ regarding the ease of installation of the equipment, from complete ease to many problems in the installation, such as the lack of reach of the smart sockets, installation problems of callipers and old electrical board. The average installation time, was between 5 to 15 minutes. For the participants, the me² was in general an innovative project, since no other solutions similar to the me² were known, except for a single case that knew the EDP RE:DY.

Regarding the topic Improve me² platform, initially it was possible to understand that the platform allowed many of the participants to have a better idea of their consumption, including electric vehicles and understand the preponderance of equipment in standby mode at night. However, some participants still did not realize the consumption of their equipment. As for the me² platform, in general, a slight dissatisfaction was noted regarding the me² online platform. It has been reported that it is complicated to understand and is not very intuitive in the first few uses. Some information is missing, namely only to be able to consult hourly consumptions for



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the only one day each time and not be able to see the general consumption compared to the consumptions of the plugs. Several tips were provided as functionalities such as the option to visualize hourly consumption and over an extended period, automatically identify equipment with power peaks, the option to visually check the percentage of an equipment against global consumption and notifications in case of extraordinary consumption.

Regarding the topic Accessing the me² influence over my consuming behaviour, the participants were more conscious and sensible, allowing them to identify the equipment with more consumption, that were the fridges, washing machine, refrigerator chests or a cluster made up of a toaster and water boiler, connected on the same Cloogy. In general, big electricity bill savings haven't yet been noticed and, although already existing, consumption reductions are still not significant. The me² App was also a subject that the volunteers were receptive and had a positive opinion. The usefulness of checking the consumptions during commuting times at public transport was reported. Volunteers were also receptive to the idea of commercially acquiring the me² solution and the cost benefit factor is important for the decision-making process.

Regarding the topic Consumption improvement and energy saving measures implementation, the participants mentioned measures such as substituting illumination for LED and installing power socket switches to avoid stand by equipment to consume. Rationalizing the usage of the clothes washing machine was also mentioned, with the option for more economic programs. As difficulties to reduce energy consumption, bad habits among households were mentioned, especially with children, although TV educational shows help, and off budget equipment cost could also be a difficulty, when necessary to invest. Everyone agreed that behaviour change can have an impact on the electrical consumptions, and that they could achieve some extent of saving in the electricity bill, choosing custom hourly changing electricity tariffs, when applied. As for changing the current petrol/diesel vehicle for an EV, in general, opinion is still adverse, with participants waiting for a market price reduction and an autonomy to increase. Other raised issues were living in old town centre buildings with no garage, when destination charging at work is not available, however some have highly considered a hybrid.

Due to receiving a strong feedback on the topics explored in the Lisbon Pilot and due to the Focus group of the Dutch pilot was made in the end of the pilot, it did not make sense to have equal topics, that said, a different approach was used.

In the Dutch pilot three main topics were addressed: Overview of results, Market Square and Community Challenges.

As a resume of the Amsterdam Focus Group, regarding the Overview of results were converged for the EV charging, having an excellent feedback from the participants. The reactions to this issue were positive, meaning that the participants have changed their behaviour when charging their EV, changing it to avoid peak hours period, which dictates the success of the me² in this topic. Regarding the Market Square, as a platform to gain knowledge and information about energy efficient tools and service was its most useful property. Although, they miss the Market Square provided a comparison between the products/services shown, it would be required a large effort for the Market Square. As for the home appliances, it was also mentioned that



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financial gains are not the only reason to replace or acquire new electric appliances, environmental issues are just as important, possibly more with younger generations. Regarding the Community Challenges, the participants were in general enthusiastic about communicating with like-minded fellow community members. The participants agreed that they were a difficult group to be targeted with attempts to save energy, since they were already quite proficient at doing so, which was shown in the Data Analysis.

Monitoring technology

The monitoring technology used allowed to increase the level of engagement of the communities, since they had the possibility to create knowledge about their own energy consumption and follow it in real time. To monitor the participants households and EV's of the two pilots, smart meters were provided for each participant, totalling the value of 100.

In the Lisbon pilot, the smart meters provided were composed by one hub, one clamp with a transmitter to install in the electrical board and 3 smart plugs to monitor home appliances.

The installation of the clamp in the electrical board of the Lisbon pilot members and the communication of the clamp and the 3 smart plugs with the hub was a tough task to accomplish, due to the several problems and difficulties that the Lisbon Pilot members were permanently reporting, using the defined communication channels.

In the Dutch pilot, different kits were used. Participants received one transmitter to measure the total household energy usage and one smart plug. Additionally, users received one transmitter when a private charging point or photovoltaic cells was present, with one additional smart plug for users without an EV charging point and photovoltaic cells.

Application for gamification - me² App

The me² App was launched in the end of April 2017, close to the end of the Lisbon pilot. That said, the Lisbon participants didn't had much time to experience the me² App during the pilot, even so, it was still possible to receive some feedback, as said, which were very positive, being a helpful experience enhancer. Since the participants reported that they don't always have free time to check the me² platform, the introduction of the me² App was very useful, allowing to quickly and in a simple way, to monitor the home energy consumption.

During the me² project, the me² App received several updates, which added more functionalities for the Dutch pilot.

In the Dutch pilot, aside from a general overview of the energy usage and production, users were also able to view an overview of the push notifications received, view the ranking of their pilot and search for other users.

Community Challenges

The community challenges were made only in the Dutch pilot, with the use of the me² App. Three community challenges were initiated, aimed at overall energy reduction, Greenpoints donation and postponed EV charging.

The overall energy reduction community challenge rewarded users for double the amount of Greenpoints per week whenever they achieved to reduce their total energy consumption. Since total energy reduction was hard to achieve for the Dutch pilot community, only two users signed up and only one user reduced his energy consumption and received double Greenpoints.

The donating Greenpoints community challenge allowed users to donate their Greenpoints to one of three Dutch charity donations, whereby users could give a maximum of 100 Greenpoints per user, with 10 Greenpoints worth €1. A total of 11 donations were made, worth €108.

The postponed EV charging community challenge gave users the object to postpone their EV charging sessions until after 20:00 for every day of the week. Users received 10 Greenpoints for every charging sessions successfully postponed, with a maximum of 10 Greenpoints per day. Thirteen users joined the challenge and together, they reduced their peak-hour energy consumption of their private chargers by 31,98%.

5. Communities engagement

To engage the 2 communities into the me², several aspects had to be understood. These aspects are summarized and presented below.

Detected problems

In both pilots there were problems detected which are summarized in the following table.

Table 7 - Detected problems in each pilot

	Lisbon pilot	Dutch pilot
Detected problems	Cloogy communication - problems between the hub and the transmitter due to the distance among them	
	Electricity data – unrealistic data reported by the users, due to the precision measure of the Cloogy, which was tuned and corrected	
	me ² platform – log in problems in the platform, due to errors quickly corrected	-

Interaction with the platform

The integration of the communities with the platform was made through several methods, which are listed in the following table, having almost every on in common for both pilots.

Table 8 - Interaction with the platform of each community

	Lisbon pilot	Dutch pilot
Interaction with the platform	Text messages Emails App Green points Workshops	
	-	Community challenges

System usage impact on behaviour change

The impact that the use of the system had on the behavior change, it's also in line with the "Interaction with the platform". All the incentives made, communication methods and the knowledge created by the users provided from the monitored data, as made an impact on the behaviour change. This impact has made the communities, principally the Lisbon community, much more sensible for the aspects of the energy consumption, creating a strong awareness in this thematic of smart cities, energy efficiency and mobility, in an integrated way.

Community challenges were introduced via email and participants had to sign up by replying to the email. 11 users signed up for the donating Greenpoints community challenge and 13 users signed up for the postponed EV charging community challenge. During the focus group, one user reported that the postponed EV charging community challenge made him explore ways to automatically delay the charging time of his EV.

As for the overall results of the behavior change, it is possible to conclude through the data analysis, regarding electricity consumption and electricity costs, which are listed in the following table.

Table 9 - Overall results of each pilot

Overall results	Lisbon pilot	Dutch pilot
Electricity consumption	>50% of users achieved 10% smoothed load curve	Reduction of EV charging during peak hours by more than 30%
Electricity costs	1/3 of the users could reduce more than 10% of the electricity costs, with the measures implemented, assuming dynamic prices	Despite the behaviour change, no significant differences would occur in electricity costs

Measures implemented by the participants

In both pilots there were energy efficient measures implemented, both in equipment's or in change of habits. The measures implemented are listed for each pilot in the following table.

Table 10 - Measures implemented in each pilot

	Lisbon pilot	Dutch pilot
Measures implemented	Stand-by shutdown	
	Replace lightning for a more efficient technology (LED)	
	Turn on lights later, making the most use of day light	Turn off lights earlier
	Switch to bi-tariff regimes	
	Charging EV's at night only	Charging EV's at night only
	Replacing home appliances for more efficient ones, such as fridges, heaters, ovens, microwaves, etc.	

6. Community perception and acceptance of me²

There are several differences between the two communities, already mentioned before, however it's important to reinforce, regarding the community perception and acceptance of the me² the following information's above, separated by "Value proposition" and "Business models and Willingness to buy".

Value proposition

For the Value proposition, it is important to consider that data allows people to create knowledge and to better implement measures to decrease monthly electricity costs. To resume, the important answers of the participants of both pilots, are represented in the following table.

Table 11 - Value proposition perception of each pilot

Value proposition	Lisbon pilot	Dutch pilot
Importance	Equipment's consumption	Household consumption
	Quarter-time intervals consumption	
Used procedure before me²	Meter readings and check bills	Already used to these systems
Benefits	Overviewing daily consumptions by equipment or total household	Able to check the energy usage of equipment's, a specific group from the electric board or the EV

Business models and Willingness to buy

Regarding the Business models and the Willingness to buy, from the participants of both pilots, a resume of the conclusions is presented in the following table. In the Dutch pilot, there is no information of the exact percentage of people for each topic of the table.

Table 12 - Business models and Willingness to buy of each pilot

	Lisbon pilot		Dutch pilot
Business model	30% of users would pay for installation	average maximum 30€	Not willing to pay for installation, but recognize for “mainstream” consumers an average maximum of 50€
Paying for the system	50% of users would buy the system	Maximum of 80€	Maximum of 100€
Interest on me² by energy savings	60% of users	Reducing 15€/month on electricity bill or 15%/month	Reducing since residual savings up to 20€/month or 5 to 10%/month
Sharing savings with the me²	35% of users	from 3% to 100%, depending on how much time they would continue share	Sharing savings of 50% to 100%, depending on how much time they would continue share

7. Conclusion

As a conclusion, 2 pilots were organized successfully in the scope of the me² project to achieve the System Validation.

The Lisbon pilot (phase 1) results are described in the Lisbon Pilot Deliverable, which was completed with the results of the Dutch pilot (phase 2) in a separated document. This empowered the relevance to produce the current document, which makes a comparison between the Lisbon pilot and the Dutch pilot, in a simplified way.

As for the objective of this Work Package 3, the D3.3 System Validation was accomplished successfully.