WG1 Report of the Activities

Assesment of sustainable energies resources for energy islands

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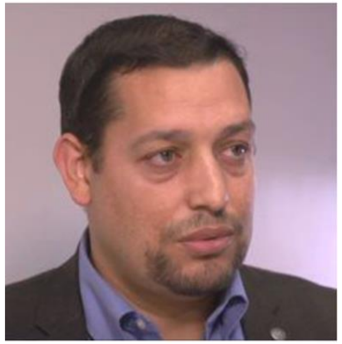

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Resources Assesment

Climate change, sustainability and renewable energy

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Research Topics

- Comperhansive review of climate change scenarios, inc.:
  - Sea rise
  - Changes due to the storm events
  - Distribution of regional differences in Europe, etc.
- Assesment of the impact of climate change in renewable energy resources, production and consumption, inc.:
  - Geographic distribution of wind, solar and wave energy
  - Considering substantial variations across regions/countries
  - Impacts on different technologies, local and global economies etc.

Resources Assesment

Climate change, sustainability and renewable energy

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Research Topics

- Impacts of climate change in planing and desin of renewable energy instalations and electrical transmission networks, inc:
  - New requirements for functional and structural design of renewable energy installations & network connections.
- Review of risk mitigation measures
  - Review and adaptation of existing infrastructures
  - Consideration of climate change impact on planing and design of future reneable installations
- Assesment and sustainability of new opportunities and technical applications
- Exchange of good practices in the design of national policy framework

Objective

- Focus on scientific papers with collaboration between the countries.

Activities

- Training School – Belgrade – June 2024
- Strategic Workshop – Bochum – September 2024
- Training School – 2025
- Working Group meeting – 2025
- International Conference – 2025

Agenda

- 11 Participans
- 7 Presentations:
  - 6 on-site and 1 online

Working Group 1 - Meeting 3 – Detailed agenda

DATE:	25-26 March, 2024
Time	(25-3-2024) 13:00 – (26-3-2024) 09:00 (Lithuania Local Time)
Place	Kaunas, Lithuania
Venue	Faculty of Civil Engineering and Architecture / Kaunas University of Technology
Additional information	Implementation manual (modenerlands.eu)

Detailed timetable of the Working Group 1 meeting

25 March 2024 (Monday)		
Time	**Presenter**	**Topic**
13:15-13:30	Anina Glumac (AG)	Welcome and Introduction
13:30-13:45	Safak Metin Kirkar	Investigation of heat transfer characteristics in corrugated-wall tubes
13:45-14:00	Fatih Karipoglu	Suitable site selection methods for marine renewable energy systems
14:00-14:15	Antonio José Álvarez Naveira	Short Term Scientific Mission outcomes for the application of satellite technologies in the frame of Energy Island deployments.
14:15-14:30	Felix Nieto Mouronte	Energy Islands in the horizon: where should we head?
14:30-14:45	Marko Mančić	Impact of surface fluid flow on the performance of PV – results and testing in University of Nis, Serbia
14:45-15:00	Teresa Simoes	Steps towards the installation 10 GW of Offshore Wind in Portugal
15:00-15:15	Meyer Angela***(online)***	Bias correction of wind power forecasts with SCADA data and continuous learning
15:15-15:30	**Coffee Break**	
15:30-16:45	All	Definition of two or more thematic subgroups. Each subgroup is expected to: - Identify one or more priority research topics to be addressed jointly. - Identify one or more reference persons who will lead the research activities. Identify the key strategies for an effective implementation of the research (e.g., joint papers, periodical online meetings,

Research Subgroups

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Research Subgroup 1

- **Topic 1: Suitable site selection for marine energy systems for Net-Zero targets**
- People: Teresa, Nejan, Fatih, Rumiana, Milena
- Methodology: GIS+MCDM
- Criteria definition based on the Portuguese Offshore Renewable Action Plan case and the Denmark’s Energy Island
- Expert ‘s Survey for ranking selection criteria; Select the suitable sites and consult experts related with technologies (launch 1 month maximum to have some results)
- Outline created, including the survey

Research Subgroups

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Research Subgroup 1

- **Topic 2: Modular platform vs Existing Islands in terms of challenges and opportunities.**
- People: Teresa, Nejan, Fatih, Rumiana, Milena
- Challenges: Tackle environmental and technical challenges like platform design, resources complementarity (and energy production), Energy Storage/Hydrogen, Installation and maintenance processes; coexistence with other socio-economic actvities.
- Oportunities; New R&D activities; Industrial development; Energy independent and zero carbon emission targets; Improving infrastructures – ports and shipyards

Objectives & Research Topics

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Research Subgroups

Research Subgroup 2

- **Topic 1: Design optimisation of energy islands**
- People: Safak, Marko, Felix, Antonio, Rahman
- Idea: Decision-making tool to help define suitable technological solution with regard of the specific location based, e.g. based on the levelized cost of energy
- Outline:
- State of the art, emphasasing hybrid systems, solar, wind, wave, energy storage, etc.
- Define different locations
- Formulate the methodology
- Future chalenges – possible limitation – data related to energy storage and integration to the grid - goal function CO2 reduction

Research Subgroups

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Research Subgroup 2

- **Topic 2: Maintenance and surveillance challenges related to energy islands**
- People: Marko, Felix, Antonio, Safak, Rahman
- Review of maintenece and survailance current and future methodologies
- Main limitatation related to the lack of data!

Research Projects


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- **Funding opportunities**
- CET partnership
- Twinning
- EIC Accelerator
- WIDERA, ACCESS
- INTERREG Adrion
- **Challenge**: Suitable topic for different TR levels needed

Wish you a warm welcome!

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Thank you!