PROJECT PROPOSAL

ProSumE: Enabling Energy Prosumers Services

SUBMITTED BY: Javier Ibañez

SUBMISSION DATE: 29-09-2017

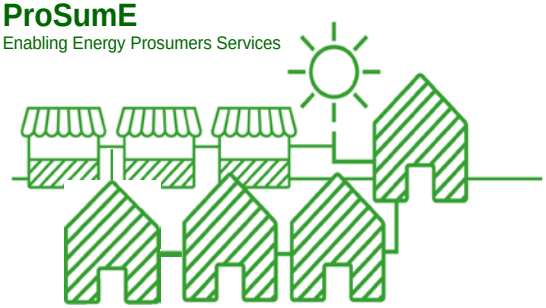
Climate-KIC is supported by the
EIT, a body of the European Union

PROJECT PROPOSAL

1 Project Details

Project Name	**ProSumE**: Enabling Energy Prosumers Services					
Project Summary	Urban transition toward decentralised renewable energy production is a key to global climate change mitigation efforts. At the city level, innovation is needed to develop local production and consumption of renewable energies (Prosumer concept). The ProsumE project will build up on a local energy innovation network to develop a transition pathway (road-map) for energy prosumers services development at the city scale with potential for local scalability and reproducibility in other European cities and abroad.					
Project Type	Ideator Pathfinder					
Theme(s)	☒ UT	☐ DMF	☐ SPS	☐ SLU	☐ EDU	☐ FLAGSHIP
Lead Partner Organisation	Las Naves, Urban Innovation Center, Valencia			Lead Partner No	P129	
Address of Lead Partner Organisation	Calle Joan Verdeguer, 21			Project Lead	Javier Ibañez	
Total Project Cost	73,375 €					
Total Funding Requested (€)	49,406 €			Total Partner Co-Funding (€)	23,968 €	
Planned Start Date	01/01/2018			Duration	6 months	

2 Purpose and Outcome

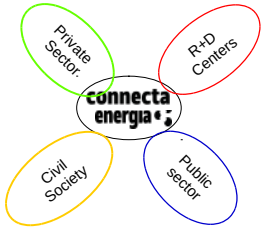
Background	At European level, the '**Clean Energy for All Europeans**' package places active consumers at the core of the Energy Union strategy, advocating the possibility for consumers to produce and sell their own electricity, individually and collectively (**Prosumer concept**). A recent study estimates that about **half of the households in Europe (around 113 millions)** may have the potential to produce energy[1], representing a large and increasing market for innovative products and services. In Spain, a recent survey revealed that **more than 1 out of 4 households** (25,3%) are considering seriously the possibility to produce and consume their own energy[2]. ProSumE Enabling Energy Prosumers Services  At the local level, the gap between the energy prosumer demand and the existing service providers call for the development of innovative prosumer oriented services to connect supply and demand. This project will provide a **roadmap for the development and scaling up of prosumer oriented services** at the city scale in Spain, which will be a basis for **replication in other urban areas in Europe**. The decrease in installation costs[3], the potential of smart technology (RES, storage, control and sensors) and the recent and forcasted development of prosumers rights to support local energy production and consumption open the way to **new business models in the energy sector**, based on the distributed energy model, regarding residential areas as a cloud of distributed sources which give rise to the new doctrine of energy prosumers. The dynamic growth of energy prosumers depends on the creation of **good partnerships between prosumers, other energy producers and actors working in the energy sector**. However, conditions still need to be put in place to enable all energy market stakeholders to reap the benefits of the growth of prosumerism. The European Economic and Social Committee suggest carrying out tests to find these solutions. Thus, this project will establish a **roadmap to develop real case studies implementation at the city scale**.

[1] The potential of energy citizens in the European Union, Delft, CE Delft, September 2016

[2] Energía colaborativa, Resumen Ejecutivo, Septiembre 2017, Greenpeace

[3] From 2008 to the second quarter of 2016, residential PV electricity system prices fell by over 80 % in most competitive markets (JRC, PV Status report, 2016)

Local innovation network connecting demand and supply:



This project proposal emerged from a local multi-actors network launched through the **Transition Cities** project, financed by Climate KIC. The Transition Cities project aimed at building an integrated innovation system for the transition to a low carbon economy through a **Transition Thinking approach**[4]. In Valencia city, this project supported the launch of a local energy innovation network ("**Connecta Energia**") bringing together local actors from the private and public sectors, but as well from the academia and the organized civil society (**"Four blades" innovation model**)[5].

One of the key innovation needs identified by the members of the network is the development of **new business models to support the local development of energy prosumers services**. This innovation network is a unique opportunity where the **supply and demand side team-up** to address a common challenge. On **the supply side**, local renewable energy service providers such as solar panel providers, energy producers (ISER renovables, Aeioluz, Avaesen, Ahinco Sostenibles) are willing to develop these services. They benefit from the support of the local administration through two municipal foundations engaged in this project, one dedicated to urban innovation, Las Naves, urban innovation center, and the other to renewable energies promotions, the Climate Change Observatory foundations. On **the demand side**, groups of active end-users are already looking for ways to become prosumers, for instance the local branch of the SOM Energia electricity cooperative counts already 1500 individual members organized to consume renewable energy. The ProsumE project aims at bridging the gap between existing supply and deman d at the city scale for prosumer services by continuing the work initiated in the Connecta Energia innovation network to focus on the **assesment and development of the prosumers service value chain.**

In terms of **climate impact**, in the city of Valencia, the CO2 emissions from electricity consumption represent 40 % of the total GHGs emissions of the city (1,1 Million of tCO2 in 2014) representing the second largest source of emission, and thus a key priority for the local authorities supporting this proposal. By supporting and implementing the roadmap to develop prosumers oriented services, Valencia city could achieve its climate mitigation target of reducing by 40 % its GHG emissions by the year 2030 and will provide **an example for replication at European level**. Results of the project will indeed be disseminated through the different **cities energy and innovation networks** at national (RECI, Spanish Smart City Network) or international level such as the Covenant of Mayors, ICLEI or Climate KIC city partners.

[4] De Vicente López, Javier and Matti, Cristian (2016). Visual toolbox for system innovation. A resource book for practitioners to map, analyze and facilitate sustainability transitions. Transitions Hub Series. Climate-KIC, Brussels 2016

[5] Fundación Las Naves, Observatori del Canvi Climatic, Ingenio-UPV, Climate KIC Transition Hub, Informe Final, Diseño colaborativo de la Red Connecta Energia, Valencia, 2017

Objectives	The main objective of the project is to foster the **activation of a local innovation cluster for prosumer oriented services development at the city scale**. Prosumer oriented services spread from the financing of the installation of the renewable energy systems to the selling of the energy produced, and can include as well the development of energy efficiency services. However, the development of prosumer oriented services is facing many barriers (Technical, Economic, Legal, Cultural, Organizational) that go beyond conventional analysis or feasibility studies and needs new collaborative and integrated approaches as the one developed in this project to bring together **knowledge, know-how and stakeholders** working at the same time on the demand and the supply chain for prosumer oriented services. The project will build up on the pioneering work of the Transition Cities project to identify innovation opportunities among cross-actors cluster and address the following challenges: • Carbon emission reductions at the city level to meet Covenant of Mayors commitment • Local business and employment activation • Sustainable financing of local energy transition • Capacity building of local energy actors The project will act as **a catalyst to foster innovation** exploring five dimensions of an energy prosumer oriented service: • **Governance:** Foster the partnership among local stakeholders to share experiences, needs and co-develop solutions **(WP1)** • **Technical:** Assess the potential of distributed renewable energy production (PV solar panel) at the city level with existing and foresight technology development **(WP2)** • **Legal:** Identify the legal context within which prosumer services could be provided and existing barriers and opportunities **(WP3)** • **Economic-Financial:** Investigate the value chain and prosumer profiles for prosumer oriented services at the local level (**WP4**) • **Socio-cultural:** Communicate about the potential and benefits of the prosumer model for the society to stimulate the demand **(WP5)** The **ultimate end-goal of the innovation** is to develop the appropriate conditions for a local **prosumer innovation "testbed"** to emerge and help identify new business models for products and services that can be further developed in urban areas. The project will follow an **open and pragmatic approach** considering different entities (either public, private or cooperative) members of the innovation network, as possible service providers and identify their advantages and inconvenient to deliver the energy prosumer oriented services or products. The type of products and service considered in this project will **explore the value chain prosumer oriented services**, from the financing of the installation of the renewable energy production systems to the generation and selling of the electricity, but as well considering demand side response and flexibility management going further than conventional market actors (ESCOs or aggregators). In order to develop a **prosumer friendly environment** and create the basis for the development of prosumer oriented services and long lasting partnerships between local stakeholders, different approaches will be considered:

- **WP1 Project Coordination and Management:** Beyond the administrative management **(A1.1)** and coordination of the project **(A 1.2)**, **three collaborative project steering committee will be established** (**A 1.3**) in synergy with the members of the Connecta Energia working group including services providers from the private sectors (not yet Climate KIC members) and potential end-users, associating thus the demand and supply side along the **development of the roadmap**. An additional **collaborative workshop will be organized to share the outcomes of the project and co-elaborate the prosumer services** roadmap among the local stakeholders **(A 1.4)**.

Lead partner: Las Naves / OCC
Duration: 6 Months

- **WP2: Screening of prosumer energy production potential** at the city scale. Providing a first **technical assessment** of the potential to supply the local electric demand through solar photovoltaic energy and a zoom on identified production "hot spots" of the city with the biggest potential for energy production to highlight business opportunity (**A2.1**). As well a first assessment of **economic and climatic benefit** of the energy "prosumption" in selected cases **(A2.2)**.

Lead partner: IIE-UPV
Duration: 4 months

- **WP3: Best Prosumer Services Practices Analysis**: to identify Best Prosummer Services Practices at the national and European scale focusing on the legal, administrative and economic drivers of their success (**A3.1 Best Prosumer Services Practices (BPSP) identification**).Then, we will investigate which form could this services take to be translated in the local context (**A3.2 BPSP adaptation**). Contribute to the definition of the road map by identifying the next step need to implement the BMPs (**A3.3 BPSP recommendations**)

Lead Partner: UV
Duration: 3 months

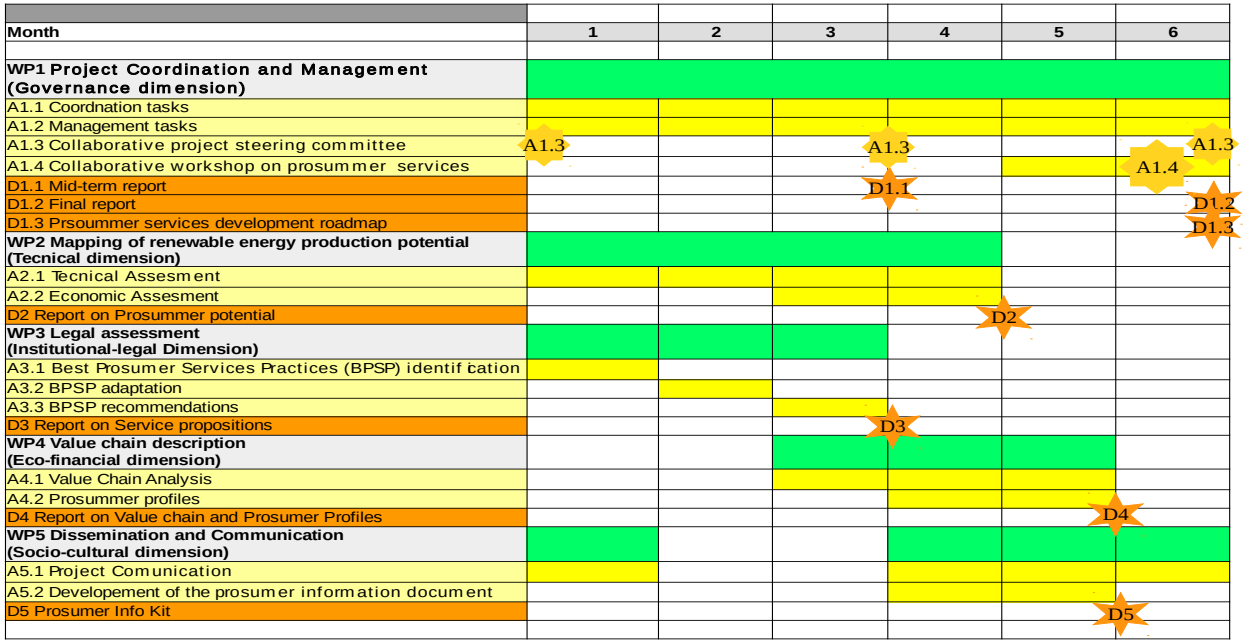
- **WP4: Value chain analysis** to characterize prosumer oriented services (identified in **A3.1**) with their costs and added value, and identify areas and activities that could be improved to foster services development **(A4.2)**. The analyses will as well highlight the main problems and obstacles prosumers face when making their transition to self-generation and self-consumption and the legal implications of selling the electricity produced back to the grid given the existing legal framework. **Prosumer profiles:** different types of potential prosumers profiles will be analyzed, considering different purchasing power capacities and different energy production models at residential or commercial level (individual model), but as well public or collective level, to quantify the different segments of the prosumer market **(A4.2).** The value chain assessment and the prosumers profiles will provide direct input to the definition of the road-map by identifying potential business unit and target prosumer groups for follow-up service development.

Lead Partner: Las Naves
Duration: 3 months

- **WP5 Dissemination and Communication:** through the communication of the project (**A 5.1**) and a **prosumer information kit** to stimulate the demand at the city scale, taking advantage of the main results of the project (**A 5.2**). The aim is to foster the engagement of potential prosumers in the learning process, targeting in priority the key actors identified in the previous stakeholders analysis performed in the Connecta Energia working group, such as building managers, neighbour's community.

Lead partner: Las Naves
Duration: 3 months

Gant Chart



Other Benefits	The potential of groups of prosumers has been acknowledged by the **European Economic and Social Committee (TEN/583-EESC-2016)** as more effective to achieve energy transition, considering that the widespread development of the prosumer concept will be an opportunity to **activate local businesses, thereby creating new jobs linked to the establishment of key facilities and services**. Thus, iinnovative prosumer oriented services will promote **social benefits, decentralized use of renewable energy sources, the reduction of network losses and inefficiencies**, as well as the development of energy storage. Prosumers will further reduce the transmission of energy, lowering their energy costs; and ensuring smaller fluctuations in supply and demand. **After the project is completed success will looks like:** **Short term perspective:** the momentum of the ProSumE project allows the **rapid implementation of the roadmap** defined to implement a "testbed" for prosumer oriented services at the city scale in Valencia. Building up on the promising results of the project, pilot **demonstrator projects are financed** to test the different services in the city where the **demand is rising**. The learning and benefits from the approach developed are acknowledged at the local and European level, and the cluster is invited to take part in European network and projects to **share the first results and develop follow-up projects**. **Mid-long term: Prosumers services are well established** in the city of Valencia, where a major part of the energy consumed is produced locally. This allows the city to achieve it GHG emissions target before the deadline of 2030 and **to lead the energy transition effort at national and European level**. The local know-how developed in the ProSumE project has allowed the development of new business activities and jobs and is now **exported to other cities** in Europe an beyond.
Country/Countries covered	Spain will be the main beneficiary of the project but other Climate KIC involved in the Climate KIC Transition Cities (Birmingham, Modena, Wroclaw, Budapest) could be interested and from a broader perspective the roadmap developed could interest any city in or outside Europe willing to make a step forward in the energy transition and/or engaged in the Covenant of Mayors.
Strategic Fit	This project is fully relevant within the "**urban transition**" thematic priorities and the effort to mitigate climate change at the city scale through a transition towards renewable energy. The urban transition priority highlights the challenge of energy supply of the city and the need to move to more sustainable zero-carbon pathways. The ProSumE Project will bring a clear contribution towards these goals and as well contribute to improve the well-being and social balance through the acknowledged benefits of the prosumer based transition in comparison to other transition pathways, ensuring sustainable funding and developing an innovative transition thinking approach. The project fits into the 2017 priorities aiming at transforming districts into Smart and Sustainable Neighbourhood through the benefit of smart grids integration and Systemic innovation, acknowledging Climate KIC as being a key partners for city and local business ecosystems development into the urban energy transitions.

3 Climate impact

(Mitigation) Baseline	Currently the city of Valencia is releasing **2,8 millions of tCO2 per year, and 40 % comes from electricity consumption**. Only a limited share of the electricity comes from renewable energy sources, mainly hydropower and wind power produced away from the city, that have to be imported with corresponding efficiency losses along the way. At the city scale emissions are slowly decreasing thanks to the development of a new sustainable mobility plan, but additional efforts needs to be done to achieve the ambitious target of the Covenant of Mayors of reducing by 40% by 2030 the emissions of the city and to face the forecasted increase in electricity consumption due to the development of electric mobility.
(Mitigation) Contribution to mitigation	The ProSumE project will enable cities to reduce GHG emissions by providing a roadmap for the development of local production and consumption of renewable energy by prosumers (mainly photovoltaic solar panel in a first step). Thus it will allow **reducing the GHG emissions**, avoiding transport losses and allowing for a more efficient demand management through the interaction among prosumers and smart grid management. In the case of the city of Valencia, the potential of GHG emissions reduction through prosumer oriented services will be further assessed during the project, but could reach a reduction of **up to 40% of the city GHG emissions**.
(Adaptation) Vulnerability	In the city of Valencia, as in many European cities, **temperatures are forecasted to increase** as well as the **frequency and duration of heat waves** (+ 20 to 50 hot days by the end of the century). At the same time **precipitation are expected to decrease** at the regional level from 10 to 40% challenging availability of water resources for the production of hydropower or the cooling of nuclear power plants. Valencia city has been for long able to cope with the constraints of the Mediterranean climate. However, the adaption to climate change impact during the coming decades will require to go further than business as usual management and will require to secure sustainable energy to supply the adaption needs (air conditioning for instance).
(Adaptation) Contribution to Adaptation	The ProSumE project will clearly support the adaptation of the city to climate change impacts by providing a roadmap for the development of a decentralized renewable energy production and consumption model at the city scale. The advantages of the decentralised energy production models in terms of adaptation are acknowledged to **improve the resilience of the city** to extreme events and to reduce the dependence from vulnerable fossil fuel centralized production systems. The decentralized smart system will be able to **balance supply and demand** at the local level and provide **more flexibility** in case of extreme heat wave of flooding for instance**.**

4 Consortium Partners (Partners who will contribute to the total cost of delivering the project. This does not include subcontracted organisations)

	Organisation's full legal name	Contact Name	Title of Contact Person	Project Role	Contact Information (Tel, Email, Address)
KIC Partner	Las Naves	Javier Ibañez	Senior Officer - Technical Team	Project leader and coordinator	C. de Joan Verdeguer, 16 46024 València T. 963 910 477 javier.ibanez@lasnaves.com
KIC Partner	Univeristat Politècnica de València	Angel Perez Navarro	Professor Head of Renewable Energy Unit	Work package leader	Camino de vera s/n. 46022. Valencia. España. Tel: +34963877007 anavarro@iie.upv.es
KIC Partner	Universitat de València	Gemma Fajardo Garcia	Professor COmercial Law	Wprkàckage leader	Av. Tarongers 46022 Valencia T. + 34 963828572 fajardo@uv.es
Other Third Parties	Fundació Observatori Canvi Climatic	Corentin GIrard	Environmental Innovation Officer	Project management and Coordination	Plaça de l'Almoina, 4 46003 València (+34) 662 570 258 corentin.girard@canviclimatic.org
Project Personnel Profile	**Javier Ibañez** is the head of the technical team at Las Naves foundation, the Innovation Center of the city of Valencia, leading many multi-annual European projects (CKIC, H2020, Life, Interreg) as the Transition Cities project. Senior expert in the development and management of urban innovation project, he will be determinant to make this project happen and ensure its scaling at the city level. **Angel Perez Navaro** is a Professor at the Energy Engineering Institute of the Technical University of Valencia, with a recognized experience on renewable energy and decentralized production of solar photovoltaic energy. He will be a key component of the team bringing its experience and the capacity of its institute to support the development of the project. **Gemma Fajardo García** is professor of commercial law at the University of Valencia, School of law. Her long experience in the legal assessment of business development will be an asset to take the next steps towards the development of prosumer oriented services. **Corentin Girard** is Environmental Innovation Officer at the Climate Change Observatory foundation of the City of Valencia, with experience on climate change innovation related project collaborating with Climate KIC in different initiatives at the local level and coordinating at the city level the local network of energy innovation, Connecta Energia.				

5 Work Plan Cost Breakdown

PART A				
		2018		
Partner Code	Activities	EIT Funding (€0.00)	Co-Funding (€0.00)	Co-Funding (%)
P219 LN	Project Management and Coordination of WP 1,4,5	23,531.25	7,843.75	25%
P066 UPV	WP 2	16,500	5,500	25%
P165 UV	WP3	9,375	3,125	25%
OCC	Supporting WP1, 4 and 5		7,500	100%
Total		**49,406.25**	23,968,75	33%

6 Cost Category per Partner

Partner Code: P129 LasNaves	**PART A**	
Category	**Cost Explanations**	**Total Cost (2018)**
(a) Direct Personnel	Project Management and Coordination of WP 1,4,5	9,600
(b) Travel and Subsistence		0.00
(c) Equipment	Communication campaign and workshop logistic	0.00
(d) Other Goods and Services		3,500.00
Indirect Costs (25% of the total sum of items a, b c, and d, above)		3,275.00
Sub Contracting	Study on value chain and prosumer profiles (WP3)	15,000.00
Financial Support to 3rd Parties (inc prizes)		0.00
Total Project Cost (Total of all items above) *Co-funding plus EIT request=Total Project Cost		**31,375.00**
Co-Funding		7.843,75
EIT Request (Total project cost minus Co-funding)		23,531.25

Partner Code: P066 UPV	PART A	
Category	**Cost Explanations**	**Total Cost (2018)**
(a) Direct Personnel	Coordination and work of WP2	17,600.00
Indirect Costs (25% of the total sum of items a, b c, and d, above)		4,400.00
Total Project Cost (Total of all items above) *Co-funding plus EIT request=Total Project Cost		**22,000.00**
Co-Funding		5,500.00
EIT Request (Total project cost minus Co-funding)		16,500.00

Partner Code: P165 UV	PART A	
Category	**Cost Explanations**	**Total Cost (2018)**
(a) Direct Personnel	Coordination and work of WP3	10,000.00
Indirect Costs (25% of the total sum of items a, b c, and d, above)		2,500.00
Total Project Cost (Total of all items above) *Co-funding plus EIT request=Total Project Cost		**12,500.00**
Co-Funding		3,125.00
EIT Request (Total project cost minus Co-funding)		9,375.00

Partner Code: Third Party (OCC)	PART A	
Category	**Cost Explanations**	**Total Cost (2018)**
(a) Direct Personnel	Support in Coordination and work of WP1,4,5	6,000.00
Indirect Costs (25% of the total sum of items a, b c, and d, above)		1,500.00
Total Project Cost (Total of all items above) *Co-funding plus EIT request=Total Project Cost		**7,500.00**
Co-Funding		7,500.00
EIT Request (Total project cost minus Co-funding)		0.00

7 Outputs

Name of output	Description of Output	Year
Prosumer cluster (O1)	The collaborative nature of the project and synergies with the local innovation network will foster the development of prosumers services at the city scale by connecting the supply and demand side into **a prosumer cluster**.	1
Case for prosumer oriented services (O2)	The studies and analysis performed during the project will provide convincing element to **make the case for prosumer oriented services** at the local level in terms of economic benefits and GHG emission reduction.	1
Prosumer demand raising (O3)	The information kit provided by the project will **stimulate the demand** towards renewable energy and prosumers services from the rest of the society and allow the co-creation and dissemination of knowledge at the local level	1
Prosumer services development pathway (O4)	The project will develop a replicable method to lay the ground for innovative service development by identifying the pre-conditions needed to ensure **prosumers group's take-off** at the city scale in a way that can be reproduced in other European cities and follow-up collaborative projects.	1

8 Deliverables

Deliverable Name	Related Output	Description of Deliverable	Year
D1.1 Midterm report	O1	Report detailing the initial progress and first results obtained, Suggesting a first structure of the roadmap and final report	1
D1.2 Final report	O1	Report summarizing the different activities and results of the project	1
D1.3 Prosumer services development roadmap	O4	Road-map identifying the next step to further develop prosumer services in the city after the end of the project	1
D2 Prosummer potential analysis	O2	Report describing the analysis of the technical potential for prosumer production and first economic analysis	1
D3 Service propositions	O4, O2	Report identifying possible prosumer services and the way they can be develop in the local legal and administrative context	1
D4 Value chain and Prosumer Profiles	O4, O2	Report describing the value chain of prosumer services and identifying prosumers profiles	1
D5 Prosumer Info Kit	O3	Information document on the outcomes of the project to disseminate the potential of energy prosumers	1

9 EIT Core KPIs

KPI Code and name	Target #	Year
EITN03 # Products (goods or services) or processes launched on the market	In this case we consider that this KPI could be achieved not during the duration of the project but within three years after the completion. As a first target we hope at least 1 new prosumer oriented service could be launched, but this should be clarified at the end of the project.	+3

10 Climate KIC Core KPIs

KPI Code and name	Target #	Year
CKIC02 # Innovation Opportunities identified	We hope at least one innovation opportunity to be identified during the year of the project in therms of innovative prosumer service. The evidence would be to collect by the end of the project a signed statements or equivalent from a potential customers (once the prosumer profiles will be defined) expressing support for the innovation as addressing a need.	1

11 Risks

Title	Impact Description	Risk Probability	Mitigation Plan	Owner	Target Date
Access to data at local level	Availability of data at the city scale to estimate the energy production potential and the demand at a detailed level could delay on the assessment of WP2	Medium	Start earlier the data collection process, realize assumption in case data are not available	LN and UPV as WP2 leader	After the first month of the project
Legal framework	Uncertainty about support schemes and unstable legal and administrative frameworks. Modification of the legal context within which prosumers services could develop through the new Spanish energy transition law	Medium	Consider the existing legislation as a basis, and taking into account the need to implement European legislation related to energy prosumers	LN and UV as WP3 leader	By the end of the project

12 Disclosure & Confidentiality

Project proposals are reviewed in confidence by Climate-KIC staff and parties acting on its behalf. In cases where a proposal could facilitate the implementation of a similar type project and facilitate match-making, Climate KIC may share the proposal with other partners and the public.

If you would prefer your proposal not to be shared, please indicate by ticking the check box. ☐

Has this proposal been submitted to Climate-KIC in the past 2 years in response to a call for proposals?

☐ Yes X No (If Yes please state the name of the proposal and data it was submitted)

_____

Do you have any EU funded project currently underway or pending approval, that is closely aligned to this proposal?

☐ Yes X No (If yes state the funding source and why you need funding from Climate KIC)

_____

16 Signature

I confirm that all relevant information has been submitted and content for this proposal to be considered by Climate KIC.

(An original signature is required from the authorised representative of the Lead Partner and Climate-KIC assumes that all project participants have been advised and have consented to the terms of this form and that this single Lead Partner acts as the duly authorised agent on behalf of the others during the proposal submission and review process. Please note that any false information in this form will lead to disqualification of the proposal)

Name of person acting on behalf of lead partner organisation: Roberto Jaramillo, Vice-Presidente Fundación Las Naves

www.lasnaves.com NIF G98406002
roberto.jaramillo@lasnaves.es | 46024 Valencia | Tel. (+34) 96 391 04 77

Signature on behalf of lead partner organisation

LAS NAVES
CENTRE D'INNOVACIÓ

Date 29/09/2017