



# THE GREENING ISLANDS

Connecting Island Innovations



**CiRCle 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

Cyprus 28/29 March

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# Who we are

**Greening the Islands is an innovative organization that supports self-sufficiency and sustainability of islands worldwide.**

We match needs and solutions enabling cooperation between local authorities, business, citizens and academia.



academy



observatory



conferences



App



What we do



## GTI Observatory

A global initiative that **aggregates key stakeholders** to match island needs and innovative solutions in energy, water, mobility and environmental sectors.

The GTI Observatory facilitates the development of **shared strategies between governments and corporates**.

### The GTI Observatory Context

- **COP 21:** islands recognised as an ideal laboratory for technological innovation against climate change;
- **Greening the Islands in Favignana:** European Commission launched “Clean Energy for EU Islands” initiative to support the energy transition of EU islands from 2020 to 2030.
- **Malta 2017:** political declaration signed to accelerate renewables energy transition in more than 2.700 UE islands;
- Several global institutions such as UN and IRENA have started specific programs for small islands development states (SIDS).





## Observatory main activities

1. Selection of islands
2. Plenary and island meetings with members
3. Reports

### Topics:

- Environment status of the islands
- Policies & regulations
- Incentive schemes
- Permitting
- Technologies & solutions
- Cost
- Pre-feasibility analysis on potential projects
- Public/private funds (EU funds, World Bank, etc.)
- Recommendations for decarbonisation plans
- Best practices
- Sustainable tourism opportunities



**1<sup>st</sup> GTI Observatory launching event**  
**5° GTI Int. Conference Minorca May 2018**



**2<sup>o</sup> GTI Observatory Meeting**  
**Rome November 2018**



## GTI Observatory Crete Island Meeting

Two days meeting in Crete/Greece, hosted by the Island' Government, involving all key local stakeholders, corporate and industry associations members.

The meeting' goal was to run a deep dive into islands status and needs, facilitating the origination of projects also through site visits.





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## GTI Observatory Crete Meeting

The priorities emerged by the Observatory Crete Island Meeting organised by sectors

### ENERGY



- **Storage system implementation**, distributed and concentrated, to support the increase of renewables (in the short-term focus on storage projects for wind farms already under permitting)
- **Local energy communities and cooperative model** to be tested in Crete. Analysis of the actual Greek legislation on the topic.
- **Hybridization of the 3 thermal plants with renewables** – analysis of actual Greek regulation
- **Energy efficiency policy and solutions for hotels, buildings and street lights**
- **Social acceptance** of RES in Crete
- **Security of supply** – RES diversification and policy for RES dissemination
- Control grid implementation – **smart grid**





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### WATER



- Drought protection and overall efficiency in water management. **Analysis of the losses in the water grid and solutions.**
- **Water management strategy to face the fluctuation of the demand** from winter to summer due to tourism
- Seawater **desalination**, including **environment brine impact**, and wastewater reuse.
- **Preventing aquifer overexploitation**
- **Pumping efficiency**



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### MOBILITY



- Analysis of **car sharing** and pooling models in Crete. **Pilot in Heraklion.**
- **Electrification of ports and vessels:** charging **infrastructure and policy** to promote use of electric boats
- Policies to incentive the use of electric cars, **restrictions for polluting vehicles in urban areas.** Create a business model to **encourage private companies to support adoption of electric cars**
- Examine the possibility to develop a **V2G (Vehicle to Grid) pilot.** Proposal for some revisions of the legislation
- Analyze the possibility to create **specific road path for bicycles**
- Policies to encourage the use of renewable energy sources for mobility
- Analyze the possibility of **development of a web-app to support the use of electric vehicles by locals and tourist** users also from Crete to other destinations



## GTI Observatory Crete Meeting

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### WASTE



- **Proposals of new methods to increase separate collection** starting from glass, paper, metals, plastic and organic waste from hotels and markets and then implementation of domestic organic waste collection;
- **Evaluate biogas plants for organic waste and domestic composting for remote areas;**
- Analyse the opportunity of **organic sludge treatment and reuse for agriculture;**
- Proposals of **methods to increase collection and reuse of demolition materials;**
- **Proposals of awareness campaign for Crete population;**

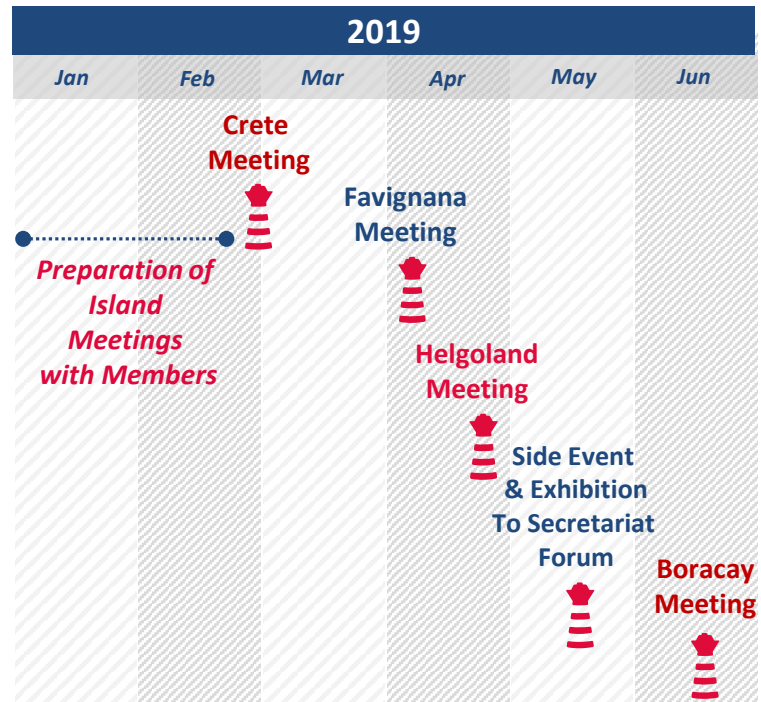


## Ongoing activities

## Data collection on the Observatory topics.

Two days meetings in each island of the Observatory, hosted by the Islands' Governments, involving all key local stakeholders, corporate and industry associations members.

The meetings' goal is to run a deep dive into islands status and needs, facilitate the origination of projects also through site visits.







**Analysis** on the status of the island for the areas involved in the study **by specialized professionals**



Identification of  
**innovative solutions**



**Recommendations of actions** for the local population and enterprises



**Benchmarking** with the other selected islands



**Finance opportunities:** private investors or public funds (EU, World Bank, etc.)



**Promotion** of the island as a **green destination** for a tourism oriented to sustainability



### Islands Members



### Gold Members



### Members



### Associate Members



### Industry Association Members



# observatory

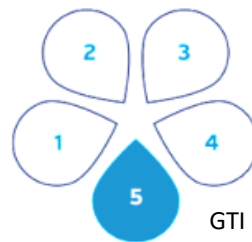
## Global Index



## Greening the Islands Observatory Global Index

is a new way to measure environmental  
actions on islands around the world

The index will be produced as part of the GTI Observatory's work to measure the progress that islands around the world are making towards a greener future and how islands are designing and implementing policies for sustainable development.



GTI drop system will  
highlight and rate the  
best islands on sustainability



**Governments/Municipalities of any island** that have made or started actions to reduce CO2 emissions in their territories can apply to the **Greening the Islands Observatory Global Index**.

Companies or other stakeholders involved in those actions need to cooperate.



Energy



Water



Mobility



Waste



Environment





**The GTI Academy aims to build capabilities in the islands to support the implementation of the needed decarbonisation actions that will emerge from the Observatory reports.**

What does it mean transitioning an island towards a green economy?  
How can be approached?  
Which are the major challenges to overcome?  
Which is the best path towards implementation?  
What are the benefits for the islands?  
What does it mean to become a green destination?

**Target: leaders of island government and institutions, including senior technical staff, utilities, managers of companies.**



## GREENING THE ISLANDS for KIDS



### MOBILITY

Use least polluting means of transport. It would certainly be better to reduce the use of the car, motorcycle and plane and to go by train, use public transport, a bicycle, or go on foot. If we have to use our car, we should use car-pooling solutions to share the car with other people travelling to the same place. We should give preference to electric vehicles, especially with regard to transport and service vehicles.



### WATER

Reduce water consumption by closing the tap while brushing your teeth or shaving. This single habit can save 6 litres of water per minute. Taking a shower instead of a bath can cut water consumption by 75%. Repair leaking taps. A plumber may solve, in just a few minutes, a problem that causes the loss of 21,000 litres of water per year and per tap. Install aerated faucets, which make it possible to save water while maintaining the same pressure and taking consumption. Always use your washing machine and dishwasher with a full load. This saves electricity and cuts water consumption by 8,200 litres per year.

### WASTE

Recycle the waste we produce. A lot of raw materials and a lot of energy are used to manufacture products and greenhouse gases are produced in the manufacturing process. Therefore, it is very important to recycle waste, which can be used to manufacture new products. We should not use disposable goods such as plastic plates and cutlery and we should use water canisters instead of plastic bottles. In general, we should drink tap water instead of bottled water.



## CLIMATE CHANGE many islands are disappearing

**THE BIG CHALLENGE  
WE MUST FACE ALL TOGETHER**

*"Climate change is the key challenge of our time. Our generation is the first to experience the rapid increase in temperatures all over the world and probably the last that can effectively combat the imminent global climate crisis. We collectively have the obligation towards future generations to do everything humanly possible to stop climate change as well as to adapt to its adverse effects."*

(Heads of State at COP 24, the Conference of the Parties on Climate Change held in Katowice, Poland, in December 2018)

### ISLANDS AND CLIMATE CHANGE

Islands have generally a more fragile environment than continental areas, due to their limited surface. Depletion of natural resources does not only occur more rapidly on islands, but the consequences of such depletion can be more severe and irreversible than on the mainland. Islands are generally more exposed to the direct effects of climate change. Their territory is obviously impacted by any rise of sea levels and is frequently more affected by weather instability. Islands are also generally very exposed to migrations flows, induced either by wars or by climate change. The smaller size of islands also exposes them to more difficulties in absorbing waste and pollution. A proper management of energy, water, mobility and waste is essential for islands.

### CLIMATE CHANGE: THE EARTH HAS GOT A FEVER

The greenhouse effect is a natural phenomenon through which the atmosphere retains the sun's energy. Gases such as carbon dioxide (CO2) and methane (CH4) work as a sort of "roof". During the day, the sun shines and its rays pass through the atmosphere down to the Earth and heat the Earth's surface. During the night, the Earth's surface cools down by releasing heat into the air. But part of this heat is trapped by greenhouse gases. This phenomenon ensures warm and comfortable conditions to our planet. However, if there are too many greenhouse gases in the atmosphere, the greenhouse effect becomes too strong and the Earth overheats, thus producing a climate change. This is what is happening now.

### WHO PRODUCES GREENHOUSE GASES?

According to scientists around the world, human activities have generated huge additional volumes of greenhouse gases, thus causing an increase in the average temperature of the Earth. Greenhouse gases are produced by emissions from industries and power plants, transport vehicles, residential heating and cooling systems.

### WHAT HAPPENS IF THE EARTH GETS A FEVER?

The consequences of global warming can be observed throughout the world. The temperature is increasing, causing the melting of polar ice caps and an increase in sea levels. Many islands could disappear and those who live on coastal areas may be forced to move. Millions of people may have to look for somewhere else to live. Fires are more and more frequent, so is drought: there is a lack of water for animals, land is becoming



arid, crop farming is harder and famine is a threat. Frequent tornadoes and hurricanes, which have destroyed cities and villages in the last few years, are also related to climate change. Biodiversity is decreasing, many animal and plant species could disappear, to the point that we talk about the Sixth Extinction in history.

### PARIS AGREEMENT ON CLIMATE CHANGE

The Global Agreement on Climate Change contains 29 articles, resulting from long discussions among representatives of almost 200 States, who met in Paris in December 2015. Obviously not all Countries can take commitments immediately, many Countries still need to get organized and unfortunately the United States, one of the largest producers of greenhouse gases, decided not to support the Paris Agreement.

The 5 main goals and objectives of the document:

1. To keep the global temperature increase below 2°C
2. To meet at least every 5 years to discuss the status
3. To invest in research to find other forms of clean energy (renewables) such as solar energy and wind power, which are replenished over a short period of time without harming the environment
4. Help Countries that have suffered major damages due to climate change, such as floods, drought or fires
5. Involve all States (and people) of the world in the fight against climate change

### WHAT CAN WE DO TO COMBAT CLIMATE CHANGE?

We must stop emitting CO2 and other gases which cause climate change. Governments are looking for global solutions, but we can give a very important contribution every day in four major areas: energy, water, mobility and waste.

### ENERGY

Shift to renewables. Solutions to produce clean energy are already in use: solar energy, wind power, hydroelectric power, geothermal energy... but it is important to exploit them more. For example, at home we may decide to use renewable energy by changing our power supply contract. Energy saving. There is a lot of energy waste in our homes. We can reduce consumption by using low-consumption light bulbs (fluorescent tube light bulbs or led light bulbs) low-energy appliances with A++ rating, double or triple glazing, or by installing solar panels on our roof or a coat for our house.





## News | Forums | Networking | Webcast

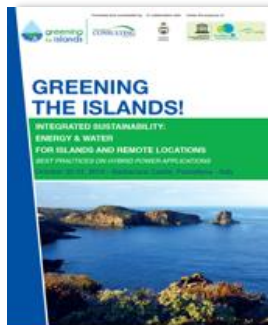
### Online Community

We provide a variety of communication and training tools for the network: live conferences, online discussions, webinars and thematic forums



### Live Streaming

We connect the conference and the island with a wider audience around the world



Pantelleria 2014



Malta 2015



La Maddalena 2016



Canary Islands 2016



Favignana 2017



Menorca 2018



Roma 2018

Since 2014 Greening the Islands has organized nine international and national conferences promoting the **enlarged concept of circular island economies, developing the nexus between energy, water and mobility** and embracing also waste, agriculture, tourism, culture and traditions.





## awards

Since 2015, Greening the Islands Awards has recognised the best solutions on energy, water and mobility as voted by prestigious jury members as well as community members.



**Emanuele Taibi**  
Islands Energy Transition Analyst,  
The International Renewable Energy  
Agency (IRENA)



**Georges Kremlis**  
Honorary Director - Directorate  
General for the Environment,  
European Commission



**Helmut Morsi**  
Adviser to the Director and  
Coordinator for Innovation, European  
Commission, DG MOVE-B



**Konstantina Toli**  
Senior Programme Officer,  
GWP-Med (Global Water Partnership  
– Mediterranean)



**Michela Miletto**  
UN WWAP Deputy Coordinator  
UNESCO



**Philippe Vangeel**  
Secretary General, European  
Association for Battery, Hybrid and  
Fuel Cell Electric Vehicles (AVERE)

GTI Jury 2018



# GREENING THE ISLANDS

Thank you!

*Join us to connect island innovations*

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