

Energy transition of the pilot island Salina

Three days of discussion and definition of the route for the Agenda to 2030

In Salina, from June 27 to 29, the "Green Salina Energy Days" took place, an event organized by ENEA, with the participation of all partners of the Clean Energy for EU Islands project: the Regione Siciliana Department of Energy, the Municipalities of Leni, Malfa and Santa Marina Salina, the Hotel Association "Salina Isola Verde", the National Institute of Geophysics and Volcanology (INGV) and the environmental association "Marevivo" non-profit organization.

The three-day meeting in Salina was an opportunity to discuss, collect and evaluate proposals, ideas and critical issues, useful to define the energy transition agenda of Salina and later those ones of Pantelleria and Favignana (the other two Sicilian islands designated by the Clean Energy for EU Islands Secretariat, as pioneer islands for 2020). The immediate objective of this designation is, in fact, the drafting, by 21 September, of the so-called "Agenda of the energy transition", in which objectives and actions will be indicated with the horizon 2030.

The focus of the three days of work was primarily focused on energy, but discussions have also broadly interested very important and connected topics, water and waste, the economic and social outlook, connected to the transition, and the "resilience" of the entire, delicate, island system.

The works were coordinated by the ENEA's Department of Energy Efficiency Unit, represented by Ilaria Bertini, Head of the Department, Francesco Cappello, Head of the Southern Area Regions Laboratory, and by Maura Liberatori, Head of Communication Tools Laboratory for Energy Efficiency.

The meetings had focused on governance and technological aspects necessary to seize the opportunities and overcome the problems, linked to the island decarbonisation path. The winning formula chosen was to organize three think tanks in the evening, held in the three municipalities, and two seminars at Malfa auditorium for a commitment of all relevant players: the mayors of the three municipal administrations involved, dr. Clara Rametta, mayor of Malfa, prof. Giacomo Montecristo, mayor of Leni and dr. Domenico Arabia, mayor of Santa Marina Salina.

The other partners of the project were present and collaborated in the success of the events: the Regione Siciliana Department of Energy, with Irma Monteleone, the Association of hoteliers "Salina Isola Verde", with Giuseppe Siracusano and Emanuele Vitrano, editor, in 1991, of an interesting guide to the eco-sustainability of hotel facilities, the INGV, with the Director of the Palermo section, Francesco Italiano, the Marevivo Association, with the President, Rosalba Giugni and Laura Gentile, in charge of Association's projects.

The speakers were numerous and representative of the bodies and institutions involved or interested in the project for Salina pilot island: the EU Directorate General for Energy, with Francesco Maria Graziani, the Regione Siciliana Department of Water and Waste, represented by the General Manager, Salvatore Cocina, the Regione Siciliana Department of Infrastructures and the Civil Engineers Office of Trapani (Giancarlo Teresi) and the Councilor for the Environment of the Municipality of Pantelleria, Angelo Parisi, together with Riccardo Novo, Polytechnic of Turin. This last one is the leader of the project that sees Pantelleria as a pioneer island for the energy

transition in 2020. Filippo Martines, the consultant who drafted the Action Plans for Sustainable Energy (PAES) of the three municipalities, also participated to the works.

Claudio Mantero, who coordinates the initiatives for the energy transition of the Atlantic island of Madeira, took part in the work via Skype connection from the Portuguese island.

ENEL (Stefano Terrana), ENEL X (Giuseppe Lo Ver so) and the inter-municipal consortium for transport of Salina (Administrator Mario Biscotto) contributed.

The University of Palermo (prof. Marco Beccali and prof. Salvatore Favuzza), the CNR-Itae Institute of Messina (Director Salvatore Freni and Vincenzo Antonucci), Antonio Mazzon, Energy Manager of the Municipality of Palermo and ENEA, also present with Biagio Di Pietra, expert in energy systems, and Mario Jorizzo, expert in the field of environmental sustainability and circularity, presented research results and proposals for the EU small islands.

Also, present, among others, Pietro Finocchiaro, Francesco La Spada, Tiziana Alderucci (University of Messina), Francesco Sergi (CNR), Nicola Pidone, Marco Porzi, Fortunato Giarratana, Agata Matarazzo (University of Catania), Mario Ragusa (IRVVO) and Gianluca Proto (Purchasing group ERIC project)

The Regione Siciliana Department responsible for environmental and historical buildings in the province of Messina, in vain awaited, was unable to participate in the work, due to the contextual appointment and assignment of the new superintendent.

The conclusions were drawn on the second day of work and in the last think tank, held in the municipality of Leni, during which representatives of local authorities and EU, research institutions and stakeholders started to define the proposals to be included in the island's energy transition agenda.

Some decisions were formalized on topics concerning:

- 1) problems of structuring a governance system (the establishment of an appropriate Working Group, suggested by ENEA, the creation of a Working Table for the involvement of institutional subjects and partnership, law interventions (simplification of authorization paths) and legislative (recognition of the WG and the WT), stable incentive and promotion systems for purchasing groups, creation of an energy office, which can guarantee the duration, at least until 2030, of the transition process towards sustainability objectives;
- 2) identification of coherent transition paths that take into account needs, possibilities, problems and development limits, concerning:
 - possible strategic diversification of energy carriers (e.g. introduction of LNG to be later replaced by biomethane or hydrogen) for the safety and resilience of the island system, for the production of electricity (currently by diesel groups), for maritime connections to the island (as foreseen by recent EU Directives), for internal transport (e.g. hybrid electricity - methane / biomethane and not only electricity) and for the production of domestic hot water and for cooking (in the latter two cases to replace the electricity consumed by thousands of electric and LPG water heaters, powered by thousands of tanks transported by ship every year);
 - production of electrical and thermal energy (photovoltaic, solar thermal, wind, marine energy, geothermal energy, biomass), from renewable sources available on the island, technologically usable and compatible with authorization and technical constraints (problems concerning the stability of the electricity grid, the need for energy storage systems);

- need for a strong change in the internal mobility system of the island, responsible for more than 50% of consumption, with the progressive replacement of traditional fuel vehicles with electric vehicles, biomethane or hydrogen hybrids and fuel cells, implementation of the necessary networks;
 - need to tackle the island's water supply problem in an integrated manner (reduction of grid leaks, construction of systems or plants for desalination, use of domestic rainwater or through meteoric capture and reservoir basin;
- 3) possibility and authorization issues, connected with the realization of the first concrete actions to:
- greater use of renewable sources (purchasing groups buying photovoltaic systems and solar collectors for hot water, promoting the use of the “wet fraction” of domestic or restaurant waste, for the production of biogas);
 - energy efficiency of buildings and systems promotion (the ENEA tax breaks: Ecobonus and Sismabonus and the GSE thermal tax breaks for small islands); drafting / updating of a guide for environmental efficiency and sustainability in the hotel sector, promotion of rainwater use);
 - electric mobility (construction of car charging stations, purchase of electric buses for public transport, regulatory interventions and limitations for car disembarkation);
- 4) proposals for programs and projects immediately feasible and replicable in Salina, and / or that could be funded by the next calls of the Clean Energy for EU Islands Secretariat, by the Regional Operative Program or by the National Decrees for the small islands. Among these for example:
- System Research Program of ENEA and University of Palermo on the electricity grid and energy efficiency;
 - electric and hydrogen mobility and pilot projects on energy production systems from the wave by the CNR-Itae of Messina, by the Polytechnic of Turin or by ENEA;
 - study of availability and possibility of using biomass from public and private green pruning and from the management of the woodland heritage of the natural reserve "Monte Fossa delle Felci e dei Porri";
 - study of availability and possibility of using rain and rainwater for water services;
 - implementation of surveys and studies on water and geothermal resources, by INGV;
 - dissemination and promotional campaigns and competitions for ideas by Marevivo and ENEA;
 - update of the guide for sustainability and energy efficiency, for operators in the hotel sector;
 - implementation of consumption monitoring systems or local transport system analysis campaigns, by companies or stakeholders;
 - creation, with the support of ENEA, of an information desk.

Salina, as is now known, is one of the first six pilot islands of the program through which the "Clean Energy for EU Islands" Secretariat - <https://euislands.eu/island/salina> - intends to promote and encourage, in the small islands, the path towards energy self-sufficiency and economic and social sustainability, to be achieved by 2030.

The Green Salina Energy Days were recorded among the events of the European sustainable energy week EUSEW 2019 (<https://eusew.eu/energy-days/green-salina-energy-days-1>) .

The focus of the event was on the research for a path of energy transition and mechanisms, including legislative ones, of social incentives, which favour active and lasting participation, in the transition process, of local and regional administrations, local population, stakeholders and the European Secretariat itself, in line with what was planned, for the small islands, by the Regione Siciliana Department of Energy, in the new PEARS document.

The ENEA event allowed the discussion, among some of the actors of the political and technical governance of the transition path of Salina and the other Sicilian small islands.

The event began in Santa Marina Salina, on the evening of June 27th, with an informal meeting, a "think tank", among the experts, to lay the foundations for the round tables of the following days, the first of which was held on June 28th, at the Malfa auditorium, on the theme: "Proposals and commitments for 2030 governance".

The second day of the works, on June 29th, also preceded by an informal meeting at Palazzo Marchetti, in the municipality of Malfa, had as its main theme: "Actions, experiences, technologies of today and tomorrow".

On this second day, local stakeholders such as ENEL (Stefano Terrana), power producer in Salina, and ENEL X (Giuseppe Lo Verso), a company interested in building the car recharging network, made their contribution. and the inter-municipal transport consortium of Salina (Administrator Mario Biscotto), who is already purchasing the first electric buses.

The University of Palermo (prof. Marco Beccali and prof. Salvatore Favuzza) presented projects and results of the research, which for years has been working with ENEA in the field of energy systems, the CNR-Itae Institute of Messina (Director Salvatore Freni, Vincenzo Antonucci and Francesco Sergi) presented their research results in the field of renewable sources, hydrogen and electric mobility. ENEA, with Biagio Di Pietra, presented the results of the work carried out on the island of Lampedusa, in the field of energy systems research and energy efficiency and, with Mario Jorizzo, the results of the activity and the proposals in the field of environmental sustainability and circular economy. Antonio Mazzon, Energy Manager of the Municipality of Palermo reported his proposal to use in small islands the applications developed for energy monitoring and territorial analysis and public participation in decision-making processes, developed and applied in Palermo.

Connecting Skype from the Portuguese island of Madeira, Claudio Mantero, put on the table the interesting proposal to share the scheme of interventions and actions identified for the energy transition of the Portuguese island.

The interventions by various operators in the sector are also notable. Among others:

- the FREESCOO air conditioner, for the conditioning, almost free, of rooms, through the evaporative cooling technique and the solar cooling (Pietro Finocchiaro);
- the interesting results of the simulation, for Salina, of an innovative device for energy production from wave (Francesco La Spada, Tiziana Alderucci (University of Messina) and Francesco Sergi (CNR Itae of Messina);
- the possibility of building systems, home automation or IOT controlled, for energy efficiency and the exploitation of renewable sources in the civil or even in the industrial sector (Nicola Pidone and Marco Porzi);
- the concrete opportunity, for citizens, to transfer to the construction companies, the tax credit of the Ecobonus and Sismabonus incentives (IRPEF relief, in ten years, of a portion of the costs that can reach up to 85%), presented by Fortunato Giarratana and prof. Agata Matarazzo, University of Catania;
- the plant for domestic production of biogas from wet fraction of waste (Mario Ragusa, IRVVO);
- the proposal to join the purchasing group, photovoltaic plants and / or solar thermal collectors, already operating in Salina with the ERIC (Renewable and Circular Economy Project), presented by Gianluca Proto, project manager.

It was held simultaneously, in the central square of Santa Marina Salina, an exhibition on electric mobility, including Mercedes models, organized by Salvatore Peci and Giusy Giacone, Ecomed Ltd., and systems for the production and exploitation of renewable energy, through the mechanism of the purchasing group, by the "ERIC Project".

In conclusion, the Green Salina Energy Days, with work meetings and round tables, were an event of great technical interest.

Despite the summer climate and the tourist and holiday atmosphere of the island, the ENEA event was participated, in addition to the numerous representatives of scientific institutions and universities, partners of the EU pilot project for the island of Salina, the operator organisations and the exhibitors invited, also by citizens and tourists, attracted by the themes of energy transition and sustainability.