



smilegov  
Multilevel Governance

Enhancing effective implementation of sustainable energy action plans in European islands through reinforcement of smart multilevel governance

## ***Final Report***



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# SMILEGOV Partners



DAFNI



Region  
Gotland



ÖLANDS  
KOMMUNALFÖRBUND



HIIU VALD  
HIIU MUNICIPALITY



ENERGY  
ACADEMY



tc  
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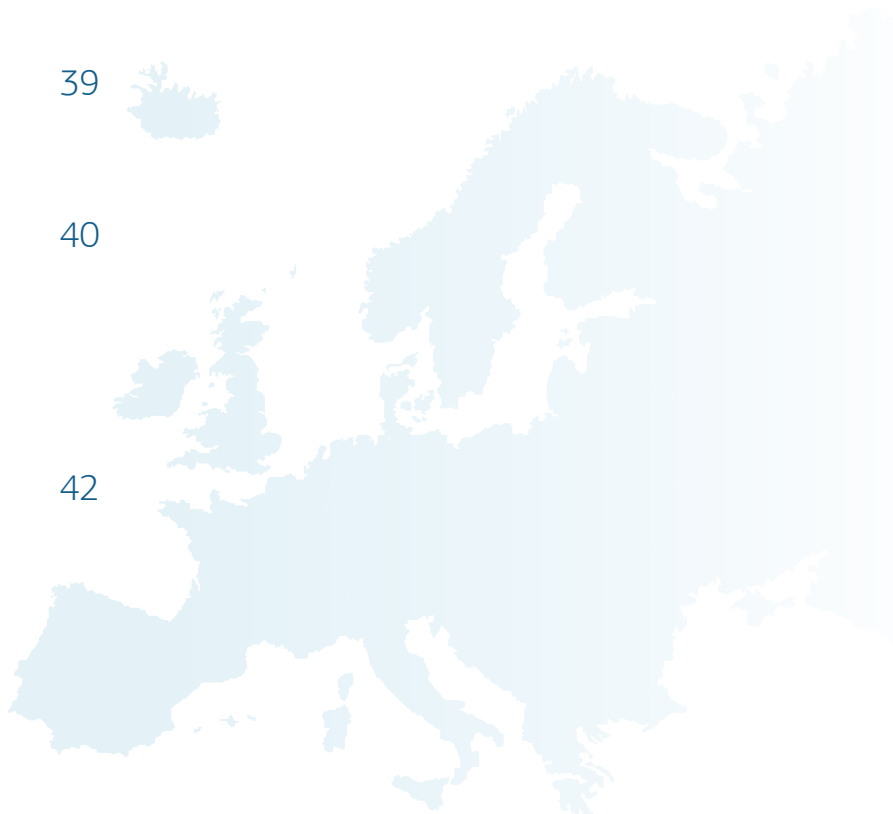
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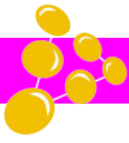
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## Executive Summary

Islands in Europe but also globally are frontrunners in the fight against climate change. Although usually rich in renewable energy resources, significant potential to increase energy efficiency in their local infrastructure and the need to shift to sustainable mobility, islands often face different kinds of barriers, impeding or significantly delaying the actual deployment of sustainable energy plans and projects in their territories. At the same time through islands have a strong tradition in cooperation and experience sharing and can benefit by investing in their human and cultural capital to overcome these barriers.

SMILEGOV came to assist exactly this process of knowledge sharing among European islands of different size and capacities by enhancing multi-level cooperation among levels of administration and stakeholders and thus foster local sustainable development.

SMILEGOV helped create long-lasting structures of cooperation, giving voice to island communities across Europe for the promotion of sustainable development on their territories. More specifically SMILEGOV helped create the conditions for European island authorities to reduce CO2 emissions by more than 20% by the year 2020 and beyond, by inviting them to participate in relevant EU initiatives (i.e. Pact of Islands) in order to build the necessary capacities and launch a series of business plans, actions and projects for the effective transition to a low-carbon development path.

SMILEGOV did not come out of nowhere; it built on previous projects and on-going initiatives and acted as a multiplier. Its added value lies with the approach of clustering together a significant number of European islands, creating economies of scale and reinforcing territorial cohesion through the exchange of knowledge

and capacity development. In essence, SMILEGOV helped formulate an enabling environment for enhanced multi-level and multi-lateral governance (MLG), by providing local authorities, its key target group, with concrete tools and methodologies to improve their cooperation with other levels of administration (regional, national) and stakeholders and successfully implement sustainable energy plans and projects. Thus, SMILEGOV responded to a well-identified need – that of empowering island local authorities by building their capacity to use innovative financing schemes, effectively engage stakeholders and implement bankable sustainable energy projects.

The network of 12 island clusters that was set up thanks to SMILEGOV was the driving force behind the doubling in number of the Pact of Islands signatories. Moreover SMILEGOV helped promote islands as ideal test beds for sustainable innovative energy technologies, highlighting the contribution of these technologies to islands' balanced socio-economic development.

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*“Islands are the buttons of the Sustainable Europe coat”*

*The SMILEGOV Team*

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SMILEGOV finally managed to create long-lasting ties among European islands, planting the seed for sustained collaboration and undertaking of joint initiatives, leading to the establishment of more permanent structures of cooperation among European islands. SMILEGOV might have ended, but the fruits from the cooperation established will be long lasting.

# 1. Introduction and Background

## 1.1 Islands and Sustainable Energy

Islands, whether they are located in the Mediterranean, the Atlantic or the Baltic Sea, are remote areas compared to urban areas in the mainland, and are often recognizable as holiday destinations only. Beaches, local quality products and large hotel complexes or just summer houses are the elements for which islands are most known for in people's minds.

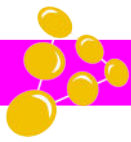
Seasonality, fluctuation of population, radical increase of infrastructures' use, energy and water security of supply, as well as waste production are consequences that visitors often don't even realize, which become challenges for island authorities to deal with in a sustainable way. In addition, islands face permanent structural handicaps that lead to market failures and also face lower competitiveness and higher unemployment rates, which lead young people flee to the mainland for better conditions for studies and jobs. The same reasons often increase distrust among islanders towards decision making in the EU and even towards the European project itself.

The SMILEGOV project built on the recog-

nition that even if islands have different sizes, population, infrastructure, modes of governance, institutional knowledge, financial and social structures, many of their challenges have the same roots and are common to some extent. The aspects where it focused on were two of the main common weaknesses -especially small-islands suffer from: Governance issues and human resources and capacity, with the aim to strengthen both.

The size and geographical location of islands influence these two challenges. The smaller the population, the bigger is the number of barriers identified at local level, particularly in relation to multi-level cooperation with other authorities, funding, capacity building and daily practical concerns such as energy efficient heating, use of local renewable energy resources. Further, the existence of a sustainable energy action plan, or the lack of it, particularly in small islands, determines the type and importance of barriers emerged. Such plans are valuable strategic tools that foresee the establishment of both emission inventories and the develop-





ment of bankable energy projects.

Nonetheless, even when such a plan is in place, many islands still depend on regional and national support to implement renewable energy projects. If there is poor communication or other barriers between the different levels of governance, which is often the case, projects are delayed and often held to a standstill, in absence of a better process in place. Such delays result in investors shifting their funding to other projects, where the implementation can progress in a faster and less complicated way.

The SMILEGOV project built clusters of islands to facilitate exchange and cooperation among islands with similar characteristics, as well as experience transfer from other geographical areas.

The SMILEGOV project assisted islands to

build competences on the mechanisms of effective multi-level governance, to overcome constraints related to cooperation of different administrative levels, to make advance specific sustainable energy projects within their maturing process, and to make steps towards a sustainable and resilient development.

It also assisted weaker islands to steadily increase the levels of awareness of their island communities regarding the societal value of sustainable energy plans, to make commitments in line with the EU 2020 goals and sign-up to the Pact of Islands, to familiarise with successful examples of investment schemes with the participation of local citizens, to understand the importance of stakeholders' involvement in the projects' development process and finally to build skills in the process of maturing sustainable energy projects.

## 1.2 SMILEGOV in a nutshell

### The SMILEGOV in numbers

- 12 island clusters have been established
- 163 island authorities have joined the clusters
- 57 islands have joined the Pact of Islands
- 312 persons have been trained in the Energy Academy 2020
- 55 sustainable energy projects taken steps towards implementation
- 15 island Sustainable Energy Action Plans have been developed
- 125 M€ of cumulative investments will be realised
- 2807 GWh of primary energy will be saved
- 1043 GWh of renewable energy will be produced
- 1116 ktCO<sub>2</sub>/year of greenhouse gas emissions will be reduced annually

### The SMILEGOV objectives

SMILEGOV is an opportunity for the European islands reach the EU 20-20-20 objectives and tackle climate change by:

- identifying and removing obstacles in the implementation of the operational programmes aimed at promotion and investment in the field of sustainable development
- bringing EU islands to work together – share areas of expertise and experiences, and to develop additional skills through capacity building workshops and an e-learning platform available to project participants
- gaining more skills and useful contacts for the new framework programme Horizon 2020 and the mid-term review of the operational programmes in 2016-2017
- extending the great family of European islands that have signed the Pact of Islands and work together towards the objectives of Europe 2020 and further.



# 2. Applied approach and methodology

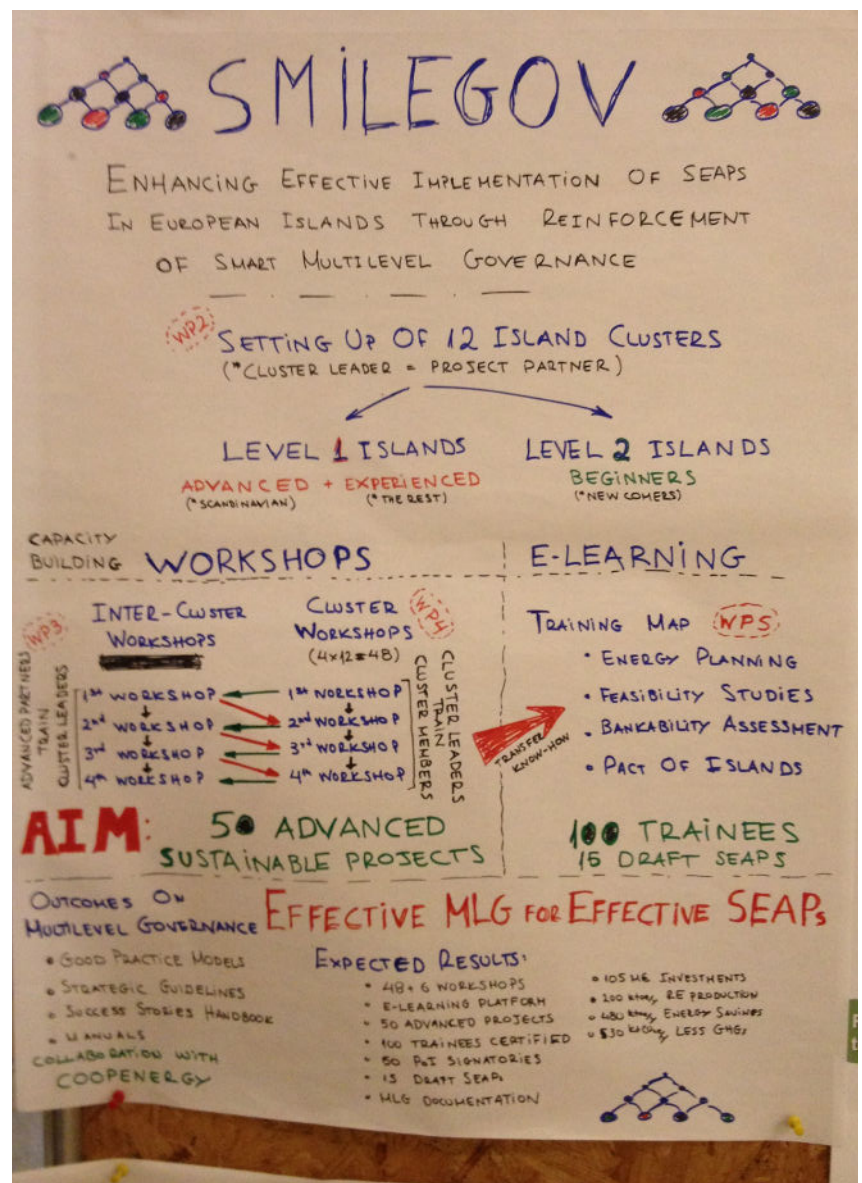
## 2.1 An overview

The approach and methodology that SMILEGOV applied was founded on a basic premise: the need to set up a structure that catalyzes the exchange of knowledge between islands of different capacities acting on different administrative levels through intensive capacity building. The process of developing capacities among partners and cluster members bore significant and tangible results, creating an important precedent for sustainable local development in islands.

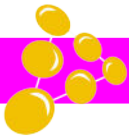
Capacity building activities were tailored to priority areas identified by each cluster and focused on capitalizing strengths and tackling weaknesses. They were structured in a way that provided cluster leaders with recurrent feedback on their usefulness and the need for adjustment in light of emerging needs. More specifically, capacity building was promoted through local workshops and bilateral meetings, targeting island authority representatives and other stakeholders with a special interest in sustainable energy planning and project development but also through plenary workshops, focusing on relevant knowledge transfer from the more experienced to the less experienced SMILEGOV partners.

Further capacity building was promoted with the establishment of the SMILEGOV

e-learning platform which served the purpose of extending the outreach of the project to actors from insular, coastal but also mainland areas within and beyond Europe who have an interest in sustainable energy planning and project implementation. Apart from building knowledge at a more strategic level, capacity building served a more operational purpose, that of helping 50 identified bankable projects in the different islands make significant steps forward.



The SMILEGOV approach poster

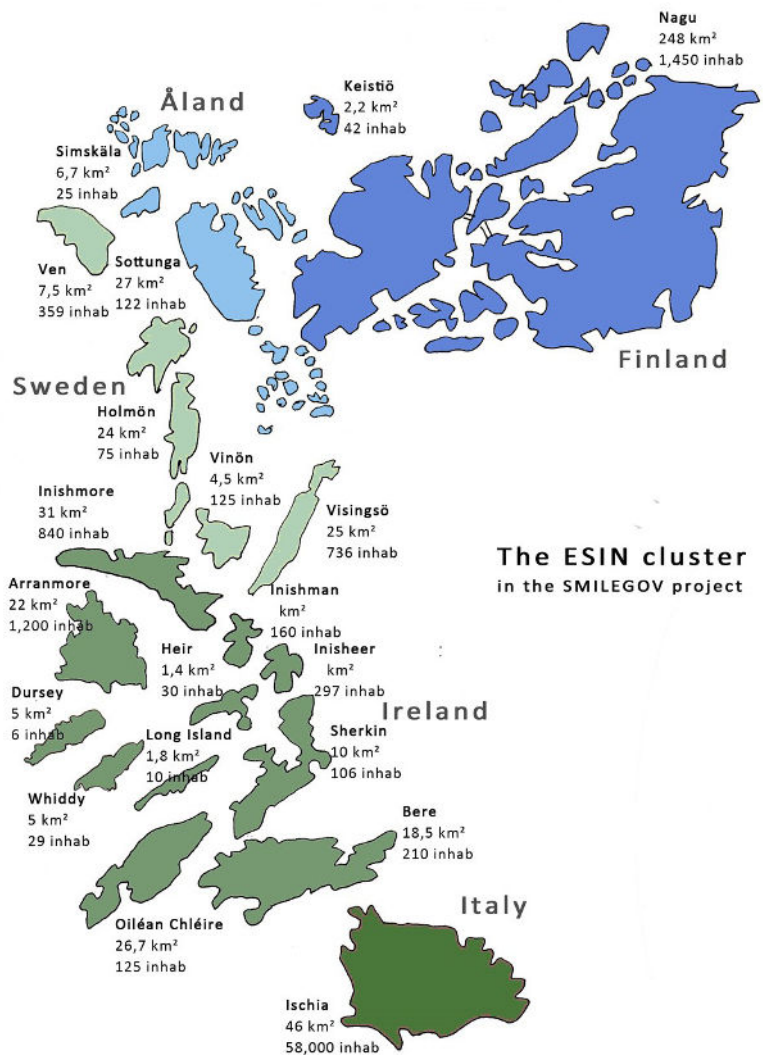


## 2.2 Establishment of island clusters

To enable the efficient and practical exchange of knowledge SMILEGOV established 12 clusters of islands covering the largest part of Europe's insular regions, i.e. the Atlantic ocean (Portugal, Spain, UK), the Baltic Sea (Denmark, Sweden, Norway, Finland, Estonia) and the Mediterranean sea (Italy, Malta, Cyprus, Greece) comprising 163 cluster members. Then it was time for communication and networking. SMILEGOV partners took over the role of leading their respective cluster and invited neighbouring islands to join the cluster. At the end of the day the clusters were enriched with 163 island members in total from 16 Members States and 2 neighbouring countries. The cluster members joined SMILEGOV having different experience and expectations. In order to facilitate the collaboration among the clusters and their members a 2-tier structure was adopted.

The 1st tier was comprised of SMILEGOV partners with significant experience in sustainable energy planning and project development. To capitalise on the vast experience some of these partners have in multi-level cooperation for the efficient elaboration of sustainable energy plans and projects the 1st tier was further divided into two groups. The first one grouping the more experienced Scandinavian islands, Samsø, Gotland and Öland into a "task force", who are front runners in local sustainable development and represent role models for many other island areas. The second one grouping the rest of the partners who yet need to further build capacity on efficient MLG in order to overcome barriers to energy planning and project implementation.

The 2nd tier was comprised of islands that had no previous experience in sustainable energy planning but joined the clusters and benefitted from the project's activities under the supervision of the cluster leader. Involving these islands was crucial



The ESIN cluster in the SMILEGOV project

to ensure the widest transferability the project could possibly have, creating the conditions for long-term cooperation between European islands thus contributing to territorial cohesion. At this point it is worth pointing out that the establishment of clusters had a major role to play in the diffusion of relevant knowledge among islands, resulting in more than 57 new islands or island authorities joining the Pact of Islands; a very significant impact of the project.

Overall through the establishment of clusters SMILEGOV left an important legacy: strengthened cooperation between partners with different levels of capacity and experience, through enhanced knowledge exchange and capacity development.

## THE PARTNERSHIP – CLUSTER LEADERS



### Cluster of Greece

#### Regions

- 1 Region of North Aegean
  - 2 Region of South Aegean
- #### Municipalities
- 3 Aegina – Argo-Saronic
  - 4 Amorgos – Cyclades
  - 5 Antiparos – Cyclades
  - 6 Andros – Cyclades
  - 7 Chania – Crete
  - 8 Festos – Crete
  - 9 Folegandros – Cyclades
  - 10 Ios – Cyclades
  - 11 Ikaria – East Aegean
  - 12 Kalymnos – Dodecanese
  - 13 Kea – Cyclades
  - 14 Kimolos – Cyclades
  - 15 Kos – Dodecanese
  - 16 Kythnos – Cyclades
  - 17 Leipsoi – Dodecanese
  - 18 Lemnos – North-east Aegean
  - 19 Lesvos – North-east Aegean
  - 20 Paros – Cyclades
  - 21 Skyros – North Sporades
  - 22 Tilos – Dodecanese
  - 23 Milos – Cyclades
  - 24 Minoa Pediados – Crete
  - 25 Mykonos – Cyclades
  - 26 Naxos and S. Cyclades – Cyclades

- 27 Nisyros – Dodecanese
- 28 Platanias – Crete
- 29 Rethymnon – Crete
- 30 Rhodes – Dodecanese
- 31 Samothrace – North Aegean
- 32 Santorini – Cyclades
- 33 Sifnos – Cyclades
- 34 Sikinos – Cyclades
- 35 Syros – Cyclades

#### Cluster leader

- DAFNI – Network of Sustainable Aegean Islands

### Cluster of Sweden

- 1 Sturkö – Blekinge County
  - 2 Aspö – Blekinge County
  - 3 Hasslö – Blekinge County
  - 4 Öland – Kalmar county
  - 5 Gotland – Gotland county
- Cluster leader  
Region Gotland

### Cluster of ESIN

- 1 Ischia – Italy
- 2 Bere Island – Ireland
- 3 Cape Clear Island – Ireland
- 4 Arrain Mohr – Ireland
- 5 Dursøy – Ireland
- 6 Heir – Ireland

- 7 Inishmor – Ireland
  - 8 Insiheer – Ireland
  - 9 Inishmaan – Ireland
  - 10 Long island – Ireland
  - 11 Sherkin – Ireland
  - 12 Whiddy – Ireland
  - 13 Simskåla – Åland
  - 14 Asterholm – Åland
  - 15 Sottunga – Åland
  - 16 Iniö – Finland
  - 17 Nagu – Finland
  - 18 Visingö – Sweden
  - 19 Vinön – Sweden
  - 20 Ven – Sweden
- Cluster leader  
ESIN – European Small Islands Federation

### Cluster of Denmark

- 1 Samsø Energiakademi – Samsø
  - 2 Bornholm region/kommune – Bornholm
  - 3 Læsø Kommune – Læsø
  - 4 Ærø Kommune – Ærø
  - 5 Sammenslutningen af Danske Småøer
- Cluster leader  
SEA – Samsø Energy Academy

### Cluster of Associated islands

- 1 Djerba – Tunisia
  - 2 Krk – Croatia
- Cluster leader  
DAFNI – Network of Sustainable Aegean Islands

### Cluster of Estonia

- Counties
- 1 Hiiumaa
  - 2 Saare county
- Municipalities
- 3 Emmaste – Hiiumaa
  - 4 Kaarma – Saaremaa
  - 5 Käina – Hiiumaa
  - 6 Kärla – Saaremaa
  - 7 Kihelkonna – Saaremaa
  - 8 Kuressaare – Saaremaa
  - 9 Laimjala – Saaremaa
  - 10 Leisi – Saaremaa
  - 11 Lümanda – Saaremaa
  - 12 Muhu – Saaremaa
  - 13 Mustjala – Saaremaa
  - 14 Orissaare – Saaremaa
  - 15 Pihlta – Saaremaa
  - 16 Pöide – Saaremaa
  - 17 Pühalepa – Hiiumaa
  - 18 Ruhnu – Saaremaa
  - 19 Salme – Saaremaa
  - 20 Torğu – Saaremaa
  - 21 Valjala – Saaremaa
  - 22 Vormsi – Lääne

- 23 Hiiumaa
- Cluster leader  
Hiiumaa Municipality

### Cluster of Malta

- Local Councils
- 1 Tarxien – Malta
  - 2 Pembroke – Malta
  - 3 Mellieha – Malta
  - 4 Birzebbuga – Malta
  - 5 Paola – Malta
  - 6 Naxxar – Malta
  - 7 Swieqi – Malta
  - 8 Kalkara – Malta
  - 9 Zebbug – Malta
  - 10 Ta' Xbiex – Malta
- Cluster leader  
LCA – Local Councils' Association

### Cluster of Portugal and Cape Verde

- 1 DRCIE – Direcção Regional do Comércio, Indústria e Energia – Madeira, Porto Santo
- 2 Funchal – Madeira
- 3 Santa Cruz – Madeira
- 4 Machico – Madeira
- 5 Santana – Madeira
- 6 São Vicente – Madeira
- 7 Porto Moniz – Madeira
- 8 Calheta – Madeira

- 9 Ponta do Sol – Madeira
  - 10 Ribeira Brava – Madeira
  - 11 Câmara de Lobos – Madeira
  - 12 Porto Santo – Porto Santo
  - 13 EEM – Empresa de Electricidade da Madeira, S.A. – Madeira, Porto Santo
  - 14 DREN – Direcção Regional da Energia – Açores
  - 15 DGE – Direcção Geral de Energia – Cape Verde
  - 16 CEA – Centro de Energia e Ambiente – Cape Verde
  - 17 DECM – Departamento de Engenharias e Ciências do Mar of Cape Verde University – Cape Verde
- Cluster leader  
AREAM – Regional Agency for Energy and Environment of Autonomous Region of Madeira

#### Cluster of Scotland

- 1 Isle of Bute – Argyll
  - 2 Isle of Mull – Argyll
  - 3 Small Isles (Canna, Eigg, Rum, Muck) – Highland
  - 4 Isle of Arran – North Ayrshire
  - 5 Isle of Cumbrae – North Ayrshire
  - 6 Isle of Gigha – Argyll
  - 7 Isle of Iona – Argyll
  - 8 Isle of Lismore – Argyll
  - 9 Isle of Luing – Argyll
  - 10 Isle of Skye – Highland
- Cluster leader**  
SIF–Scottish Islands Federation

#### Cluster of Spain

- Directorate General
- 1 DG of Industry and Energy of the Canary Islands Regional Government – Canary Islands
- 2 DG of Industry and Energy of the Balearics Islands Regional Government – Balearic Islands
- Cabildos
- 3 Gran Canaria – Canary Islands
- 4 Lanzarote – Canary Islands
- 5 La Gomera – Canary Islands

- 6 La Palma – Canary Islands
- 7 Fuerteventura – Canary Islands
- 8 El Hierro – Canary Islands
- 9 Tenerife – Canary Islands
- Municipalities
- 10 FECAM (Federation of Canary Islands Municipalities) - Island's Municipalities
- 11 Technological Institute of Canary Islands (ITC) - Canary Islands

#### Cluster leader

- ITC – Technology Institute of the Canary Islands

#### Cluster of CPMR

- 1 Conseil Régional de la Martinique – France
- 2 Conseil Régional de la Réunion – France
- 3 Ministère des Ressources Marines, des Mines et de la Recherche de la Polynésie Française – Polynésie Française, France
- 4 State of Alderney – Channel

#### islands

- 5 Isle of Wight – UK
  - 6 Isle of Man – UK
  - 7 Isles of Scilly – UK
- Cluster leader**  
CPMR – Conference of Peripheral Maritime Regions of Europe
- Cluster of Cyprus**  
Municipalities
- 1 Lefkosia – Cyprus
  - 2 Strovolos – Cyprus
  - 3 Larnaca – Cyprus
  - 4 Aradippou – Cyprus
  - 5 Latsia – Cyprus
  - 6 Lakatamia – Cyprus
  - 7 Ayios Athanasios – Cyprus

- 8 Engomi – Cyprus
  - 9 Yeri – Cyprus
  - 10 Polis Chrysochous – Cyprus
  - 11 Deryneia – Cyprus
  - 12 Athienou – Cyprus
  - 13 Ayia Napa – Cyprus
  - Community Councils
  - 11 Psimolofou – Cyprus
  - 15 Platres – Cyprus
  - 16 Lythrodontas – Cyprus
  - 17 Mazotos – Cyprus
  - 18 Anthoupoli – Cyprus
  - 19 Armou – Cyprus
  - 20 Episkopi Lemesos – Cyprus
  - 21 Ormideia – Cyprus
- Cluster leader**  
Energy Agency

## 2.3 Priority areas for capacity development

Having the 12 island clusters in place the leaders were assigned to identify priority areas where knowledge and capacity development at cluster level was mostly needed.

To support this process the leaders had to cooperate with the experts. In each cluster a think tank was established with key persons from local/regional authorities and stakeholders who came together in a first workshop with the aim of identifying these priority areas.

Think tanks besides of assisting the identification of the priority areas played an important role throughout the whole project process assisting in the diffuse of

the project results among key stakeholders at local, regional and European levels as well as in the strategic objectives and long-term impact of the actions of European islands on EU policies.

Priority areas did not come out of nowhere, but were the result of past project development experience and on-going work on sustainable energy planning. To get to these priority areas, SWOT analyses were conducted during the local workshops, addressing a wide range of topics such as:

- Needs and priorities of the cluster
- Local RES and EE potential
- Actions foreseen in iSEAPs and lessons

*Img 1: The cluster of ESIN 1st workshop*  
*Img 2: The cluster of Cyprus 1st workshop*



learnt so far

- Challenges faced for financing of bankable project
- Contribution of the actions to the local economy and employment
- Acceptance / Support by the local community involved
- Potential for penetration of technologies with high added value
- Licensing procedure for investments
- Regulatory issues

Following the SWOT analysis, workshop participants reached the conclusion that there are many types of barriers to the elaboration of plans and projects that might be political, technical, financial, social and/or environmental in nature. At the same time however participants stressed

that these barriers are often aggravated by poor communication and lack of efficient co-ordination between the different levels of governance (local, regional, national). Thus the recognition of enhanced multi-level governance as a prerequisite for successful implementation of sustainable energy projects and plans was confirmed, instilling confidence in participants that SMILEGOV is on the right path and can provide particularly useful insights on how to unlock sustainable growth on islands.

In the aftermath of these first local workshops, priority areas identified by each cluster were grouped together in six categories, common for all clusters, in order to inform the focus and content of the capacity building activities that followed.



## The six common priority areas for all clusters are:

### Category A: Mobility

For Mobility a key issue is how to make the transport sector fossil free including all kinds of public and private transportation and how to develop an optimal infrastructure that meets these needs.

### Category B: Communication

Communication emerged as the most prominent priority area, since all clusters highlighted the fundamental contribution of effective communication in raising citizens' awareness, thus creating the necessary conditions for enhanced involvement in and ownership of sustainable energy projects.

### Category C: Business Models

In light of considerable lack of local public and private funding but also experience regarding alternative financing schemes, such as cooperatives, all clusters underlined the importance of building capacity on designing effective Business Models, with a particular focus on energy efficiency projects.

### Category D: New Technologies

Regarding new technologies, the need for development of better IT/GIS planning tools and data bases but also E-solutions concerning electric ferries and vehicles featured in most clusters' identified areas.

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### Category E: Smart Grids

Particularly for Smart Grids key issues that emerged within clusters related to the potential of this technology to increase the total RES capacity absorbed by island grids and the extent to which smart grids, coupled with energy storage can boost grid stability.

### Category F: Permit Processes

Acquiring Permit Processes was identified by clusters as quite burdensome, causing in many cases significant delays or even bringing sustainable energy projects to a stalemate. For this, clusters expressed the need to learn more about how more efficient coordination between different levels of administration or different authorities can make the permit process faster.

## Priority area category

## Categories of barriers

<b>Mobility</b>	Slow integration of electromobility Lack of integrated planning infrastructure
<b>Communication</b>	Knowledge and results not or badly communicated Poor community involvement and shared ownership
<b>Business Models</b>	State funding dependancy Innovative financing mechanisms usually remain a theory
<b>New Technologies</b>	Low integration of ICT and other innovative solutions Slow maturation process - Demos do not scale up
<b>Smart Grids</b>	Limited capacity of inter-connections Lack of exploitation of the energy storage potentials
<b>Permit Process</b>	Top-down RES spatial planning Slow modernisation of legislative framework

## 2.4 Capacity development – The structure

After completing the preparatory work of identifying priority areas, the SMILEGOV partnership designed and implemented a range of capacity building activities. Capacity building was at the heart of SMILEGOV and was undertaken in different ways (plenary and local workshops, field trips, distant e-learning, bilateral meetings) targeting different audiences each time.

Four plenary workshops were hosted by the more advanced partners, who transferred knowledge to the less experienced ones, helping them unlock the elaboration and implementation of sustainable action plans or projects. In between plenary workshops, cluster leaders held local workshops involving their members and other experts and interested parties. On top of these, some cluster leaders held bilateral meetings with island municipalities providing them with hands-on experience and resolving issues that emerged within sustainable energy planning on an ad hoc basis. The succession of local workshops and plenary workshops was not coincidental; it was planned ahead and served the purpose of providing plenary workshops with input developed during the local workshops and vice versa. Cluster leaders brought with them in the plenary workshops specific challenges and barriers their cluster was facing, discussed those with their counterparts, received valuable feedback and insights, which they then channeled back to their cluster members through local workshops and bilateral meetings.

Further, capacity building facilitated the outreach to newcomers, i.e. island authorities, experts, and other actors with an interest in local sustainable energy planning also through the promotion of e-learning tools. Last but not least, capacity building served the exchange of knowledge between advanced islands belonging to the same region, laying the necessary foundation for intra-regional collaboration in areas of common interest.

This trans and intra-regional exchange fostered the European identity of SMILEGOV, by bringing to the fore problems that were representative of each geographical area, all while underlining the existence of common barriers across regions and the need for joint action to overcome them.

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### CAPACITY DEVELOPMENT

- *plenary workshops*
  - *local workshops*
  - *field trips*
  - *bilateral meetings*
  - *e-learning platform*
- 

## 2.5 Capacity development – The tools

To proceed with the actual transfer of knowledge and building of capacity among the leaders of less experienced island clusters, Scandinavian partners produced a diverse set of methodological tools. These tools were instrumental in capacity

development, since they provided hands-on advice on how to overcome barriers to sustainable energy planning and project management. For the development of this material real-life examples were used, in order to inspire island authorities and



Map with the 7 good practices

provide them with concrete guidance on how to ensure smooth development and delivery of sustainable energy projects and plans and build trust, overall, in the importance of local action for islands' sustainable development.

### 2.5.1 Good practices on enabling conditions for good MLG

Inspiration is the source of productive and fruitful action! With this in mind 7 case studies from the SMILEGOV family were selected and presented in the form of factsheets. These are projects and processes that can be relevant for other islands and sometimes other mainland regions too. Emphasis was placed on results and lessons related to multi-level governance, since multi-level governance was referred to, early in the project, as a precondition for effective sustainable energy planning and project development at local level.

The 7 good practice factsheets were used

later as input for the production of the Strategic Guidelines, a very important tool aimed to assist the less experienced islands in enhancing multi-level cooperation, overcoming barriers and actually implementing sustainable energy projects.

### 2.5.2 Strategic Guidelines

Following the collection of successful projects to inspire and energise the SMILEGOV partners, cluster leaders from Scandinavia developed the Strategic Guidelines (SGs). The SGs represent the most important capacity building tool, since they are a constellation of practices and experiences that have proved instrumental in the successful planning and implementation of sustainable energy plans and projects at the local level. The SGs pointed to the fact that barriers to sustainable energy plans and projects are most often the result of weak multi-level (MLG) processes. To address this reality the SGs provided local authorities with substantive information on

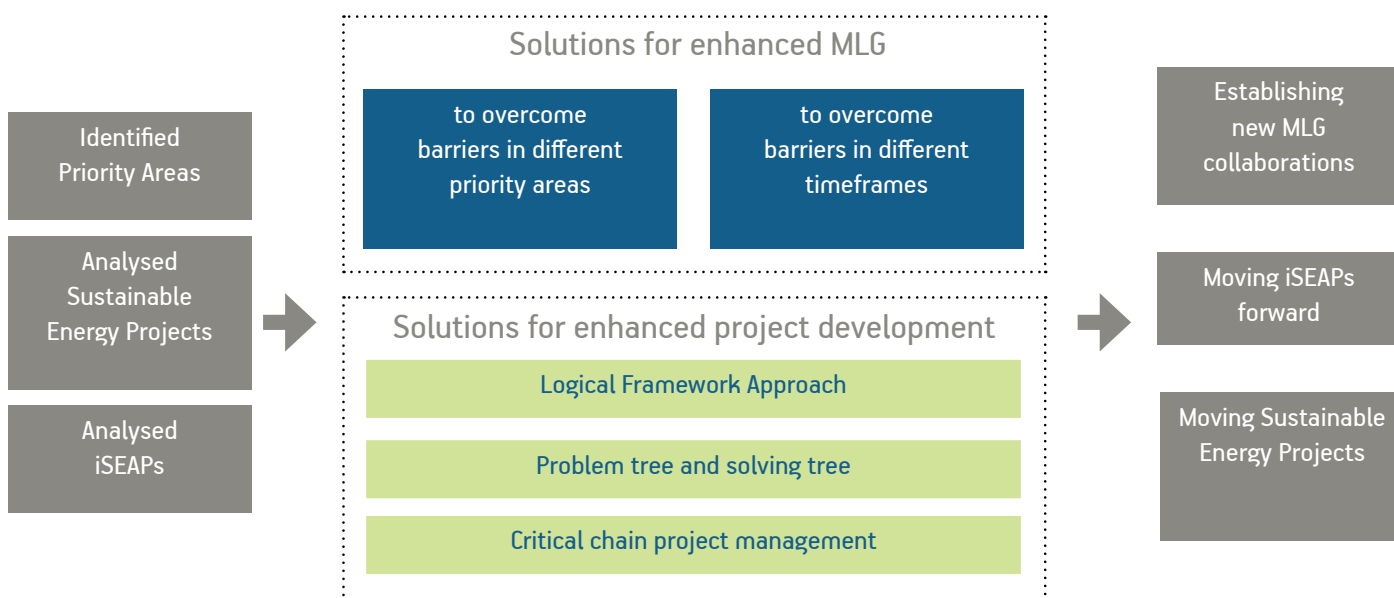


how to improve efficiency in the cooperation between administrations of different levels and strengthen the inclusion of all other concerned stakeholders for different priority areas and in different timeframes. The SGs also proposed steps to be taken to ensure robust project development, since this was identified as a horizontal need shared by all partners.

The SGs are comprehensive as much as easy-to-read, managing to convey key transferable lessons that can reinforce smart MLG in the European islands to foster effective implementation of sustainable

energy plans and projects. The guidelines were based on the experience of the SMILEGOV good practices and the extensive experience of the Scandinavian “task force” in multi-level cooperation.

The following logical diagram depicts the structure of the SGs. Starting with the identification of the problems / barriers and applying specific solutions for enhanced and well-functioning MLG it is highly likely that plans and projects are implemented.



### 2.5.3 Toolbox to support project development

To complement and further build on the SGs, a toolbox was created to provide step-by-step guidance on four key topics: overcoming MLG barriers, making use of innovative financing tools and strengthening stakeholders’ engagement and analysing projects’ bankability. Overall the toolbox served as a useful source of knowledge for SMILEGOV cluster leaders and sustainable energy project managers and an incentive to be more open-minded when designing sustainable energy projects and plans.

### 2.5.4 E-learning platform

Another important capacity building tool produced by SMILEGOV was the e-learning platform, “Energy Academy 2020”, used for distance learning by island authorities interested in signing the Pact of Islands as well as other actors with a special interest in sustainable energy planning and project development. Greenhouse gas inventory, Sustainable energy planning (iSEAP), Sustainable mobility planning and Stakeholders’ involvement were some of the topics available on the platform.

**1. Guide on Overcoming MLG Barriers:**  
 This guide was an effort to provide short and consistent step-by-step guidance on how to overcome barriers confronted during the planning or development phase of sustainable energy projects that are linked to structures of multilevel and multilateral governance (MLG).

**2. Guide on Innovative Financing Mechanisms:**  
 The guide responds to the need to secure financing for sustainable energy projects, by offering alternatives to more mainstream funding sources, which are now more difficult to access due to constrained public budgets. The guide presents four innovative financing mechanisms, namely energy cooperatives; energy performance contracting; public private partnerships; and crowd-funding.


**3. Guide on Stakeholders' Analysis:**  
 Effective stakeholders' engagement has been recognised by all partners as a key factor for successful implementation of sustainable energy projects and plans. Therefore a guide on the approach and the methods of mapping and eventually engaging stakeholders as a means to ensuring transparency and sustainability of sustainable energy projects and plans proved very useful to the project partners and the cluster members in particular, as highlighted during the local workshops.

**4. Project Bankability Analysis template:**  
 This was a spreadsheet template provided to assist the initial financial assessment of a sustainable energy project provided that the main energy and cost figures of the project are known.


E-learning was prioritised given the geographical scattering of islands within the clusters and was indeed a good solution for training people who are dispersed in more than one place and/or in remote places. Especially in clusters with many islands

like the DAFNI and ESIN clusters, travelling between islands was considered costly and time-consuming due to the rare ferry connections, especially in winter.

<http://www.energyacademy2020.eu/>




**Greenhouse gas inventory**  
 Calculate the annual amount of greenhouse gases that correspond to the island's economic sector. If you don't measure it, you can't control it!




**Energy planning (i-SEAP)**  
 Prepare an action plan to reduce the island's greenhouse gases emissions. More than 3600 communities in Europe have already done so!




**Mobility planning (SUMP)**  
 Worried about the impact of mobility to your island's carbon footprint? Prepare a dedicated action plan!




**Stakeholder involvement**  
 Learn who to involve in the process and how to avoid common failures!




**Pact of Islands & Tools**  
 All data of your island in one format. Sounds tidy and valuable? You bet!



**Monitoring**  
 See how you're doing with the actions you put in place, and tell your story!



**Multimedia library**  
 Read & Watch: Reports, Videos, Webinars, Examples. Get inspired!



**Collect points**  
 Collect points to get your certificate. On-line test: save your answers and resume it later!

## 2.6 Capacity development – The activities

### 2.6.1 The plenary workshops

The Scandinavian partners, with valuable insights on how to set up effective multi-level cooperation structures to facilitate the deployment of innovative sustainable energy projects on islands developed a training plan for the cluster leaders, which unfolded in 4 plenary workshops.

#### 1ST PLENARY WORKSHOP – GOTLAND, SWEDEN

September 2013: The first plenary workshop identified barriers within islands' sustainable energy plans and policies and suggested solutions on how to overcome them. The participants worked in groups and assessed their findings in plenary.

Participants were very satisfied from this first plenary workshop as can be demonstrated from their feedback

Img 3: Group working  
Img 4: Group working

*“We managed to identify common values and priorities that’s a first good step to collaborate”*

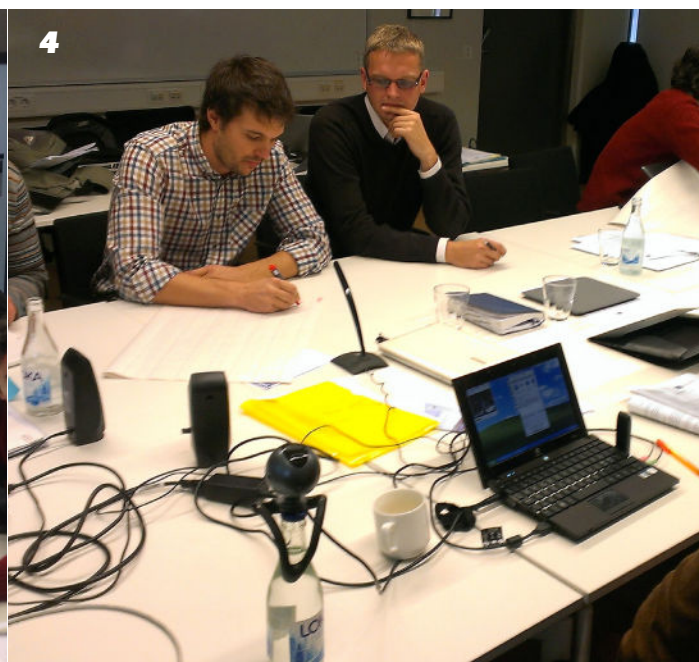
*“Efficiently performed workshop well used time, not long and boring”*

*“Sharing experiences can change my perspective and improve my approach”*

*“The workshops were characterized by activity, curiosity and ingenuity”*

*“The workshop created activity, curiosity, knowledge and a will to learn more”*

*“Our differences are what unite us to work on island’s sustainability”*





**2ND PLENARY WORKSHOP – SLIEMA, MALTA**

April 2014: The second plenary workshop was structured in the form of a living lab, where participants materializing on a part of the Strategic Guidelines applied in a step by step process the Logical Framework

Approach, a methodology that has been developed specifically for the overcoming barriers and enhancing project development.

Participants found the workshop useful and provided positive comments

Img 5: Filipe summarising  
 Img 6: Tommy summarising

“We had very honest, open discussions thanks to the trust and respect we have for each other”

“The workshop in Malta was a breakthrough for open and honest discussions where we were able to find new ways of working together.”

“Avoid the emergence instead of trying to overcome barriers; good project planning is the way.”

Img 7: Michael supporting the group  
 Img 8: Christian giving feedback





**3RD PLENARY WORKSHOP – SAMSØ, DENMARK**

October 2014: The third workshop focused on the principles, purpose and most effective way for a local authority to engage stakeholders in the process of energy planning and project implementation. The day was dedicated to knowledge and experience transfer on stakeholders' involvement in energy planning, where participants had the chance to explore and experiment

with the use of innovative, participatory engagement methods such as open space and shared space. More than 15 participants from the clusters and outside the consortium joined the workshop.

This workshop was the most intense and well perceived by participants, who were very enthusiastic with the experiential nature of the process and the knowledge acquired.

*Img 9: Søren facilitating the open space session  
 Img 10: Kostas facilitating a shared space session*

*“Gained incredible knowledge and met interesting people”*

*“Very good, and the improvisation was also part of the game to focus attention on the discussion”*

*“It opened up my perspective and gave me an inspiration to do things in a different way organizing workshops”*

*“The technique was the most interesting thing – Ideas and proposals”*

*“The shared/open space concept represents a useful tool to install a constructive dialogue between all actors towards solving a common issue and this was the most powerful and useful part of the workshop”*

*“Interesting new ways of dealing with stakeholders, colleagues, citizens and other groups were practiced”*

*“Very pleased with the workshop approach, useful for future meetings as it keeps the participants engaged within the conversation”*



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#### 4TH PLEINARY WORKSHOP – MADEIRA, PORTUGAL

March 2015: The fourth and final plenary workshop took focus on identifying and overcoming barriers related to project financing. Lively and informative discussions revolved around four innovative financing mechanisms (Energy Performance Contracting (EPC), Crowd-funding / Crowd-lending, Energy Cooperatives

(Coops) and Private Public Partnership (PPP)) for sustainable energy projects in islands. All participants joined all four tables and for an hour tried to come up with essential steps to set up the financing of a model project. Members of the task force facilitated the work on the tables. At the end of the work in groups participants came together to assess their findings.

*Img 11: Søren facilitating the open space session  
 Img 12: Kostas facilitating a shared space session*

*“This collective way of working and brainstorming helped me a lot to think in real conditions how to gradually build up processes to result to a successful financing”*

*“The workshop created activity, commitment, knowledge and a will to learn more”*

*“We could feel that we now have developed good capacity building activities together and that the plenary workshops work better and better”*

*“A very active workshop where participants expressed their enthusiasm to share more knowledge and gain more insight to help them build up their specific projects”*

*“Yes it is always important for small regions and islands to find ways and means on how to tap into funds to generate capitals to finance projects.”*



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Img 13: Kaj taking notes at the Crowdfunding table



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Img 14: Filipe facilitating at the EPC table



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Img 15: Johan taking notes at the PPP table

The final plenary workshop in Madeira capitalized on the extensive work and accumulated knowledge of partners in the previous period concerning the first steps of sustainable energy planning and project realization (identifying and overcoming barriers, engaging stakeholders) and introduced participants to innovative financing options. This was welcomed by participants who felt they were then better equipped to digest this information and use it effectively in their projects and local activities.



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Img 16: Participants taking notes



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## 2.6.2 The local workshops

Coming back from plenary workshops, cluster leaders were full of ideas and knowledge to share with their members! During local workshops island authorities, the primary target groups of these capacity

building activities together with other stakeholders received training, experimented with new tools and In total 346 trainees were identified for the local capacity building activities with 312 of them joining the Energy Academy 2020.

Img 17: Local workshop – Cluster of Estonia  
 Img 18: Local workshop – Cluster of Scotland  
 Img 19: Local workshop – Cluster of Cyprus  
 Img 20, 21: Local workshop – Cluster of Greece



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### 2.6.3 The task force workshops

Scandinavian partners held 3 regional workshops to exchange ideas, develop common strategies and plan joint initiatives. The most important outcome is the joint development of a strategy for the promotion of biogas in all Scandinavian islands, since these represent areas with significant biomass potential as a result of farming and livestock activities. Gotland's valuable experience in the use of biogas for transport and Samsø's in district heating respectively inspired Oland to embark on this journey of biogas development. Now the three islands are together in this effort, planning projects together for the benefit of their islands' local economy.

### 2.6.4 The study visits

The consortium partners had the chance to exchange knowledge through study visits during the project meetings but also on a bilateral basis through physical meetings (islands visiting islands) or distant technical support on specific topics where one partner was more competent than the other. The meetings in Gotland, Malta, Samsø and Madeira gave plenty food for thought to the participants. On top of that the visit of the small Swedish islands to Samsø and the visit of the Estonian islanders to the Scottish ones strengthened the bonds of the islands family.

- Img 22: The wind park in south Gotland*
- Img 23: The biogas plant in Gotland*
- Img 24: Inside the Sustainable Living Centre in Malta*
- Img 25: Outside the Sustainable Living Centre in Malta*
- Img 26: The straw district heating plant in Samsø*
- Img 27: The large PV on a foggy day in Madeira*
- Img 28: The reverse hydro in Madeira*



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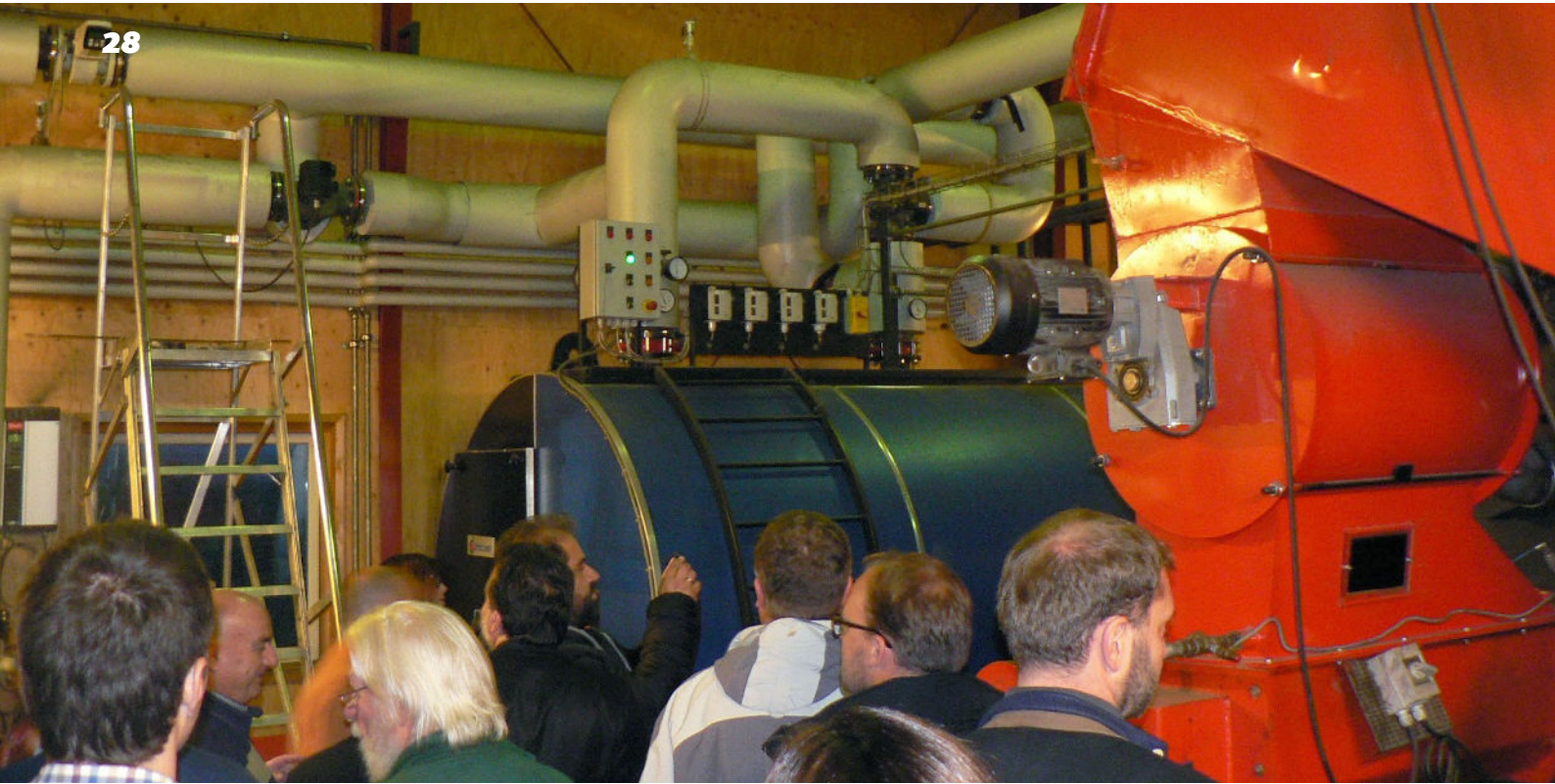
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## 2.7 Capacity development – The bankable projects

With their knowledge and experience significantly enhanced in the course of the intensive and productive capacity building activities, partners were then in a position to capitalize on the lessons learnt and help their members give life to their sustainable energy projects! In total SMILEGOV assisted 56 sustainable energy projects to move along the U-curve<sup>1</sup> (see diagram) or in other words make some good steps along the usually not straight line towards the projects' realisation.

Some of these projects were already part of the partners' portfolios whereas others emerged as a result of SMILEGOV. In each cluster, the projects were selected against a number of criteria, i.e. level of maturity (e.g. pre-feasibility level), link with cluster priorities (in terms of technology and scale), degree of complexity, levels of administration involved etc. For each project specific barriers were identified and actions were undertaken to overcome them on the basis of analyses that included the following points:

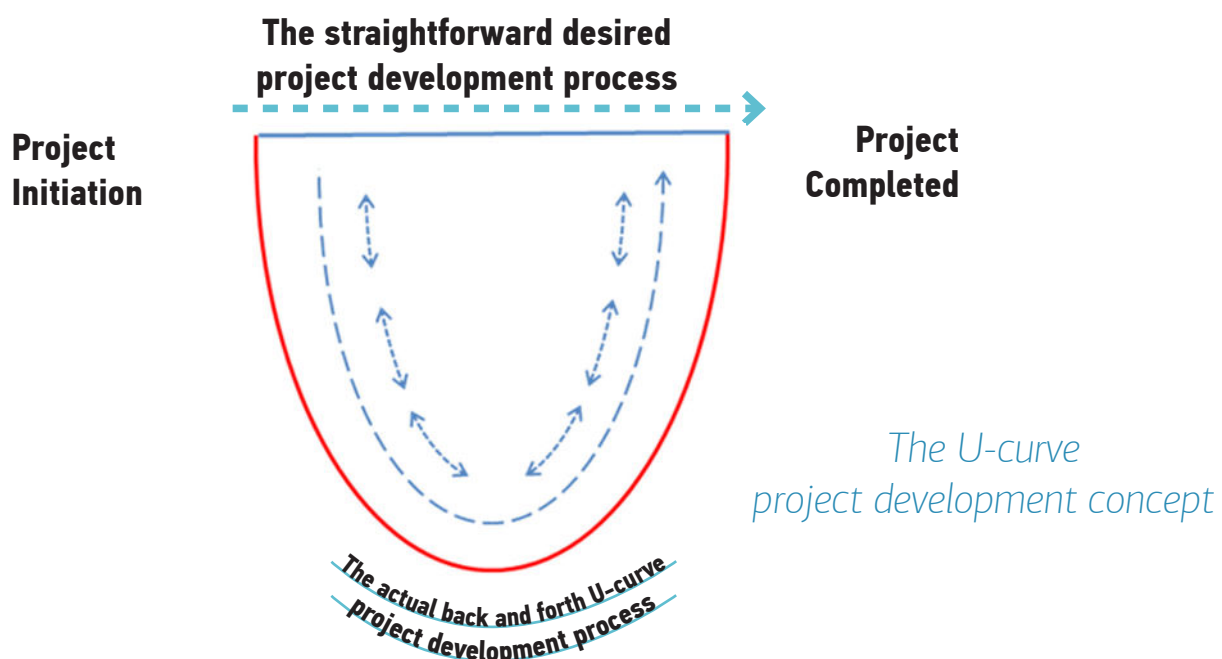
The identified bankable projects cover a wide range of innovative technologies and

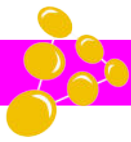
financing schemes. From the promotion of electric vehicles and relevant infrastructure, efficient street lighting, biogas for transport and heating, desalination with wind and hydro plants these projects demonstrate the potential of islands to act as test beds for innovative sustainable energy projects that can bring long-term benefits to island economies and local population.

For the project with the most significant progress and in the best position to secure financing each cluster leader prepared a shining factsheet which is presented in the Results and Impact chapter. Finally, in order to crystallise this project development experience all cluster leaders prepared Manuals for Sustainable Energy Projects Implementation and shared them with their cluster members.

<sup>1</sup>Based on the Otto Scharmer U theory

*Evaluation of technical and financial studies*  
*Regular meetings with all involved actors*  
*Examination of financing schemes available*  
*Stakeholders' analysis*





## 3. Results and Impact

### 3.1 SMILEGOV doubles the number of Pact of Islands signatories

The approach and methodology that SMILEGOV applied was founded on a basic premise: the need to set up a structure that catalyzes the exchange of knowledge between islands of different capacities acting on different administrative levels through intensive capacity building. The process of developing capacities among partners and cluster members bore significant and tangible results, creating an important precedent for sustainable local development in islands.

Capacity building activities were tailored to priority areas identified by each cluster and focused on capitalizing strengths and tackling weaknesses. They were structured in a way that provided cluster leaders with recurrent feedback on their usefulness and the need for adjustment in light of emerging needs. More specifically, capacity building was promoted through local workshops and bilateral meetings, targeting

island authority representatives and other stakeholders with a special interest in sustainable energy planning and project development but also through plenary workshops, focusing on relevant knowledge transfer from the more experienced to the less experienced SMILEGOV partners.

Further capacity building was promoted with the establishment of the SMILEGOV e-learning platform which served the purpose of extending the outreach of the project to actors from insular, coastal but also mainland areas within and beyond Europe who have an interest in sustainable energy planning and project implementation. Apart from building knowledge at a more strategic level, capacity building served a more operational purpose, that of helping 50 identified bankable projects in the different islands make significant steps forward.



## 3.2 SMILEGOV shinning sustainable energy projects

In what follows 12 shinning sustainable energy projects, one per cluster leader, which had significant progress along the U-curve during SMILEGOV are presented. The key energy and budget figures, the adopted MLG structure and the role of each player but also the recommended mechanism for their financing are highlighted.

### 3.2.1 Geothermal District Heating – Lesvos, Cluster of Greece

#### Project Short Description

The project is about extending and operating an existing non-operational pilot district heating network which uses as source of heat a geothermal field in the town of Polichnitos in Lesvos. The dubious ownership scheme of the installation together with the reaction of local stakeholders put the project in a permanent hold. With the support of the SMILEGOV the project has demonstrated significant progress with the involved parties having reached good consensus regarding the next phase of the pilot project after realising the win-win conditions of the project. The local society and stakeholders have been engaged to the project and a good maturity has been reached regarding the ownership and funding scheme.

#### The MLG structure

The different key actors involved in the project are:

1. Municipality of Lesvos: Has the single right to exploit the geothermal field and currently paying an annual fee to the state but has no benefit.
2. Region of North Aegean: Approves the use of the geothermal field and monitors the good operation of it and issues environmental licenses.
3. Ministry of Energy: Has assigned to the Municipality the right to use the geothermal drill until the end of 2015.

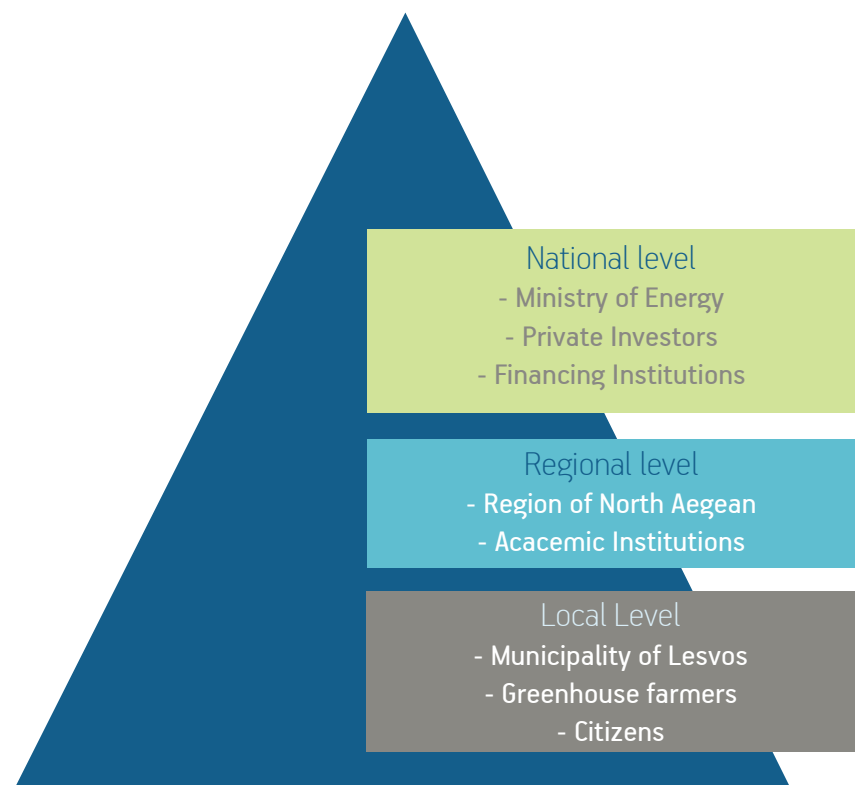
4. Local greenhouse farmers, the main business of the area, who object to the project in fear of not being able to exploit privately the geothermal field for their own profit.
5. Local citizens: Can benefit from the access to low cost heat for their houses.
6. Private investor: Investing in the pilot project and demanding at least part of this capital to be returned to him from the operation of the network.
7. Academic institutions: Members of the pilot project consortium who have significant research interest on the successful operation of the project.

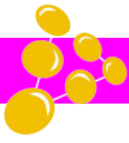
#### Recommended financing mechanism

Shared ownership and financing through the establishment of a common purpose

#### PROJECT INDICATORS

Estimated investment costs [€]: 2M  
Expected CO2 reduction [ton/year]: 1694  
Expected RES production [MWh/year]: 6345  
Expected energy savings [MWh/year]: 0





legal entity with participation of the private investor (partial owner of the pilot infrastructure), that has already invested in the pilot project and has significant technical

experience for its maintenance, the Municipal Development Company of Lesvos (owner of the drill), the greenhouse farmers and the local society through a cooperative.

### 3.2.2 Offshore Marine Energies Development – Isle of Man, Cluster of CPMR

#### Project Short Description

The IoM offshore marine energy park has two components: a marine energy (mostly wave energy) component and an offshore wind component. For the marine energy part of it, there is an evaluation under way to identify the best sites for future development. Regarding the offshore wind development, it is concluded that due to the size of the investment it is important to engage a big investor. The major issue in the was the intergovernmental negotiations between the IoM government and the UK government, as well as Ofgem, the UK energy regulator, in order to allow the offshore wind energy produced in IoM territory to access the UK power market.

#### The MLG structure

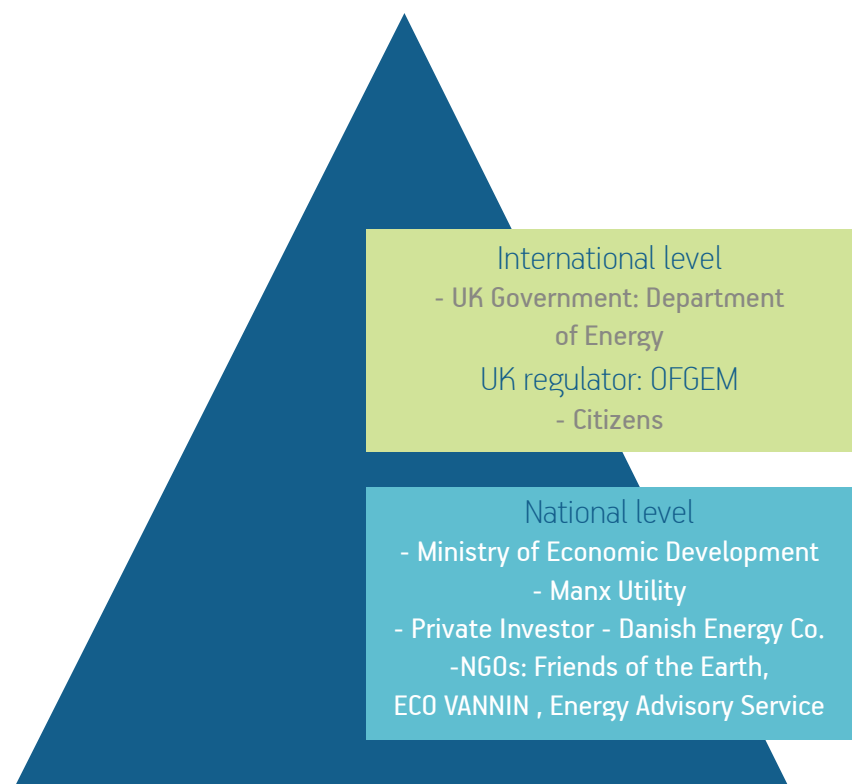
1. Isle of Man Government: exploring the opportunities for generation of offshore wind and tidal energy and inviting expressions of interest from parties seeking to develop offshore energy production in Isle of Man territorial seas.
2. UK Government: National level authority notably determining legal framework of energy market regulatory office in accordance with EU directives.
3. Ofgem: Office of Gas and Electricity Markets. Non-ministerial government department and independent National Regulatory Authority, it is independent of, government, the energy industry and other stakeholders within a legal framework determined by the UK government and the European Union. It determines strategy, sets policy pri-

orities and makes decisions on a wide range of regulatory matters, including price controls and enforcement.

4. Manx utility: Statutory Board of the Isle of Man Government sponsored by the Department of Infrastructure, responsible for supplies of electricity, natural gas and clean water; processing waste water, and delivering flood risk management services. Operates energy trading enterprise and two subsidiary businesses (commercial telecommunication and subsea cable).
5. ECO VANNIN NGO: consists of a group of local environmental organisations that have partnered with key IoM Government departments and the Manx

#### PROJECT INDICATORS

- Estimated investment costs [€] 20M
- Expected CO2 reduction [ton/year]: 28305
- Expected RES production [MWh/year]: 45000
- Expected energy savings [MWh/year]: 0



Utilities Authority to coordinate and develop environmental initiatives and projects.

6. Friends of the Earth NGO: Partner of ECO VANNIN, participation in the multi-stakeholders /multilevel dialogue
7. Manx Energy Advisory Service: independent charity promoting energy conservation, the use of renewable energy and providing independent advice and

information.

#### Recommended financing mechanism

The project needs an estimated investment of 2 billion GDP per site and has potential investors in place. Once the governance barrier is overcome and that the access to the UK power market for export and sale from the wind power sites is guaranteed, the potential investors can minimize their financial risks.

### 3.2.3 Deployment of Biogas infrastructure – Öland, Cluster of Sweden

#### Project Short Description

During the last years there has been great progress within biogas on Öland, and this goes for the whole chain through distribution, consumption and production. In the period of 2017-2027 the regional buses, including school buses, will most likely run on biogas. Furthermore in Mörbylånga is has been decided to change for 20 biogas vehicles in the public fleet. For Mörbylånga there is an agreement signed to establish the first filling station for biogas on Öland. This opens up the startup of a new section among the green businesses and a sustainable income for local farmers. Both in Borgholm and in Mörbylånga local farmers are planning to start production of biogas. Matching the demand with the production in the right timing and space has been a significant challenge in Öland. The Gotland experience transferred through SMILEGOV to Öland was a great inspiration.

#### The MLG structure

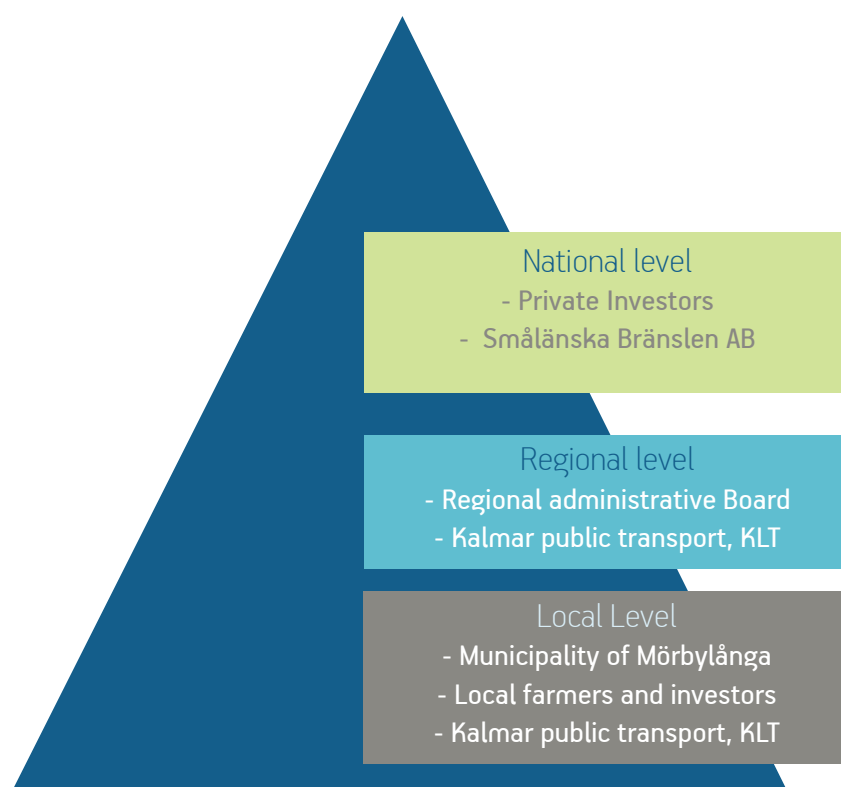
1. Municipality of Mörbylånga: Has the role is to investigate and bring forward the possibilities for biogas on Öland and to gather stakeholders to discuss cooperation and allocation of responsibilities.
2. KLT: The public transport operator in Kalmar County is currently opening up the procurement for the new transport

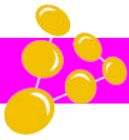
tation period, 400 buses, to run on 100 % renewable fuels.

3. Smålänska Bränslen AB: The enterprise who will build the first filling station on Öland, situated in Mörbylånga in the south of the island.
4. Local farmers and investors: The main actors in the process of starting and operating the biogas production and having a good relationship with farmers

#### PROJECT INDICATORS

Estimated investment costs [€] 10,7M  
 Expected CO2 reduction [ton/year]: 8000  
 Expected RES production [MWh/year]: 20000  
 Expected energy savings [MWh/year]: 0





1. is crucial.
2. Regional administrative Board: The board administers national funding for biogas development and investments in biogas plants.

Recommended financing mechanism

For biogas market development a PPP is the most appropriate and win-win financ-

### 3.2.4 Sports hall in Visby with solar energy – Gotland, Cluster of Sweden

Project Short Description

The new sports hall was built in Visby and inaugurated in autumn 2015. For heating of hot water and heating of the building both district heating and solar heating are used. The idea was to use the district heating system as a hot water accumulator for the solar water heating system. One of the biggest issues to resolve was how to measure and handle distribution of hot water to the district heating grid and to buy hot water when needed. To handle this, a new economic and practical setup between the management of the building and the grid owner was needed. To complement the energy production within the building an array of PVs are used to produce a majority of the electricity needed in the months of May to September.

The MLG structure

1. Region of Gotland: Establishment of and permission for a new district plan and building permissions and financing
2. GEAB (local energy company): Provision of district heating and help with planning of the solution to combine district heating with solar water heating.
3. Government of Sweden: In the phase of establishing laws on how to regulate

ing model. It is a great complicated puzzle which demands each actor to take its responsibility to create the whole picture. All partners must feel they gain something by cooperating and there is also a driving force in speaking out loud about the green approach and being part of a climate friendly society.

the energy companies when it comes to combining district heating and solar water heating.

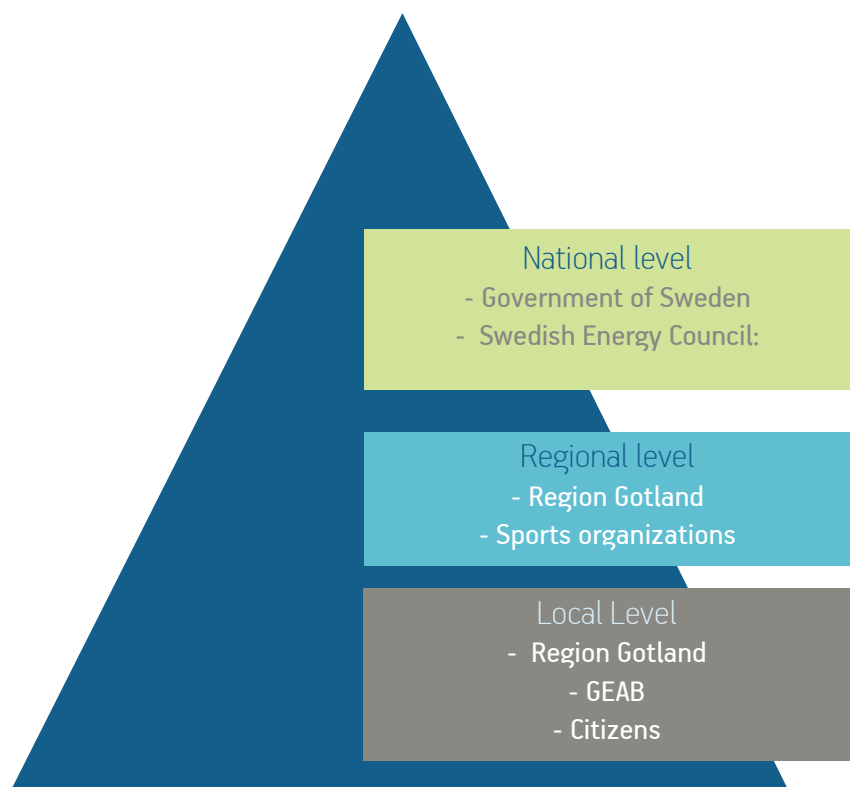
4. Swedish Energy Council: Partly financing of PVs and guidance combining district heating and solar water heating.
5. Sports organizations: Regulation at both national and international level.

Recommended financing mechanism

To be able to complete a project like the sports hall there are several financing

PROJECT INDICATORS

- Estimated investment costs [€] 9,6M
- Expected CO2 reduction [ton/year]: 3
- Expected RES production [MWh/year]: 24
- Expected energy savings [MWh/year]: N





structures that need to be addressed:

Regional funding taking into account the costs for running the building compared to the income from the sport organisations and events.

The tariffs for the district heating and selling and buying hot water for heating must be calculated. A win-win situation is

preferred to manage a lasting set up for the system.

National funding for PV installations.

Income from solar produced electricity compared to savings through net-metering.

### 3.2.5 Combined Heat and Power production – Vormsi, Cluster of Estonia

#### Project Short Description

Vormsi Commune has an old firewood boiler for more than 15 years, which needs replacement. This boiler provides heating to all houses of the commune (~1500m<sup>2</sup>) and this is too expensive because of the related handwork and repair. The plan is to replace the old firewood boiler with 2 small Combined Heat and Power (CHP) producing electrical power of 90 kW and heat power 200 kW. The two CHP plants are fueled by woodchips which is also very good, because ~60% of the island is forest area. Investment is 400 000 – 450 000€, which is a significant amount for a small commune. For this, a cooperative will set up, which faces some difficulties due to Estonian law. SMILEGOV partners with extensive experience in setting up and operating cooperatives provided useful support.

#### The MLG structure

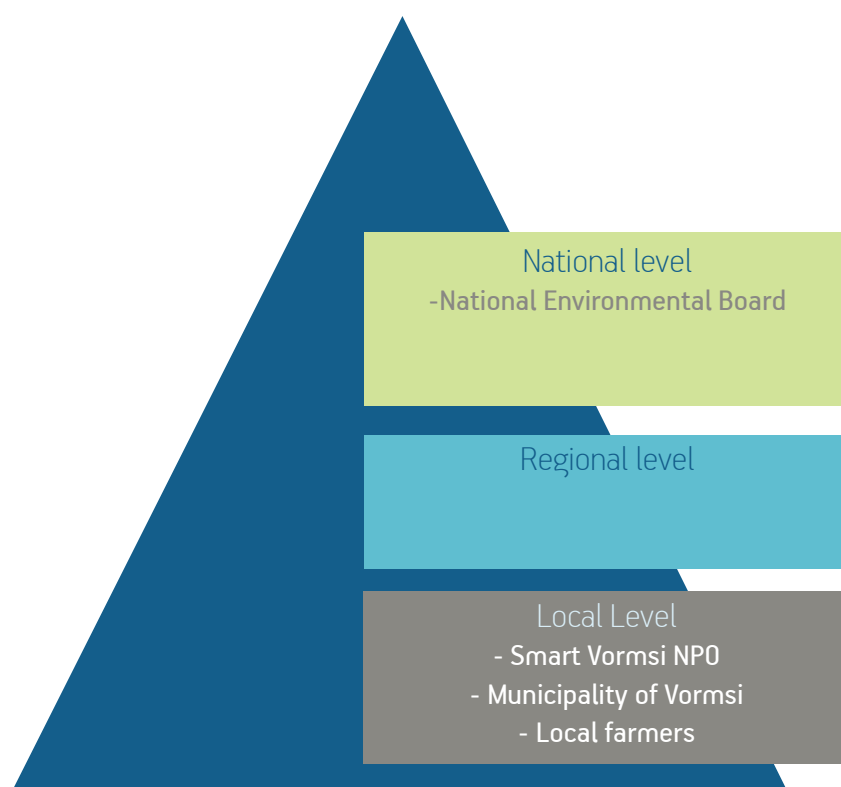
1. Smart Vormsi NPO: Will manage the project through all its stages and will seek to create a coop-owned structure
2. Municipality of Vormsi: Will be manage the planning process and will be the largest customer
3. Local farmers: Will provide biomass for the CHP plant and may join the coop
4. National Environmental Board: Responsible for approving the environmental impact assessment process

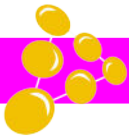
#### Recommended financing mechanism

The recommended financing mechanism will be a local owned model where local private investors will be organized in a private company structure. It will be investigated if it is possible to create a coop-owned structure allowing large and small owner ships in the project. Also it should be noted that the biogas plant will be coordinated with the Vormsi Municipality that will be biggest buyer of the heat.

#### PROJECT INDICATORS

Estimated investment costs [€] 0.44M  
Expected CO<sub>2</sub> reduction [ton/year]: 0  
Expected RES production [MWh/year]: 2200  
Expected energy savings [MWh/year]: 0





### 3.2.6 Small wind tyrbine – Keistiö, Cluster of ESIN

#### Project Short Description

Keistiö is a small island which is part of the Iniö former municipality, since 2012 a part of Pargas town (= municipality). There are 210 inhabitants in Iniö, 1,000 summer residents and 17,000 visitors/year. On Keistiö, there are 44 inhabitants (only one is a child). When the community was made a part of Pargas, street lighting wasn't integrated in the new organisation. For the island of Keistiö, this was a big cost until the old gas-bulbs were changed into 40 LED bulbs. An idea came up to get a wind turbine to produce local electricity to the street lights, to sell over-capacity locally and to use the income from the over-ca-

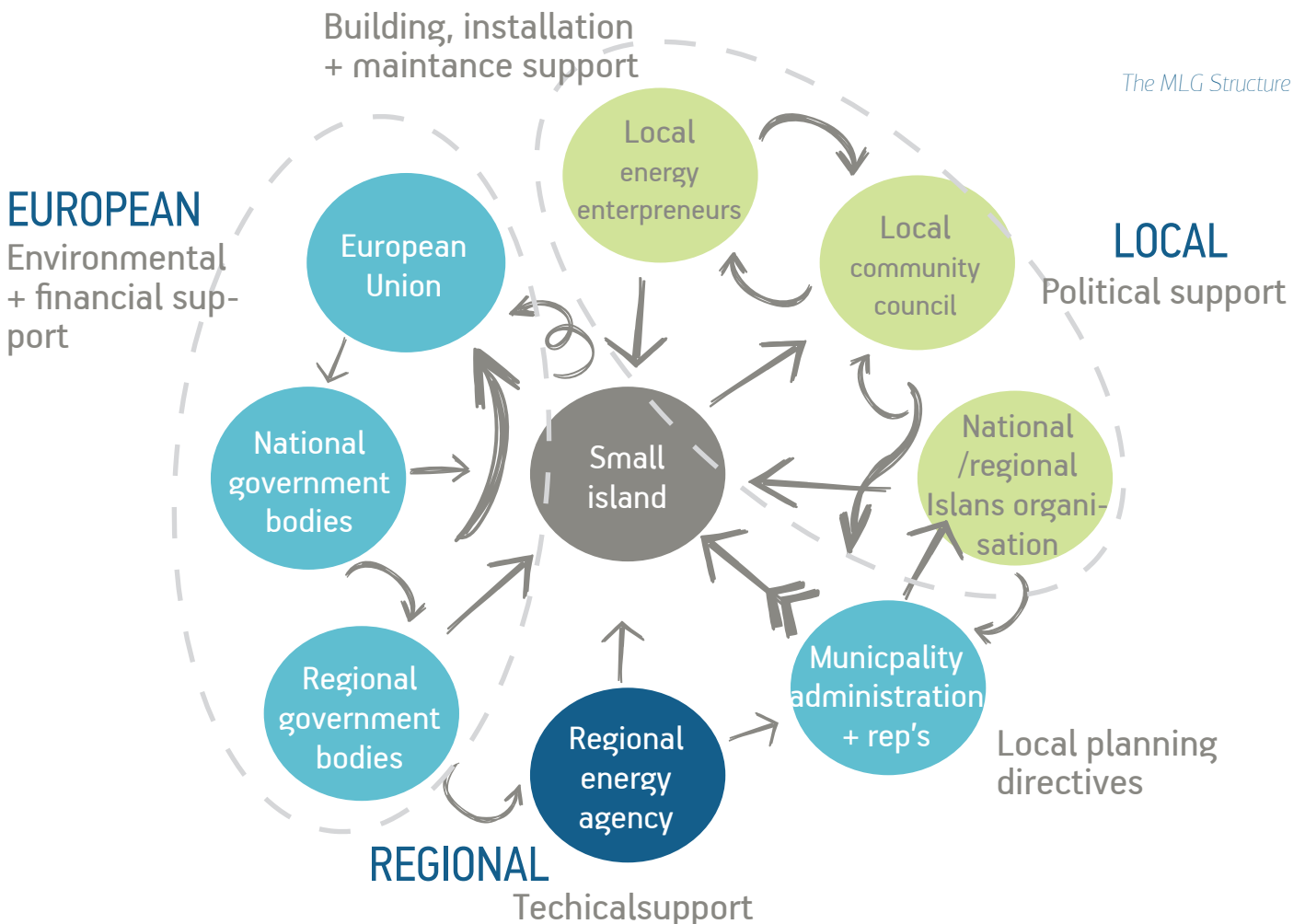
capacity to heat the community house. However, there had been opposition and barriers on the way, not only at local but also regional and national level. Resistance has been overcome with the help of SMILEGOV and the project has now been realised.

#### PROJECT INDICATORS

- Estimated investment costs [€] 25k
- Expected CO2 reduction [ton/year]: 5
- Expected RES production [MWh/year]: 5
- Expected energy savings [MWh/year]: 0

#### Recommended financing mechanism

The funding solution is a 75% grant from the local Leader program (of a total investment of 25,000€) and the rest as voluntary, local work. The turbine was raised on the 11th of September 2014.



The MLG Structure

### 3.2.7 Biogas plant – Samsø, Cluster of Denmark

#### Project Short Description

On Samsø the Municipality has built a new ferry that can run on marine diesel and LNG gas. Therefore it has been investigated how a locally owned biogas plant can be established to produce LNG gas to the ferry. Furthermore the biogas has to be upgraded to LNG gas.

The project is in the stage of feasibility studies. Calculations concerning the amount of biomass are being conducted and cooperation has been established between Samsø Energy Academy, the municipality and local investors and stakeholders to investigate different business models and funding schemes.

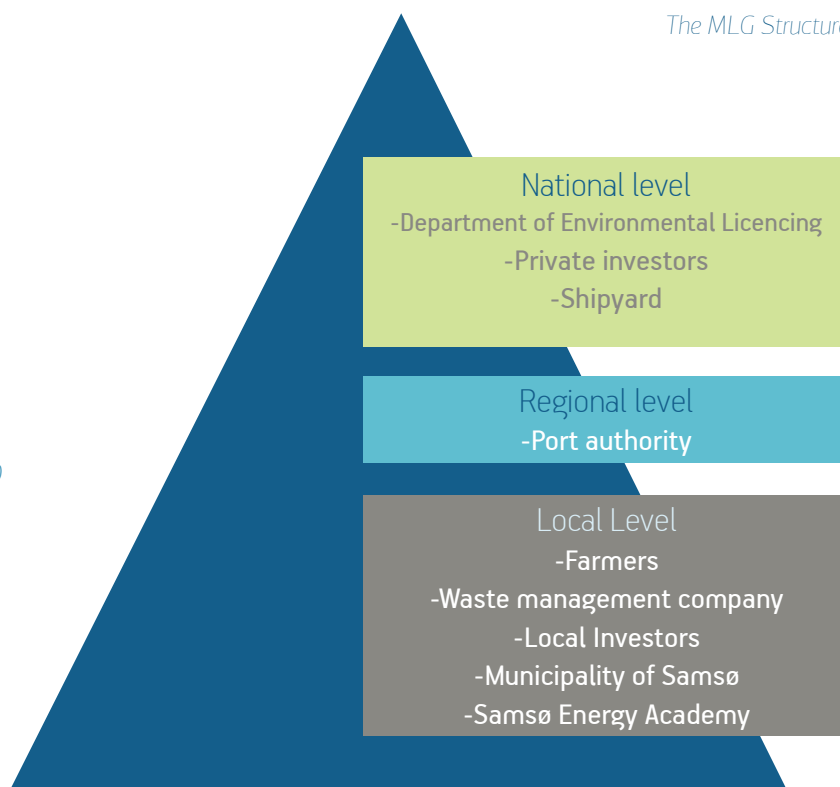
#### PROJECT INDICATORS

Estimated investment costs [€] 5,8M  
 Expected CO2 reduction [ton/year]: 90400  
 Expected RES production [MWh/year]: 1600  
 Expected energy savings [MWh/year]: 34000

#### Recommended financing mechanism

The recommended financing mechanism will be a local owned model where local private investors will be organized in a private company structure. It will be investigated if it is possible to create a coop-owned structure allowing large and small owner ships in the project. Secondly the biogas plant will be coordinated with the municipal ferry company that will be one of the buyers of the biogas – in order to up-grade the biogas to LNG.

The MLG Structure

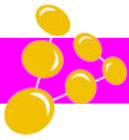


### 3.2.8 Multi-megawatt wind turbine – Gran Canaria, Cluster of Spain

#### Project Short Description

The harbour of Arinaga, at the south west coast of Gran Canaria, is a good site for on-shore wind turbine installation operating in off shore conditions. ITC, together with the Port Authority and the Gran Canaria Island Council set up MEGATURBINAS, a consortium interested in attracting manufacturers for new wind turbines testing.

During SMILEGOV period MEGATURBINAS has launched an international call for “Expression of interest” in developing R&D projects in the port of Arinaga. Meetings have been held with manufactures for an agreement on the technical and economic conditions for the use of the testing site. The manufacture ADWEN (Joint venture between GAMESA and AREVA) will start testing an 8MW turbine in the port of Arinaga by 2016.



### The MLG structure

1. MEGATURBINAS: Will lead the administrative procedures for installing the new wind turbines on the harbour.
2. Las Palmas Port: The authority responsible for licensing the installation of the infrastructure.
3. Regional Government: Issuing the environmental and industrial activity licences.
4. National Agency for Aerial Security: Authorising the installation since the testing platform is located in the airport approach area.
5. Electrical Grid operator (REE): Responsible to develop the needed grid infrastructure to absorb and control the electricity produced by the new wind turbine.
6. Wind turbine manufacturers: The final users of the testing platform inter-

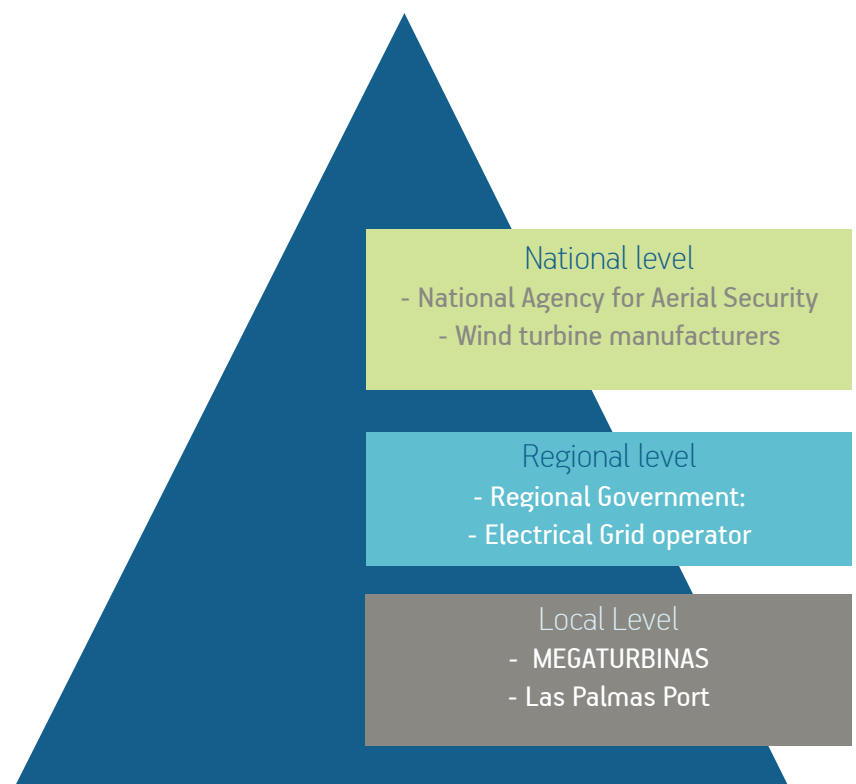
ested in the certification of their new machines.

### Recommended financing mechanism

The manufacturer that will be testing the new wind turbine needs to pay for the complete installation of the wind turbine: transport, mounting, operation, maintenance. Once the wind turbine is in operation it will be injecting the electricity produced into the insular electrical grid. This energy sold to the electrical grid will be paid at the normalised fee, representing the revenue streams of the manufacturer. MEGATURBINAS will charge a fix fee for the use of the platform and it will also get a percentage of the incomes from the energy sales.

### PROJECT INDICATORS

- Estimated investment costs [€]: 20M
- Expected CO2 reduction [ton/year]: 15400
- Expected RES production [MWh/year]: 40000
- Expected energy savings [MWh/year]: 0



### 3.2.9 Energy efficiency on street lighting – Madeira and Porto Santo, Cluster of Portugal and Cape Verde

#### Project Short Description

The project aims to increase the energy efficiency of street lighting in Madeira and Porto Santo Islands. It includes the following main activities: guides and regulation; data collection and database improvement to include efficiency attributes; identification of street lighting needs; control systems (dimmers, timers, light cells, IR sensors, on demand); high efficiency luminaires, lamps and ballasts. AREAM and EEM (electricity company) will identify sources of financing to support the actions. The investment costs supported by EEM and AREAM's costs that are not supported by any fund or grant will be charged to IPM (municipal association for street lighting) during a 5 year period with an amount less than the financial savings from energy efficiency to provide a positive impact from the beginning.

#### The MLG structure

1. AREAM: To support the technical and financial maturation of the project
2. EEM: To take over the implementation of the actions and financing
3. IPM: To represent all municipalities of the association.

#### Recommended financing mechanism

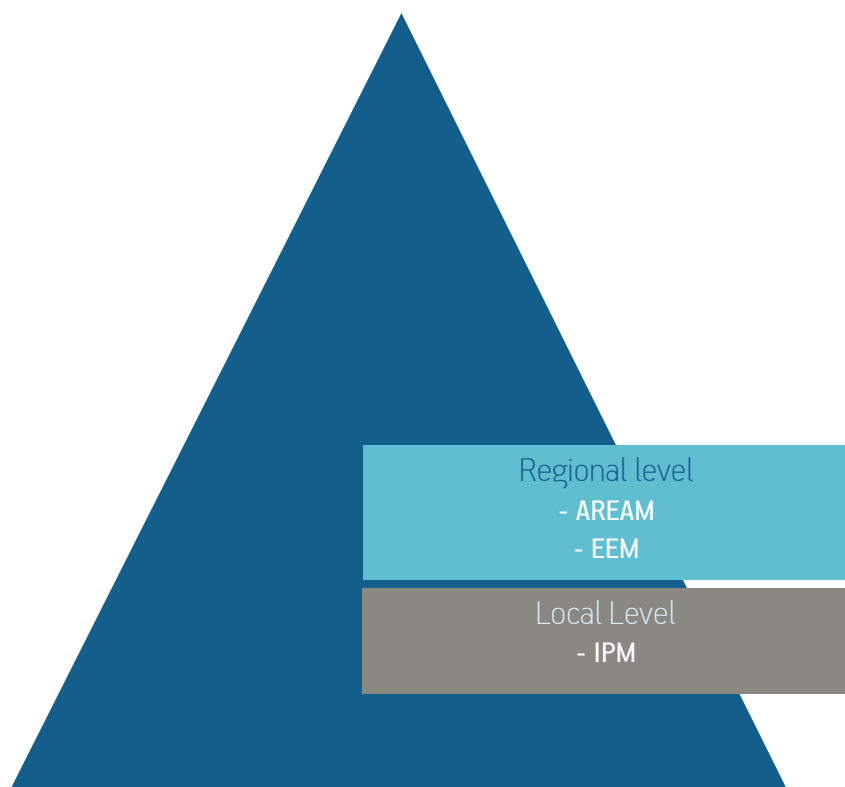
The ESCO model is an adequate tool for street lighting in many cities. However, the lack of experience of municipalities is a significant barrier to overcome. On the other hand, some municipalities are too small to have attractive projects for an ESCO.

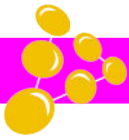
This process with municipalities showed that the typical ESCO contract is too complex for many municipalities and they are not confident with the legal aspects and business model. As EEM is a public company and AREAM a non-profit organisation, the process was successful by adopting a model with transparent costs and savings.

For the future, it is recommended that EEM, IPM and AREAM contract the services to an ESCO to proceed with the action in a faster way so as to improve energy efficiency and reduce costs of energy to municipalities.

#### PROJECT INDICATORS

*Estimated investment costs [€] 4,5M  
Expected CO2 reduction [ton/year]: 15500  
Expected RES production [MWh/year]: 0  
Expected energy savings [MWh/year]: 22000*





### 3.2.10 Upgrade of the street lighting in 20 local authorities, Cluster of Cyprus

#### Project Short Description

The project "Upgrade of the street lighting in 20 local authorities in Cyprus" concerns the territories of twenty (20) Local Authorities in several locations and districts of Cyprus and covers urban, rural and touristic areas. The total number of existing lighting that will be replaced with new lighting technology Light Emitting Diode (LED) are 55.940. During the life of SMILEGOV, the Cyprus Energy Agency (CEA) acted as a facilitator and technical assistant to support the project. CEA, managed to overcome the important barriers of the project by enhancing the involvement of competent authorities and stakeholders. In August 2015, the Cyprus Energy Agency was authorized

to be the contracting authority in favour of the 20 local authorities and was launched the call for tenders for Energy Performance Contracting.

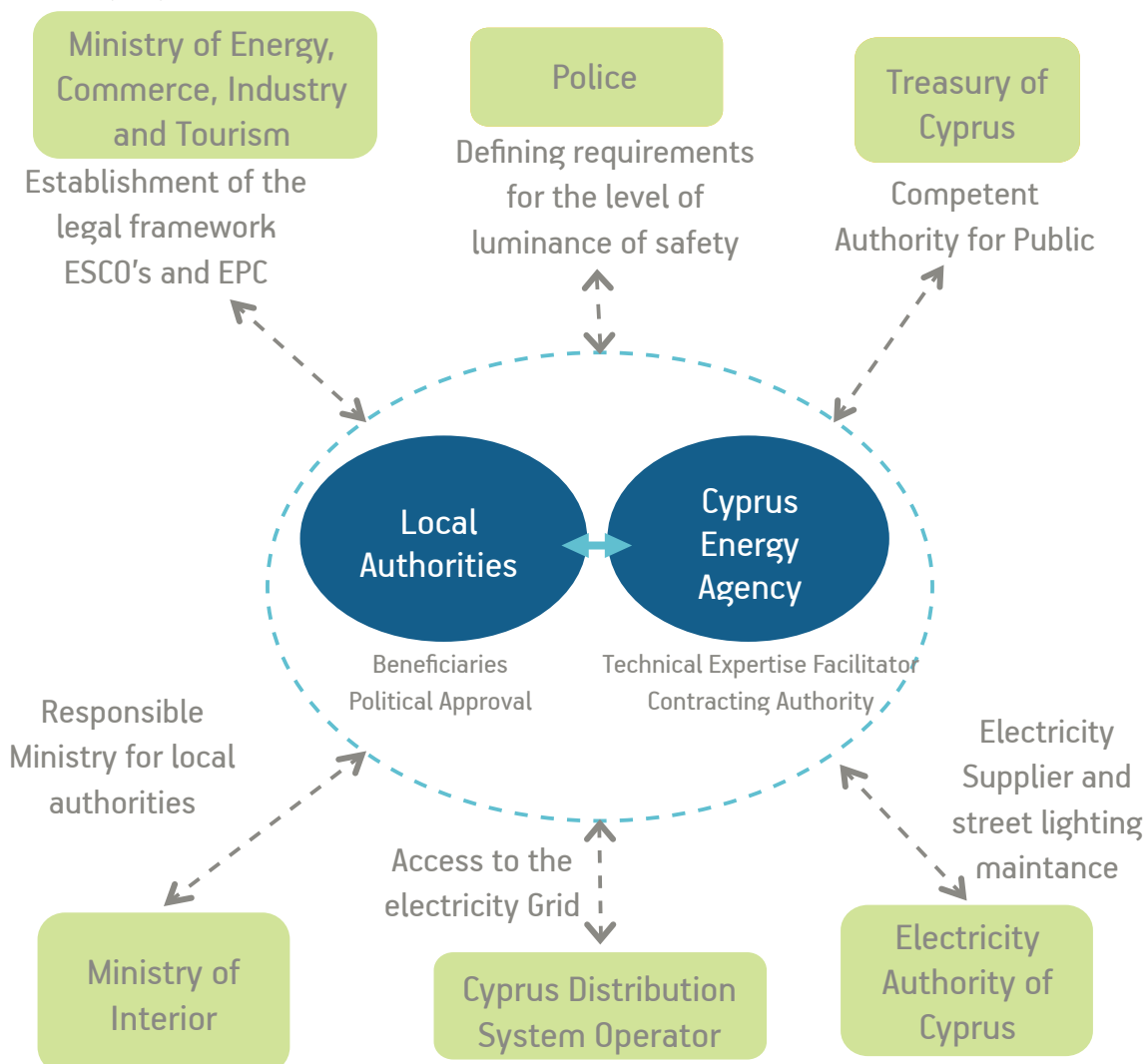
#### Recommended financing mechanism

The project is based on Energy Performance Contracting (EPC) where an Energy Savings Company (ESCO) implements the project to deliver energy efficiency. The Local Authorities will use the cost savings to repay the costs of the project to the ESCO, including the costs of the investment. Essentially the ESCO will not receive its payment unless the project delivers the

#### PROJECT INDICATORS

- Estimated investment costs [€] 20M
- Expected CO2 reduction [ton/year]: 598,8k
- Expected RES production [MWh/year]: 0
- Expected energy savings [MWh/year]: 1840k

The MLG Structure



### 3.2.11 Retrofitting Road and Street Lighting by Smart Lighting, Cluster of Malta

#### Project Short Description

The project proposed included retrofitting by LED street lighting and the implementation of Smart Lighting System. This involves two pilot projects that seek to implement street lighting energy efficiency measures in Malta and Gozo. The interventions focused on retrofitting street lighting by LED luminaries in the Gozo Pilot Project which took place in most roads and street lighting. The other pilot project took place in Malta in specific stretches. This project required the retrofitting of street lights by LED and the implementation of a smart lighting management system (including dimming and lighting network management and control).

#### The MLG structure

1. Ministry for Energy and Health (MEH): The main leader of this project and will also have the main person in the project review board.
2. Transport Malta: The entity coordinating the implementation of the Malta pilot project and will therefore be actively involved in all stages of the project.
3. Gozo Regional Council: Currently responsible for the local enforcement system and will soon be responsible for street lighting.
4. Ministry for Gozo: Responsible for arterial and distributary street lighting

in Gozo.

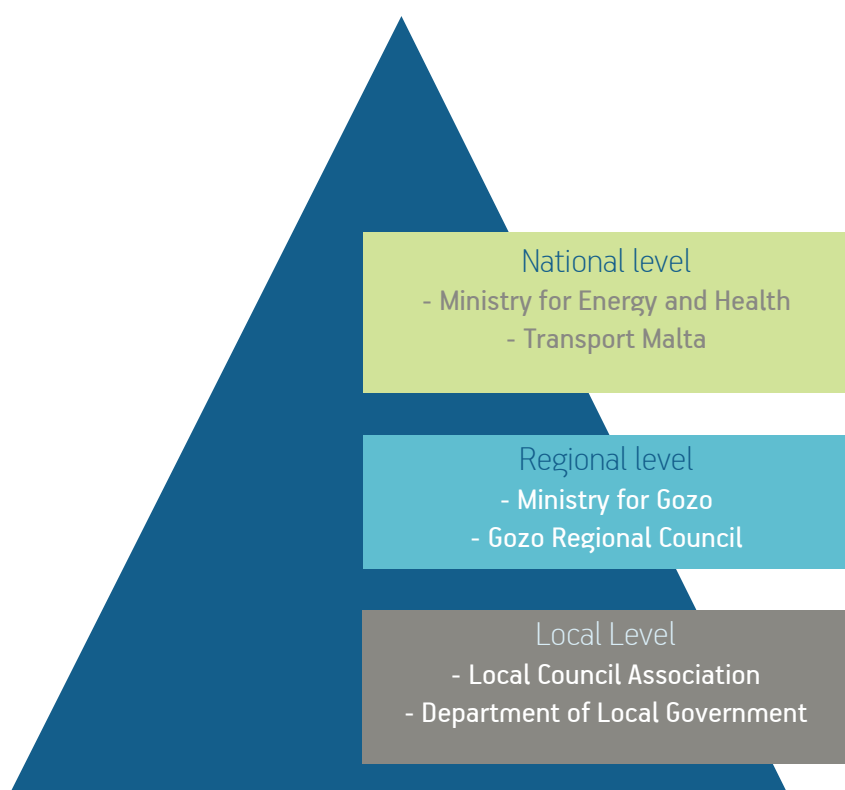
5. Department of Local Government: Responsible for local councils and will therefore will liaise with the Local Councils Association (LCA) and the Gozo Regional Council.
6. Local Council Association: Will be responsible together with the GRC of organising meetings with the Gozitan local councils and will also assist Gozo local councils in organising local awareness campaigns.

#### Recommended financing mechanism

The fact that lighting has been replaced by LEDs maintenance costs and time are reduced considerably. However, for the Gozo lighting the Gozo Regional Council is to take care of the lamps where necessary. The recommended mechanism is a public – private partnership with both sides splitting the savings.

#### PROJECT INDICATORS

Estimated investment costs [€] 3,1M  
Expected CO2 reduction [ton/year]: 1500  
Expected RES production [MWh/year]: 0  
Expected energy savings [MWh/year]: 1888



### 3.2.12 Assisting Communities to Connect to Electric Sustainable Sources (ACCESS), Cluster of Scotland

#### Project Short Description

At the start of the SMILEGOV project, the 'Assisting Communities to Connect to Electric Sustainable Sources' (ACCESS) project was at the conceptual stage, with only the key partners of Mull and Iona Community Trust and Community Energy Scotland identified. It has since progressed to include a complete project partnership with a secured funding package, confirmed interest from over 100 households in participating, agreement with the Distribution Network Operator (DNO) to operate a trial and share network data, agreement with an electricity supplier (SSE) to support the project and create a modified billing system for their customers and to partner with an off-island electrical contractor to oversee installations. SMILEGOV supported the collection of energy generation and demand data, which supported the design of the ACCESS project; increased the capacity of the local community group to engage with local householders and assess their heating needs; provided inspiration to the local community group from projects that are taking place on other partners' islands (ELENA Five Islands Smart Grid, Bornholm Eco-grid); provided a route for disseminating the learning from the ACCESS project to other island communities.

#### The MLG structure

1. Mull and Iona Community Trust: Provided direct engagement with the local community, through contacting households and small businesses to identify interest in participating; and by involving the community owned Garmony hydro scheme.
2. Scottish and Southern Energy: SSE enabled a regulatory compliant interface between Garmony hydro scheme and

electricity consumers on Mull.

3. Community Energy Scotland: Acted as project coordinator, establishing the external members of the partnership, and enabling an interface with national regulators, government departments, and other community groups.
4. VCharge: Key technology provider, by designing and operating the demand side management (DSM) system.
5. Element Energy: Specialist low carbon energy consultant, to assist in project design, reporting and data verification.
6. SHEPD: Network operator, key stakeholder for permitting trial to take place on public electricity network.
7. Power Networks Demonstration Centre: Independent smart grid testing environment allowed project to be de-risked by demonstrating compliance with SHEPD requirements.

#### Recommended financing mechanism

Because the project is at a pre-commercial 'demonstration' stage, commercial finance was not available. Initial feasibility and partnership development was funded through a competitive grant mechanism provided by the Scottish Government ('Local Energy Challenge Fund Phase 1').

Funding for delivery of the full project (including capital costs) was achieved by a combination of:

Local Energy Challenge Fund Phase 2 (£1,700,000)

Network Innovation Allowance (£340,000)

Private investment (£100,000)

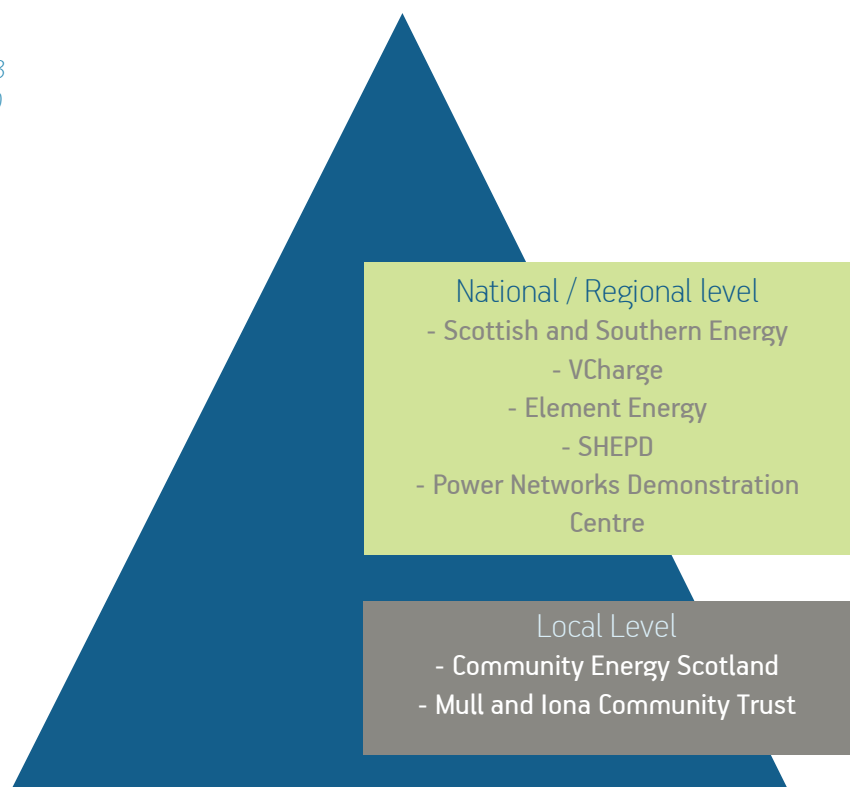
Partner own contributions (£300,000)





#### PROJECT INDICATORS

Estimated investment costs [€] 3M  
Expected CO2 reduction [ton/year]: 185  
Expected RES production [MWh/year]: 563  
Expected energy savings [MWh/year]: 710



#### National / Regional level

- Scottish and Southern Energy
- VCharge
- Element Energy
- SHEPD
- Power Networks Demonstration Centre

#### Local Level

- Community Energy Scotland
- Mull and Iona Community Trust



## 4 Conclusions and Recommendations

Because the project is at a pre-commercial 'demonstration' stage, commercial finance was not available. Initial feasibility and partnership development was funded through a competitive grant mechanism provided by the Scottish Government.

SMILEGOV succeeded in establishing a network of 12 European Sustainable island clusters with 163 cluster members covering all the EU island regions creating and ideal space for experience and knowledge transfer among islanders.

SMILEGOV succeeded in engaging 57 new islands or island authorities to local sustainable energy planning and project development by signing the Pact of Islands.

SMILEGOV succeeded in developing practical Strategic Guidelines on enhanced MLG solutions, building on good practices and

experience of well-functioning MLG from island projects and processes.

SMILEGOV succeeded in moving steps forward 56 sustainable energy projects by providing different services to cluster members depending on the barriers confronted in each project.

SMILEGOV succeeded in developing a toolbox to support the elaboration of sustainable energy projects consisting of guides and tools which were used by cluster leaders in local capacity building activities and were also distributed to the cluster members.

SMILEGOV succeeded in distant training 312 trainees through the "Energy Academy 2020"; e-learning platform while the identification of new trainees still continues.

### WHAT WE LEARNED ?

**Networking between islands at territorial and inter-territorial level can create significant benefits**

Sharing information and exchanging experience is extremely valuable for islands. It is a means of building capacity within islands through the empowerment of island authorities and stakeholders and reinforcing cooperation between islands to develop joint responses to common problems. Once the seed of cooperation is planted, then long-lasting collaborations may flourish!

**Strategic EU-wide initiatives like the Pact of Islands can assist the engagement of authorities**

Keeping in mind the big picture of cooperation at a European scale is crucial. After all, islands are part of the European family and for this they take action to contribute to the Union's policy priorities. The Pact of Islands is an important initiative that sheds light on the challenges and more so the potential of islands to drive Europe's transition to a low-carbon economy.

**Technology is there, the money is there, what we miss is cooperation among key actors under win-win conditions**

A recurrent theme is that of cooperation – this is because cooperation is not a given. On the contrary it takes time, it is a trust-building exercise that requires commitment and concerted effort. Proper stakeholders' analysis can help identify who's affected the most

and what's in for different actors in a certain project. This helps overcome barriers related to communication and highlight the win-win potential of a project, thus saving time and resources.

### **Involving citizens in shared ownership and funding schemes can assist overcoming barriers related to local conditions**

One of the most important lessons learnt to ensure a project is implemented successfully is to enhance the sense of ownership among citizens of the territory where the project is being developed. This can be achieved through extensive consultation and most importantly through funding schemes that bring on board the local population, like cooperatives and crowdfunding. SMILEGOV developed a toolbox, with information on innovative financing schemes island authorities can benefit from.

### **When the work is financially too risky or too technical, partnering up with the private sector may be the right choice for local authorities**

Public Private Partnerships and Energy Performance Contracting with the use of Energy Service Companies are two good options for local authorities, helping them overcome barriers that related to financing or limited technical expertise. SMILEGOV produced a toolbox with guidance on how to use these two financing tools, while the projects from Madeira, Porto Santo and Cyprus provided a great source of inspiration for the whole partnership.

### **The inherent island characteristics may turn into strong advantages when it comes to innovative technologies making islands ideal test-beds**

Insularity is double-edged sword: it brings with challenges but also significant growth potential that remains untapped, particularly with relation to the testing of innovative sustainable energy technologies. The project of ITC, together with the Port Authority and the Gran Canaria Island Council set up MEGATURBINAS, a consortium interested in attracting manufacturers for new wind turbines testing. The platform was designed for two to three positions, in order to test simultaneously different wind turbines. MEGATURBINAS will lead the required administrative procedures for installing new multi-megawatt wind turbines on the dock.

## RECOMMENDATIONS FOR FUTURE ACTIONS

### ***Keep the network alive – New projects – Formalise through legal entity***

SMILEGOV must remain alive! The partnership must sustain open channels of communication that can lead to the birth of new ideas and project proposals. More importantly partners should strive to move one step forward and formalise their cooperation by establishing a legal entity that gives voice to islands at a European level.

### ***Support elaboration of iSEAPs for new comers – Take advantage of snow ball effect and invite new islands – Develop a Pact of Islands website***

Newcomers that signed the Pact of Islands in Brussels in June 2015 and helped extend the European islands family should receive the necessary support to develop island Sustainable Action Plans in their territories. At the same time, it is necessary to build on the momentum, develop a Pact of Islands website and capitalise on the results of the project, all while making it attractive for newcomers to join.

### ***Set-up trainings focused on smart project development techniques***

Developing capacity was at the heart of SMILEGOV and efforts must focus



now and in the near future on developing training sessions for island local authorities on smart project development, i.e. elaboration of technical/financial prefeasibility studies, early stakeholders' engagement, enhanced cooperation with different levels of administration etc.

***Monitor the adoption of these techniques by local authorities when implementing pilot applications***

To ensure the knowledge produced is put in practice in a consistent way, it is necessary to develop processes and tools for effective monitoring and evaluation. This will help island authorities standardise their work and become more capable of coping with project development and implementation.

***Realise and communicate projects funded in whole or partially by coops and crowdfunding to spread the word – Here it comes the snowball effect again***

We need to capitalise on success stories related to cooperatives and crowdfunding. This entails communication to spread the word and inspire but also concrete implementation of such schemes. We need to focus on islands that are willing to make use of these tools, but still need help to make things happen!

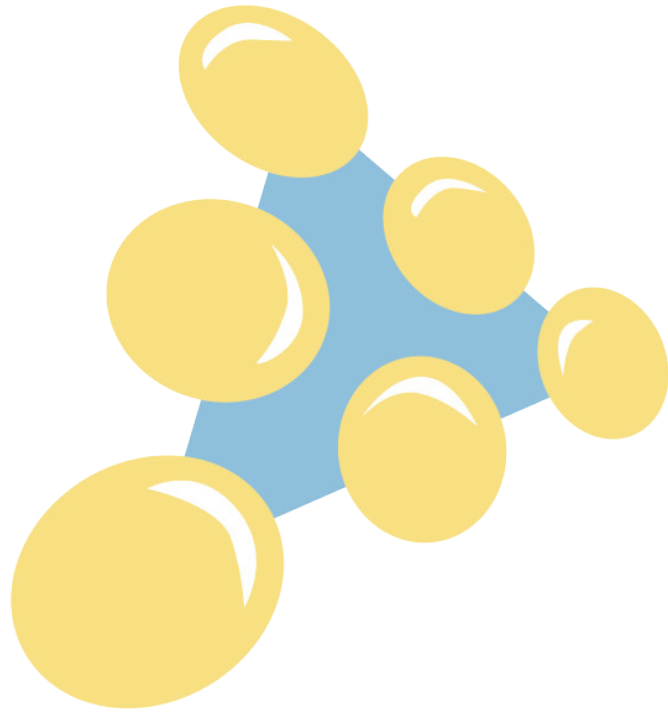
***Focus on replication of existing examples – We do not reinvent the wheel***

***Apply for technical assistance***

There is a whole lot of experience out there, so no need to reinvent the wheel. To help projects mature and become bankable, local authorities should cooperate, create economies of scale and make their case attractive for technical assistance. The example of DAFNI, where 5 Aegean islands of different size came together and secured funding from the ELENA fund of the EIB shows the way.

***Participate in demo projects – Network with companies on the technology innovation sector***

Demonstration can provide useful insights on the type of technology that suits an island territory. For this local authorities need to become more extrovert and provided they have some basic technical capacity, start networking with technology companies to explore possibilities for pilot project implementation on islands.





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