Fonds Régional de Développement Européen
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ICE
INTELLIGENT COMMUNITY ENERGY

Interreg
France (Channel Manche) England

EUROPEAN UNION

ICE REPORT N°2.8.3

BEST PRACTICE REPORT

13/12/2022

Pôle Mer Bretagne Atlantique

About ICE

Supported by Interreg VA France (Channel) England, the Intelligent Community Energy (ICE) project, aims to design and implement innovative smart energy solutions for isolated territories in the Channel area. Islands and isolated communities face unique energy challenges. Many islands have no connection to wider electricity distribution systems and are dependent on imported energy supplies, typically fossil fuel driven. The energy systems that isolated communities depend on tend to be less reliable, more expensive and have more associated greenhouse gas (GHG) emissions than mainland grid systems. In response to these problems, the ICE project considers the entire energy cycle, from production to consumption, and integrates new and established technologies in order to deliver innovative energy system solutions. These solutions will be implemented and tested at our unique pilot demonstration sites (Ushant island and the University of East Anglia's campus), to demonstrate their feasibility and to develop a general model for isolated smart energy systems elsewhere. The ICE consortium brings together researcher and business support organisations in France and the UK, and engagement with SMEs will support project rollout and promote European cooperation.

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1. Introduction

A best practice is a practice that has been proven to work well and produce good results and is therefore recommended as a model. It is a successful experience, which has been tested and validated, which has been repeated and deserves to be shared to be adopted by others.

In this deliverable, ICE partners have identified the best practices applied throughout the project. these Best Practices were selected according to several criteria, namely:

- **Effective and successful:**
  A “best practice” has proven its strategic relevance as the most effective way in achieving aspecific objective; it has been successfully adopted and has had a positive impact..
- **Environmentally, economically and socially sustainable:**
  A “best practice” meets current needs without compromising the ability to address future needs.
- **Technically feasible:**
  Technical feasibility is the basis of a “best practice”. It is easy to learn and to implement.
- **Inherently participatory:**
  Participatory approaches are essential as they support a joint sense of ownership of decisionsand actions.
- **best and adaptable:**
  A “good practice” should have the potential for replication and should therefore be adaptableto similar objectives in varying situations.

2. The ICE General Methodology (GM) offers islands a method to devising their own route to achieving higher penetrations of renewable energy

22/11/2022

George Jr. Matthew, Oscar Fitch-Roy, Peter Connor, Bridget Woodman, Philipp Thies, Essam Hussain, Hisham Mahmood, Mohammad Abusara, Victor Kouloumpis, Xiaoyu Yan, Jon Hardwick, Helen C M Smith, Etienne Bailey, Patrick Devine-Wright, Phedeas Stephanides, Jérémie Bazin, Jonathan Williams, Konstantinos Chalvatzis

Element	Guiding questions
Project	*The General Methodology was Task T2.1 of WP 2.*
Introduction	*Islands represent a separate case study from mainland applications when it comes to electrical generation and consumption. They are often supplied via diesel generation of electricity, implying high cost, a dependence on imports and carbon emissions per unit that do not lower with mainland efforts to decarbonise. These higher cost s are borne directly by islanders or socialised elsewhere. Renewable Energy, with their declining costs, offers an opportunity to*
Location /geographical coverage	*The General Methodology (GM) has been applied on Ouessant, Molène, Chausey (all France) and Lund and the Iles of Scilly (both UK).*
Stakeholders and Partners	*The GM enable islands and particularly their inhabitants to consider their own potential for shifting some or all of their own energy consumption to low carbon methods. This has the potential to reduce costs for the islands, contribute to enhanced security of supply, protect the inhabitants from international price volatility and reduce carbon emissions associated with using fossil fuels for energy production. The GM places a particular emphasis on involving all stakeholders, but especially the island community themselves, placing them at the heart of decision making.*
Methodological Approach	*The ICE methodology draws on the experiences and usage of several methods, perhaps most notably Integrated Resource Planning (IRP). IRP is a well-known and established method of electricity system planning used by electricity utilities globally since the 1980s as a transparent and participatory planning process for their electricity systems. IRP can make planning more open and can help identify pathways along which an electricity system may achieve future goals. IRP has been shown to be applicable in smart energy transitions on islands, where a whole-systems approach is particularly valuable.* *The core of the IRP process is a series of steps, laid u I document T2.1.2. Similar to the IRP process is an approach based on a readily available framework within which communities can organize energy transitions. This approach utilises a so-called 'action-oriented playbook' (AOP) to serve as a guide for the successful initiation, planning, and completion of a transition to an energy system that primarily relies on local resource. The AOP approach is project-oriented and includes a constructive dialogue together with resources and lessons learned from smart energy transition efforts undertaken by other communities. The process is intended to be participatory but this process was limited by both access constraints on Ushant, and by the lockdowns which emerged*

Success Factors	*Any island could aim to apply the GM, though it is likely to make more sense to do it on an island without a direct grid connection to another landmass with excess power, for example, as with our island case studies and their respective mainlands. Taking island communities along on the development process is likely to be essential.*
Constraints	*The application of the GM was limited by access to the islanders, this largely arose from the problems with Covid, although there were also restrictions in terms of being asked to limit contact in some locations due to ongoing work.*
Lessons learned	*One key lesson was that the absence of interaction with a community will limit what conclusions can be drawn, and limits the buy-in from islanders. This is likely to have implications for any real world application where islands are looking to develop applied solutions. However, in this case we would also expect to see better access be enabled due to the applied rather than theoretical nature.*
Validation	*There were no substantive failures in applying the GM to the additional islands, given the constraints of the process (primarily access to islanders). We kept a record of the issues arising from this application on each island.* *It also became apparent that there were substantial differences emerging from the current regulation of island energy systems. The limits arising from comparing French and UK systems were very apparent. The socialised nature of costs in the French system changed the motivators for a switch, since consumers would not personally benefit from cost savings. On the other hand, they provided a potential motivation to engage with heat pumps, since that could impact substantially on heat costs by improving efficiency by 66-75%. This is a key area for further research.* *Review of the project also suggested we should have given fuller consideration to heat from the beginning. Decarbonising heat offers substantial potential for energy, cost and carbon saving. Electrification is a meaningful option from a technical perspective, and offers system benefits to islands depending on their current mode for meeting heat demand. It may not always be supportable from a cost perspective, given the high capital cost of installation and other issues such as geology and geography will impact on the best choice of device.*
Sustainability	*As noted, the overarching regulatory architectures can throw up issues in that they are created for mainland energy supply and the particular circumstances on islands may make them a poor fit, and have attendant unplanned complications. Planners need to account or this. Ideally, national governments would create regulation which meets the specific needs of the islands, but this is typically beyond the influence of the island and certainly of this project.*
Replicability and/or up-scaling	*We do not see any reason that the GM could not be applied more widely. We would advise that it makes most sense where the island is not connected to a larger grid from another land mass. Obviously, some renewable energy potential is necessary. Islands with low potential, or with high population density, may be limited in what fraction of their generation may realistically be drawn from renewables. This however is worth investigating rather than assuming.*
Conclusion	*The GM represents a applied method, rooted in the theory, but aiming to be a practical tool which can be used as a structured approach to consider the potential for shifting an island electricity supply to be wholly or partially met from low carbon renewable energy sources.*
Contact details	*Peter Connor, University of Exeter, P.M.Connor@exeter.ac.uk*
Related resources that have been developed	*The GM is a stand-alone document (T2.1.2), a separate literature review (T2.1.1) can be added for readers who want to give greater consideration to the literature which we used to justify the method. We have presented on our approach at a number of conferences, and we have produced journal and conference articles which build on some aspects of the work. These are available on request.*

3. Launching a Call for Projects to identify smart energy solutions in isolated territories

20/07/2022

Oumayma AIRIAU, Anaïs Turpault

Element	Guiding questions
Project	*Within the framework of the WP T2 of the ICE project, which aims to design a business model for the energy transition of isolated territories, PMBA has launched a Call for Projects for French SME's in order to develop innovative smart energy projects in favor of isolated territories.* *PMBA is leading on the WPT2: "Designing a Business Model for the energy transition of isolated territories", using smarter energy systems, integrating low carbon electricity generation and demand reduction, all while promoting employment support labor mobility and enhancing competitiveness of SME's.*
Introduction	*It is in this context that PMBA launched a call for projects allowing both to identify innovative solutions to achieve the project's objectives, as well as to allow SMEs to benefit from European funds to develop their projects.* *The Call for Projects was open for a month, but the overall process (launching, awarding, implementation, reporting) lasted about 6 months.*
Location /geographical coverage	***Project area***
Stakeholders and Partners	*The main target group of this CfP is **SME's**. this action involved two ICE partners: PMBA (lead), and BDI, a representative of an isolated area from SMILO (Small Islands Organization) and an expert in energy transition from SDEF (The Departmental Syndicate of Energy and Equipment of Finistère) who were part of the selection committee.*
Methodological Approach	*Prior to launching the Call for Projects, PMBA has first launched a Call for Expression of Interest (CEI), which made it possible to identify 26 compagnies likely to provide innovative solutions to isolated territories.* *This first (CEI) phase also helped promoting the ICE project and its goal to these compagnies. Which likely had an influence on the responses to the Call for Projects.* *For the Call for projects itself. a specific methodology has been set upstream, in particular for the final choice of winning projects:* • ***Predefine eligible project types:*** *which made it possible to target only projects that could contribute to the achievement of the ICE project's objectives;* • ***Predefine the eligible duration and budget of the projects:*** *setting a reasonable budget and duration for eligible projects made it possible to follow up the realization of the winning projects (during the partnership), but also to support several projects;* • ***The multidisciplinary nature of the members of the selection committee:*** *the difference in profiles allowed a complete evaluation of the various proposed projects;* • ***Offer funding to winning projects:*** *allowed to remove the barrier of funding (often representing a constraint for SME's), and bring out smart innovative projects;* • ***Predefine selection criteria:*** *establishing clear specific criteria as well as a scoring system allowed the selection committee to assess all the important aspects in a promising project.*

Impact	*This best practice has actively contributed to achieve the main goal of the ICE project: "Developing innovative smart energy solutions for isolated territories". Also, this Call for Projects has helped boosting the transferability aspect of approaches.*
Success Factors	• *The main goal must respond to a common issue;* • *Stakeholders awareness of the targeted issue;* • *Good knowledge of the current situation of the territory in question, but also the potential of setting up the desired projects (via an inventory/ diagnosis);* • *Data availability;* • *Ensure the existence of competent SMEs in the targeted territory, capable of offering good quality projects;* • *Be accompanied by experts, capable of judging the relevance and feasibility of potential projects;* • *Dedicate budget.*
Constraints	• *Find companies that meet a specific territorial need;* • *Have the necessary budget to support the selected projects;* • *implementation time in line with project duration.*
Lessons learned	• *there are many SMEs capable of responding to the energy problem of isolated territories;* • *Access to finance is one of the most important issues that compagnies in general, especially SMEs can face;*
Sustainability	• *Ensure the availability of necessary funds;* • *Target specific issues, but common to several territories to ensure the duplicability of results;* • *Be accompanied by experts, to ensure the correct selection of projects;* • *Ensure continuous monitoring until the realization of the selected projects.*
Replicability and/or up-scaling	*This best practice was **developed with the intention of being transferable**.* *In fact, such an approach can be applied locally and adapted to any non-interconnected territory that aspires to locally manage its energy (from production to consumption) using innovative smart energy solutions.*
Conclusion	***This approach was a key step in the ICE project. It helped identifying relevant innovative projects, that contributed to the achievement of the main goal of the project.*** ***It also allowed to include local SMEs in a European cooperation, allowing them to access to finance and to value their projects in a much wider scale.*** ***This also helped bringing into light smart innovative responses to actual issues, already pointed by isolated territories.***
Contact details	*Pôle Mer Bretagne Atlantique* *Anaïs Turpault* ***anaïs.turpault@polemer-ba.com***
Related resources that have been developed	*2.6.2 Awarding projects presentation* *Annexes:* *1-Specifications* *2-Submission document* *3-Scoring system*

4. IOT Infrastructure deployment in public buildings- Ushant

November 2020 **Gwendal Vonk**

Element	Guiding questions
Project	*The implementation of an IoT infrastructure at Ushant was one action from the WP3 "Pilot Site Experimentation". This action on Ushant represents the first bricks of the Finistère Smart Connect project, promoted by the SDEF, which aims to offer smartgrid services for rural and small towns in the Finistère, France.*
Introduction	*Smartgrid infrastructures are, a priori, intended for territories with significant needs in terms of communications, analyzes, services which therefore require significant infrastructures and financial resources ... and therefore smartgrid technologies seem to be reserved for large cities and agglomerations.* *However, the ambition of the Finistère Smart Connect project is to offer the isolated areas of Finistère these same communications, analysis and service actions for municipalities and areas of small size and / or little or poorly served by technical communication solutions.* *With the collection of information concerning energy consumption, and environmental measurements (temperature, occupancy, humidity, CO_2), it will be possible to establish energy and occupancy balances of buildings, which will therefore make it possible to quantify potential energy savings and to put in place an action plan such as, for example, the rationalization of the operation of radiators, or the implementation of building renovation actions.*
Location /geographical coverage	*This action has been deployed on the Ushant Island and on the cities of the "Communauté de Communes du Pays d'Iroise – CCPI" territory.* *This first step allows to learn how to deploy such infrastructure, and it led to further deployment on other territories of the Finistère.*
Stakeholders and Partners	*The main beneficiaries and users are the SDEF and the cities equipped.* *The information collected by the sensors, and the collection of data and their automatically analysis provide direct information on the use of buildings, and the potential of energy savings, mainly based on heating savings.*
Methodological Approach	*The methodology applied is the one presented in the deliverable L.3.1.1 "DESIGN OF INTERVENTIONS AND TECHNICAL SOLUTIONS."* *A first analysis of publics buildings showed a miss use of heating, which either was always on, or had to be manually controlled, which led to lack of comfort, since temperature in buildings were too cold in the morning.* *The implementation of IoT technologies aimed to performed automated and continuous analysis of buildings, for municipalities to take charge of their buildings use.* *The display of data with automatically generated graphics helped municipalities to rapidly understand where priority actions had to be made on their buildings.*

Impact	*This infrastructure allows to increase the information about energy consumption for municipalities. It also led to energy savings for buildings, from 10% to 48%. Finally, this infrastructure will be replicate on municipalities on the continent, from the return of experience gained on Ushant.*
Success Factors	*This infrastructure mainly provides information to buildings users or owners. The main factor is communication and concertation when deploying the infrastructure, to ensure a good appropriation of the tool by the local agent.*
Constraints	*Since isolated territories are by definition isolated, the main constraints were the organization of the implementation which includes sending the equipment to the islands, planning the intervention with the technical staff. This needs a preparation sufficiently ahead in order to anticipate at most.*
Lessons learned	*This sensor infrastructure makes it possible to collect a large amount of data, over long periods, which allows cross-analyzes between energy and comfort in buildings. This action shows the technical feasibility of a smartgrid development for isolated and small territories.*
Sustainability	*The sustainability of the solution remains in a good preparation with the local staff that will use the equipement, as well as a good design of the solution that suits the territory (amount of antennas, number of buildings equipped, what type of sensors in each buildings…).*
Replicability and/or up-scaling	*Based on the return of experience from the test in Ushant, the solution is being replicated on other territories in the Finistère Département, France.* *Prior analyses have to be made for each territory to assess the needs and the best settings for the solution to be deployed.*
Conclusion	*Regarding smart grid experiments in Ouessant, we were able to show that from a technical point of view the solutions proposed meet the specifications initially planned.*
Contact details	*Syndicat Départemental d'Energie et d'Equipement* *9 allée Sully, 29000 Quimper, France* *Gwendal Vonk* Gwendal.vonk@sdef.fr
Related resources that have been developed	*The methodology applied for the implementation on Ushant is the one described in deliverable L.3.1.1.* *The description of the infrastrcutre is available in deliverable L.3.2.1.* *Results of the infrastructure is available in deliverable L.3.4.1*

5. Techniques for rapid assessment of marine energy at isolated community sites

14/12/22

Prof. Ian Bailey

Dr Gina Kallis

Element	Guiding questions
Project	*Which work package is concerned by the best practice? What is the context that led to this practice* **The activity described formed part of work package 3: The development of people and place-centred approaches to community engagement and renewable energy development for island communities.**
Introduction	*What is the context (initial situation) and challenge being addressed? Provide a short description of the best practice being addressed and specify the period during which the practice has been carried out (timeframe)?* ***Island communities are important foci for developing low-carbon energy both to meet residents' energy needs and to contribute strategic decarbonisation and energy security goals. However, ensuring that developments progress these goals, best practice community engagement techniques are needed to ensure that local communities receive accurate and timely information and are empowered in decision-making processes, and that energy developments are appropriate to the context of the areas in which they are located. By analysing community engagement processes from across the world and selected Channel/Manche islands, developers, local authorities and communities have access to state-of-the-art knowledge on the design and running of community engagement processes on sustainable energy transitions.***
Location /geographical coverage	*What is the geographical range where the good practice has been used?* *If possible, add a map to show where the practice was implemented.* ***In the Channel/Manch area (Guernsey, Alderney, Ushant) and islands in other geographical contexts.***
Stakeholders and Partners	*Who are the beneficiaries or the target group of the best practice? Who are the users of the best practice? Who are the institutions, partners, implementing agencies, involved in the best practice, and what is the nature of their involvement?* ***Beneficiaries include the inhabitants of island and isolated communities, renewable energy developers and advocacy groups, and local authorities. Users of the best practice are island and isolated community target groups including local councils; planning authorities; funding bodies; investors in and researchers of renewable energy and sustainable development; environmental organisations; current residents and businesses.*** ***This best practice can be instigated by any one or combination of these groups at any time and can be adapted to the needs of individual islands and isolated communities.***

Methodological Approach	*What methodology has been used in order to address the initial issue and lead to a successful outcome and finally to the best practice? What was the process and in which way it was a participatory process?* *How long did it take to learn lessons and identify key success factors?* ***The methodology used was to undertake two major literature reviews. The first analysed academic work on experiences with community engagement on energy transitions from around the world. The second examined renewable energy project studies and engagement on three Channel/Manche region islands, Ouessant, Alderney and Guernsey. Their purpose was to understand the types of energy project proposed, the engagement techniques used, the influence of community engagement on decision-making, and good and bad practices that can inform the design of future energy transition consultations. The two analyses has led to the development of recommendations for future energy transition consultations published as deliverables and dissemination of these to a global audience through an academic article in Energy Research and Social Science.*** ***The process was participatory through discussions with local government energy teams in some of the islands involved in the analyses (Alderney, Shetland, Orkney, Scillies).*** ***Development of the best practice to this stage has taken the duration of this component of the project, but is now available to ICE participants and members of island communities from around the world.***
Validation	*Confirmation that the practice addresses the needs properly. Has the best practice been validated with the stakeholders/final users?* ***The practice already draws upon experiences from over 20 island communities, so is validated in the sense that it connects their experiences in an integrated analysis while simultaneously stressing and being flexible enough to be adapted to the needs of different island communities and types of energy transition initiative.***

Impact	*What has been the impact (positive or negative) of this best practice.* ***The impact of the best practice will continue to emerge as academics and practitioners in the renewable energy sector engage with the research. The academic article has received 19 citations in its first year of publication and records 64 reads and multiple Tweets according to the publisher web site. We are also in discussions with the Alderney Energy Team for the further roll-out of the community engagement practices in 2023 to help address its energy challenges.***
Success Factors	*What are the conditions (institutional, economic, social, and environmental) that need to be in place for the good practice to be successfully replicated (ina similar context)?* ***It would be useful to get the approaches published. The tidal approach in particular is novel, but to reach its full intended impact it needs to be in the public domain.***
Constraints	*What are the challenges encountered in applying the best practice? How have they been addressed?* ***There are no inherent constraints to applying the best practice principles of community engagement. However, challenges do exist in some areas:*** ***1) Persuading developers, local government and planning authorities to invest sufficient time in potentially lengthy and expensive community engagement processes.*** ***2) The work has shown that some communities are more willing than others to engage with new practices, especially where these emanate from outside the island or isolated community in question. Ensuring broad participation by members of communities is also often challenging because of lack of interest, mistrust of external actors and processes, or concerns by community members that they lack the technical or other forms of expertise to contribute to engagement exercises.*** ***3) Even consultation processes that employ best practice techniques cannot guarantee universal community and stakeholder acceptance of outcomes or processes. Challenges lie in how disputes over the types, scales and location of energy projects are mediated to ensure that communities do not become divided and that all parties believe they have gained benefits from the initiation of an energy transition project.***
Lessons learned	*What are the key messages and lessons learned to take away from the best practice experience?* ***The key message is that it is imperative, both for the success and acceptance of energy transition initiatives and the well-being of the communities involved, that community engagement plays a prominent role in decision-making and is designed and managed in ways that ensure different views are invited and considered.***
Sustainability	*What are the elements that need to be put into place for the best practice to be institutionally, socially, economically and environmentally sustainable?* ***This best practice promotes social, environmental, and economic sustainability by working to ensure that energy transition initiatives deliver tangible benefits to the areas involved and their inhabitants while ensuring that key elements of the local environment are safeguarded rather than being sacrificed to generate low-carbon energy.*** ***For these benefits to be achieved, the lessons for the best practice analyses need to be disseminated/ published and used, and examples documented to enable their adaptation and application in different geographical settings and for different technology types, leading to refinement of the engagement methods. The creation of community engagement showcases that provide living examples of how renewable energy can achieve social benefits as well as economic and low-carbon***

	energy gains will help to engage more island and isolated communities with energy transitions while simultaneously embedding new approaches to community engagement among project developers and local governments.
Replicability and/or up-scaling	*What are the possibilities of extending the best practice more widely? Whatare the conditions that should be met/respected to ensure that the best practice is replicated, but adapted to the new context?* ***There are multiple possibilities to extend the best practice more widely through the publications noted above and the identification of additional islands and isolated communities where energy transitions are planned. This creates possibilities for the structured co-design of energy initiatives that combine the application of technologies to exploit identified renewable energy resources with community engagement best practices at their centre.*** ***At the same time, the island case studies and the experiences from Ouessant and the UEA campus demonstrate that no two island or isolated communities are identical. Best practice community engagement cannot be replicated exactly, therefore, but its core principles of beginning engagement with understanding community strengths and concerns rather than with pre-decided technological solutions, and then utilising upstream, representative, two-way, varied and empowering engagement techniques can help to achieve beneficial and broadly accepted energy transitions while allowing continuous learning on the adaptation of techniques to different geographical contexts.***
Conclusion	*Conclude specifying/explaining the impact and usefulness of the best practice..* ***The analyses and best practices developed enable local governments, planning authorities, renewable energy developers, communities and stakeholders to devise and organize community engagement processes that promote energy projects that are appropriate to the scale and contexts of the island and isolated communities for which they are proposed, putting people and places at the heart of sustainable energy transitions.***
Contact details	*Structure details* *Contact details (email address)* ***ibailey@plymouth.ac.uk***
Related resources that have been developed	*What deliverable, output, presentation, guidelines, have been created and developed as a result of identifying the best practice?* ***Deliverable T3.5.1 and the earlier literature review on community engagement have been created to disseminate the best practice. This has been supplemented by publication of a journal article in Energy Research and Social Science, a leading international journal on energy issues with an impact factor of 8.514 and an H-Index of 76.***

6. Consumer engagement

[3/11/2022] **[Konstantinos Chalvatzis]**

Element	Guiding questions
Project	*Within the framework of the WP T5 and the specifically the Activity T5.1 of the ICE project, which focuses on Consumer Engagement at the UEA Campus.* *UEA is leading on WPT5.1: "Community Engagement at UEA".*
Introduction	*This is about ways to engage the academic community of the University of East Anglia with issues around their energy consumption on campus. The challenge has been on understanding the status quo of a very diverse student population, who are all coming from different cultural backgrounds, ethnicity, household practices and wealth and as a result have varying motivations and understanding of energy issues. It has been implemented during 2017-2020.*
Location /geographical coverage	*The practice has been applied at the University of East Anglia campus.*
Stakeholders and Partners	*The best practice has benefitted the students, the University of East Anglia and ICE project partners. Throughout the process ICE project partners such as the Universities of Plymouth, the University of Exeter and SDEF have contributed to this work.*
Methodological Approach	*Taking into account the diversity of the targeted population has required a mixed methods approach to encourage participation. This included the following actions:* 1. *Survey. An extensive survey has been used to allow for a large number of participants to respond to questions regarding their understanding* 2. *Participants' focus groups. These small focus groups allowed for the detailed examination of issues that have come up during the survey and enabled a more interactive analysis of consumer engagement with innovative low carbon energy technologies.* *Most importantly, this approach demonstrated the need for reflexive and adaptable methods that can accommodate the characteristics of the targeted population.*
Validation	*By design the best practice has engaged its stakeholders to contribute their input on ways of engagement and further steps with the implementation of low carbon energy technologies.*

Impact	*The positive impact of the study has been that it enabled the participating student population to engage in a deep and meaningful way with issues of energy consumption and low carbon energy technologies. The University has also benefitted by gaining knowledge about the students thinking on energy innovation and energy use and in this way can further proceed with advancing this symbiotic relationship.*
Success Factors	• *Ensuring institutional culture is aligned with the proposed changes.* • *Engaged population is aware of and interested in sustainability* • *The targeted population can allocate time on engagement activities* • *Use expert knowledge in methodological approach* • *Seek user input as early as possible.*
Constraints	• *Having adequate access to the targeted population* *Extensive liaising with the university campus managers.* • *Matching the academic timeline and the project's timeline.* *Significant effort in prior planning and consideration of alternative pathways.*
Lessons learned	• *The student population is interested in low carbon energy and its respective technologies.* • *The University of East Anglia can expand the deployment of smart low carbon energy systems that engage the student population.* • *Early engagement with the students is key to success.*
Sustainability	• *Introduce parts of the practice with the induction package of the student population.* • *Link the population engagement practice with all low carbon technology advancements on campus.*
Replicability and/or up-scaling	*Parts of the best practice are easily transferrable to a wider range of case studies. Not all contexts would be suitable for all the population engagement activities that took place in ICE project, but its adaptability is in the fact that anyone of its elements can be applied independently in the appropriate setting.*
Conclusion	*This approach was important for ICE project since it has helped gain valuable learning for energy user engagement with smart low carbon energy technologies. Furthermore, by focusing on the University of East Anglia campus it has expanded the case of isolated territories to that of campuses which can potentially be energetically cut off from the wider network.*
Contact details	*University of East Anglia* *Prof Konstantinos Chalvatzis* ***k.chalvatzis@uea.ac.uk***
Related resources that have been developed	*Deliverable 5.1.1 Report and UEA Events.*

7. Animation of a club of territories

November 2022 **Hélène Morin (BDI)**

Element	Guiding questions
Project	*In order to disseminate and replicate the tools developed and tested in the frame of the ICE Project.*
Introduction	*After developing and testing methodologies and solutions with 2 territories, the ICE project had an objective to disseminate the results and give other isolated territories the opportunity to implement these new solutions.*
Location /geographical coverage	*The main geographical coverage was first the Channel Area (French and UK territories). On a second phase we succeeded in spreading the club all around the world.*
Stakeholders and Partners	*The main beneficiaries have been the isolated territories willing to better know and understand the ICE solution. The result has also demonstrated that Solution Providers have benefited from the Club by better knowing the needs of the territories, helping them to propose innovative solutions.*
Methodological Approach	*We identify two pillars in the methodology:* *1) Identify potential stakeholders:* - *Creation of a database with names and key contact in territories* - *Building of relationships with networks, organization, clusters, etc. with direct access to the stakeholders* - *Participation to international events* *2) Federate and animate the club:* - *Organize events and webinars* - *Target both strategic and ready-to use contents in line with the stakeholder needs* - *Propose individual follow up*
Validation	*The number of members of the Club is getting higher demonstrating that the practice is efficient*

Impact	*Some isolated territories have already implemented the ICE solutions and tools.*

Success Factors	*The main conditions are:* *1) Know the issues and expectations of the stakeholder* *2) Combine conceptual contents with practical case studies*
Constraints	*As the animation was done on line and the territories spread all around the globe, the main challenge has been to establish a direct and long-term relationship.*
Lessons learned	*You need content with high added value if you want to federate stakeholders.*
Sustainability	*Make sure that the contents are appropriate, bring something new to the stakeholders and go beyond the state of the art.*
Replicability and/or up-scaling	*In order to replicate the best practice, you need:* - *A key topic with strong content* - *A good animator*
Conclusion	*Building a club of territories is a good way to:* - *Disseminate widely your results* - *Accelerate the implementation of the content*
Contact details	*h.morin@bdi.fr*
Related resources that have been developed	*A database of territories (more than 100 territories), a series of webinars (5 webinars available here: **https://www.ice-interreg.eu/ressources**) and participation to international events (3 participation to the Virtual Island Summit)*

8. Annexes

ANNEX1: SPECIFICATIONS

Fonds Régional de Développement Européen
European Regional Development Fund

ICE
INTELLIGENT COMMUNITY ENERGY

Interreg
France (Channel Manche) England

EUROPEAN UNION

CALL FOR PROJECTS

ENERGY TRANSITION OF ISOLATED TERRITORIES

SPECIFICATIONS

9.

10. Contents

10.1 1. Background

1.1.The ICE project

Funded by the European program INTERREG VA France (Channel) England, the project**Intelligent Community Energy**(ICE) aims to design and implement innovative smart energy solutions for the isolated territories of the Channel.

Islands and isolated territories face energy efficiency, reliability and sustainability issues. This is due to their strong dependence in terms of supply, the production of electricity from fossil fuels, the low transmission capacity of their network and their limited or even non-existent connection to national networks. This situation therefore leads to higher than average carbon emissions, greater sensitivity to fluctuations in fossil fuel prices and interruptions in supply.

To meet the needs of these territories, ICE wants to work for an innovative energy system (smart grid) with a low carbon footprint and capable of reducing greenhouse gas emissions (by 50 to 100%) in the regions concerned. The project will cover the whole cycle - from production to consumption by exploiting different local renewable energy (RE) sources and combining technologies to offer a complete solution.

More information :**https://www.ice-interreg.eu/?lang=en**

10.1.1 1.2.Non-interconnected areas

These territories constitute off-grid systems that involve small-scale electricity generation (10 kW to 10 MW) and serve a limited number of consumers through a distribution network that can operate independently of national electricity transmission networks (**Mini-Grid Policy Toolkit, 2014**). Island territories or rural, mountainous and forest areas are a good example. Extending the national grid to these areas is proving extremely costly and technically difficult: access, installation methods, regulations and extreme environments are obstacles to connecting to the grid. In contrast, off-grid systems are flexible, easy to use, less expensive to implement, and adaptable to local needs and conditions. They can also integrate local renewable energy sources to supply electricity.

On the pilot sites (e.g. Ouessant) and, in the longer term, on other isolated territories, the idea is to achieve a 100% renewable energy mix by 2030 by acting both on:

- Controlling demand (e.g. via gradual renovation/insulation of buildings, modernization/ replacement of heating equipment, etc.);
- The production and management of the network (eg studies of the most suitable energy mix for the territory concerned, modernization of the network, integration of other equipment such as wind turbines, tidal turbines, PV, etc.);
- The implementation of related “Smart City” type services (e.g. network and IoT, smart public lighting, etc.).

10.1.1.1 1.3.AMI and the ICE label

As part of the ICE project, a call for expression of interest (AMI) identified companies capable of providing innovative solutions for the energy transition of isolated territories.

The ICE label is intended for companies wishing to provide energy solutions to isolated networks. This label certifies that companies have the required expertise in connection with issues of smart grids and isolated territories.

With the ICE label, the selected companies have access to the service offer described below.

MARKET KNOWLEDGE 	• Access to a case study database of isolated territories at international level and point of contact for entry into these territories (15 islands listed in Europe; 8 in the world). • Access to a market study conducted with 24 ZNIs

NETWORKING 	• <u>Visibility</u> Companies with the ICE label will benefit from increased visibility on the market via various means of communication: ✓ Promotion of labeled companies on the web (websites of each of the ICE partners, newsletters, press releases, etc.); ✓ An online directory of labeled companies; ✓ An interactive directory of European companies in the energy sector. • <u>Networking</u> "Match-making" and networking events will be organized by ICE partners: an excellent opportunity for labeled companies to present their solutions to other European players in the energy sector. • <u>Mentoring</u> ✓ ICE will facilitate collaboration between labeled companies and companies in the energy sector at European level.
INFORMATION ON SOURCES OF FUNDING 	ICE labeled companies will be offered support to identify possible sources of R&D funding for their projects: • Monitoring calls for projects; • Access to a database of private / public funding - national, European and international; • Project support

The companies were selected on the basis of an expression of interest and in response to the technical, logistical, commercial and territorial criteria defined in the specifications of the AMI.

Today, 21 French companies and 5 British companies have obtained the ICE label.

The AMI is still open and it is still possible to apply via the following link: **https:// en.surveymonkey.com/r/RPMGQTZ** .

10.1.2 2 The call for projects

10.1.2.1 2.1 Purpose

To follow up on this first action, which made it possible to identify companies presenting or wishing to develop products and services allowing them to act in favor of the energy and ecological transition of the territories, the partners of ICE are implementing a call for projects.

Dedicated to SMEs (in the community sense) working in the energy transition sector, this call aims to finance projects responding to problems encountered by isolated and/or island territories. The types of eligible projects are:

- Feasibility studies, impact studies,
- Market studies, territorial acceptance, proof - of concept,
- The prototypes...

The projects must relate to the needs of isolated and/or island territories in connection with their energy transition which, after consultation, may for example concern:

- The reduction in the volume of waste and local treatment (methanization, etc.) The improvement
- of infrastructures and materials, respectful of the environment and not energy-consuming
- Renewable energies, MRE, solar panels resistant to the maritime climate Etc…
-

10.1.2.2 2.2 Eligibility criteria

This AAP is open to all**French SMEs**presenting solutions corresponding to the problems of the territories concerned and which have the technical potential to implement them.

They must not be in a situation prohibiting the granting of public aid, such as, in particular, in the case of a company in difficulty or subject to a recovery injunction.

Companies must present projects:

- Innovative,
- With a budget between 15 and 25 k€,
- With a maximum duration of 4 months (from July 2021)

The duly completed tender documents must be submitted no later than**June 11, 2021**to the following address :**anais.turpault@polemer-ba.com** .

10.1.2.3 2.3 Project selection

This action is led by the Pôle Mer Bretagne Atlantique with the support of BDI, TBI, TQC and MSE.

In order to select the winning projects, a selection committee will be formed, it will involve:

- ICE project partners
- Representatives of the territories and thematic experts

The Selection Committee will examine the projects received, based on the submission file, based on the following criteria:

- Adequacy with the objectives of the specifications Adequacy with
- the energy needs of isolated territories Innovative character: to
- be argued with market elements The service: level of utility,
- added value
- Potential economic benefits Viability and
- development potential of the project Ability - to be deployed commercially

2.4 Provisional timetable

The implementation of this call for projects will follow the following sequence:

- Launch of the call for projects (May 4, 2021 – June 11, 2021)
- Constitution of the jury (May 2021)
- Selection of winners and grant agreement (25 June 2021)
- Implementation of winners' projects (from July 2021)
- Reports on winners' projects (October-November 2021)

10.1.2.4 2.5 Funding

The call for projects is launched within the framework of the ICE project and as such benefits from funding for the projects which will be selected by the selection committee.

Selected projects will be 100% funded under the ICE project.

The conditions for payment of the aid are as follows:

- A single payment at the end of the project on the basis of a summary statement of expenses paid. Expenses incurred must be justified.

The allocation of aid to the winners will be managed by the Pôle Mer Bretagne Atlantique after the decision of the Selection Committee.

2.5.1 Eligible expenses

Eligible expenses correspond to costs related to R&D. These are more particularly staff costs, subcontracting costs and the costs of hardware and software. Costs relating to travel/missions are not eligible.

2.5.2 Balance Sheet and Valuation

One week after the end of the development period, the selected and funded projects must submit a report to the ICE project presenting the results of the developments carried out. This report will be added to the results of the ICE project and transmitted to the joint secretariat of the INTERREG FMA.

11. 3 General provisions

11.1 3.1 Amendment of the Rules

The ICE project partners reserve the right to modify one or more of the deadlines listed or one of the articles of these rules subject to public notification on the project website.

11.2 3.2 Conditions relating to confidentiality and intellectual property

The persons having to know the documents transmitted by the Participants are all subject to an obligation of confidentiality.

The intellectual property of the funded studies will belong to the selected SMEs that developed them.

Neither the Organizer nor the partner actors acquire any property rights over the content published by the Participants on any online or offline media. This includes in particular their written and illustrative contributions,

their videos, their documents, their developments, their personal data and more generally any information published by them on all media.

11.2.1 3.3 Obligation and liability of the Winners

The Winners authorize the Organizers to publish their organizations, their names as well as the budget, funding and a non-confidential description of their projects within the framework of all communication actions related to the call for projects and the ICE project.

The Winners may possibly benefit from communication actions related to the projects of which they are leaders through mediatization, and animation actions initiated by the Organizers and/or the Partners.

The Winners will ensure that the logo of the ICE project appears on the communication media of the project for which it will have been distinguished, as well as on the publications which will promote it.

The Laureates undertake to inform the partners of the ICE project of the post-project impacts.

11.2.1.1 3.3.1 Information and personal data

In application of the General Data Protection Regulations which came into force on May 25, 2018, participants' authorization will be requested if personal data concerning them should be communicated by any means whatsoever.

3.3.2 Disputes

These rules are subject to French law. Any dispute relating to the application and interpretation of the rules will be subject to the jurisdiction of the courts of Rennes.

12. 4 contacts

For any additional information, you can contact:

Anaïs TURPAULT, Pôle Mer Bretagne Atlantique: **anais.turpault@polemer-ba.com**

ANNEX 2 : SUBMISSION DOCUMENT

ICE – Intelligent Community Energy

YEAR: 2021

Submission of documents for Friday, June 11, 2021

(max 15 pages)

SELECTION FILE

<PROJECT NAME>

Submission Call for Projects

ICE – Intelligent Community Energy	
Funded by the European program INTERREG VA France (Channel) England, the ICE project aims to design and implement, for the isolated territories of the Channel, innovative smart energy solutions, led by SMEs.	
Coordinator	**Bretagne Développement Innovation**
Organizer	**Pôle Mer Bretagne Atlantique**
Field of action	**Ecological transition – Europe hub**
Date of writing	XX/XX/2021

By completing this document, you agree to meet the following eligibility criteria:

- ☐You are a French SME
- ☐Your industry is related to the smart energy efficient solutions sector
- ☐You must not be in a situation prohibiting the allocation of public aid
- ☐Your project is innovative, has a maximum duration of 4 months, for a budget between 15k and 25k €

This document is intended to be sent for examination to a selection committee made up of ICE project partners, sponsors of the call for projects, representatives of the territories and thematic experts.

If necessary, do not hesitate to contact:

Anaïs TURPAULT
Pôle Mer Bretagne Atlantique
anais.turpault@polemer-ba.com

Contents

13. Identification of the project leader

Carrier :

Social reason :

Legal status :
SIRET number:
Company creation date:
Address :

First name NAME of the correspondent for the project:
Correspondent's function:
Telephone Off. :
Mobile phone. :
Email (required):
Bearer URL: http://www.

Number of employees :
Turnover:

First name NAME of the manager, Function:

ICE labeled company:☐Yes☐Nope

Company activities:

Nature of the project:
(Examples: feasibility studies, market studies, territorial acceptance studies, proofs of concept, prototypes, etc.)

14. Project display

14.1 Non-confidential summary of the project

Present the project in a synthetic way in clear terms, it must be consistent with the themes of the ICE project.

- Specify how your project fits into the issues encountered by isolated/island territories: limited operating space, isolation, accessibility, local legislation, etc.
- Specify whether the project requires access to data, products or services independent of the installed solution, and provide details.

NB: if the project is chosen, the text will be used for communication purposes.

14.2 Objectives and purposes: supporting the energy transition

Develop how your project contributes to achieving an energy mix targeting 100% renewable energy by 2030.

If you have identified an experimental territory, describe it here (specific needs, suitability and contribution of your solution)

15. Technical data and orgazization

15.1 Innovation: techniques/technologies implemented and techniques/technologies sought

1. Situate your project in relation to the current state of technological and scientific knowledge.
2. Specify the innovative nature of the solution and its implementation in a ZNI (production, storage and distribution of energy)
3. Develop consideration of the more difficult access conditions of island territories
4. Describe the technological locks, the use locks and the technical and economic locks to be lifted.

15.2 State of the art

Draw up a state of the art of the existing, also take an interest in work further upstream. (One page max).

15.3 Stages of the project, tasks to be carried out

Describe the current level of development of the proposed solution or service, and the list of tasks to be completed within 4 months. Include a project schedule (possibly in the form of a Gantt) where each task will specify:

- Details of the work planned
- Estimated time spent planned (in man*months) by staff category
- The associated planned expense
- Identification of "inputs" and "outputs"

Reminder: the project must start for July 2021

15.4 Project schedule

Start date :

End date:

Duration of the project (4 months maximum):

16. Positioning and commitment of the company

16.1 Budget allocation

Reminder: maximum total budget of €25k (excl. VAT)

Summarize here the breakdown of expenses on the total budget, eligible expenses correspond to costs related to R&D. These are more particularly staff costs, subcontracting costs and the costs of hardware and software. Costs relating to travel/missions are not eligible.

Total amount of the project(excl. VAT): €XXk

Project duration(in months): XX months

	Task title	Amount (€)
Task 1		
Task 2		
…		

16.2 Summary of the market context, issue, competitive positioning

Identify the needs and the target market(s), as well as the positioning in relation to the competition (other projects, competitors in France and abroad).

To specify :

1. If a commercial study has already been carried out (internally, externally): this study must include market elements such as: target customers, potential annual market (volume and trends), competition (price, product performance and companies)
2. If the project has already been implemented or tested on a Non-Interconnected Zone
3. On which issue of energy isolation do you position yourself?

16.3 Summary of expected economic, industrial, technological, scientific and territorial benefits

List thepositive socio-economic impacts over the long term:

- The number of jobs maintained or created, in the company or locally in the territory
- Strategic issues for the company
- The expected valuation in terms of patents or scientific publications
- L'impact on users and behaviors, etc.

ANNEX 3: SCORING SYSTEM

- Call for projects ICE -
Energy transition of isolated territories

Selection committee

Please rate the projects from 1 to 5 by selection criteria.
1 = weak // 5 = very good

The 3 projects with the best scores after pooling the evaluation grids of all the members of the committee will be designated the winners.

First - Last Name	
Organization	

	Candidat 1	Candidat 2	Candidat 3	Candidat 4	Candidat 5
Adequacy of the solution to the energy needs of isolated territories					
Contribution to reducing the territory's CO2 emissions					
Innovative nature of the solution					
Level of usefulness and added value of the service					
Potential economic benefits					
Viability and development potential of the project					
Respect of the maximum duration of 4 months and the budget					
Involvement of an island territory					
TOTAL	/40	/40	/40	/40	/40

Comments	
Candidat 1	
Candidat 2	
Candidat 3	
Candidat 4	
Candidat 5	

Résultats:

- Call for projects ICE -
Energy transition of isolated territories

Selection committee					
Report the total scores awarded for each project for each member of the jury					
	Candidat 1	Candidat 2	Candidat 3	Candidat 4	Candidat 5
Jury member- 1					
Jury member- 2					
Jury member-3					
Jury member-4					
Jury member-5					
TOTAL	0 /200	0 / 200	0 / 200	0 / 200	0 / 200

Signatures :

Call for ICE Projects - Energy Transition of Isolated Territories // Selection Committee // XX June 2021		
Name	Structure	Signature
Jury-1		
Jury-2		
Jury-3		
Jury-4		
Jury-5		