Final conference report

Final Version of 31/12/2021

Deliverable Number D.2.4.2

Project acronym	COASTENERGY
Project ID number	100445844
Project title	Blue Energy in ports and coastal urban areas
Priority axis	Blue innovation
Specific objective	1.1 – Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area
Work Package number	2
Work Package title	Communication activities
Activity number	4
Activity title	International communication and dissemination of project results
Partner in charge	CMU
Partners involved	All project partners
Status	Final
Distribution	Public

Contents

Summary

The final conference of the Coastenergy project was organised by Community of Mediterranean Universities. It took place on the 25th of November in Bari, Biblioteca De Gemmis.

The conference featured four parts:

- Opening and introduction, including the presentation of the Coastenergy project and speaks about energy policies and strategies, funding and implementation of projects in Italy and Croatia.
- Pilot projects by Coastenergy partners: project partners presented the main outcomes of the project activities, i.e. feasibility studies concerning the possible applications of Blue Energy technologies at selected pilot locations in Italy and Croatia.
- Technologies, procedures, networks: presentations by project partners and invited experts about Bue Energy technologies, administrative procedures, and networking activities.
- Conclusions

Besides project partners presenting their feasibility studies for Blue Energy projects in the Adriatic Sea, the conference featured local institutional stakeholders such as the Regional Agency for Sustainable Development and the Municipalities of Bari and Mola di Bari, research institutions from Italy and Croatia, and the Blue Growth Interreg project.

Short abstracts of the conference presentations are provided below.

Conference agenda

Opening and introduction	9.00	Registration	
	9.20	Welcome	Francesco Losurdo *Community of Mediterranean Universities*
	9.30	Opening	Antonio Decaro, Elisabetta Vaccarella *Metropolitan City of Bari*
	9.45	Presentation of the COASTENERGY project	Dino Glavičić *IRENA*
	10.00	Energy policies in the Region of Apulia	Anna Grazia Maraschio *Region of Apulia*
	10.20	The role of Blue Energy in the regional energy strategies	Elio Sannicandro, Marino Spilotros *Regional Agency for Sustainable Spatial Development*
	10.40	Relevant Blue Energy projects in Croatia: funding and implementation	Lea Leopoldović *Energy Institute "Hrvoje Požar"*
	11.00	Break	
Pilot projects by COASTENERGY partners	11.15	The City of Mola di Bari and the programmes for the port area	Giuseppe Colonna *City of Mola di Bari – Mayor*
	11.30	Feasibility study for wave energy converters in the port of Mola di Bari	Giovanni Manco *Community of Mediterranean Universities*
	11.45	Sea water thermal and wave energy potential in Western Istria: a feasibility study for the energy renovation of the City Palace of Poreč	Dino Glavičić *IRENA*
	12.00	The pilot project by UniCam and the mobilization of stakeholders from the Marche Region	Maria Chiara Invernizzi, Federica Di Pietrantonio *University of Camerino*
	12.15	Case Study: Maritime sports port in Ploče	Ružica Budim *Energy Institute Hrvoje Požar (for City of Ploče)*
	12.30	Pilot projects for the marinas of Pescara and Vasto	Riccardo Pulselli *INDACO$_2$ srl (for Chamber of Commerce Chieti-Pescara)*
	12.45	Pilot project: Installation of Sea water heat pump in the townhall of Mali Lošinj	Vladimir Vidović *SDEWES Centre*
	13.00	A potential pilot project for a heat pump plant implementation in Piazza Unità d'Italia, Trieste	Elisabetta Ocello *University of Udine*
	13.15	Break	
Technologies, procedures, networks	14.30	Marine geothermal heat pumps technologies	Marija Macenić *University of Zagreb*
	14.50	Wave energy technologies for the Adriatic Sea	Maximo Aurelio Peviani *RSE SpA*
	15.10	The role of the Regional Plan of the Coasts	Francesca Calace *Politecnico di Bari*
	15.25	Living between earth and sea – Housing project for the port of Mola di Bari	Michele Montemurro *Politecnico di Bari*
	15.40	Preliminary results of WP5 activities	Maria Chiara Invernizzi, Federica Di Pietrantonio *University of Camerino*
	16.00	Marine Renewable Energies in the Mediterranean – The Interreg MED Blue Growth Community's experience	Varvara D. Bougiouri *National Technical University of Athens*
	16.20	Round table	
	17.00	Closure of conference	Francesco Losurdo *Community of Mediterranean Universities*

Presentation of the Coastenergy project

Dino Glavičić – IRENA.

Presentation of project partners, objectives, and activities: preliminary analyses (legal framework and procedures, best practices, spatial database, energy potentials), local and cross-border "Coastal Energy Hubs", feasibility studies and guidelines for Blue Energy projects in selected pilot areas, guidelines, project platform and webGIS.

Relevant Blue Energy projects in Croatia: funding and implementation

Lea Leopoldović – Energy Institute Hrvoje Požar.

- Presentation of the Energy Institute Hrvoje Požar, institution owned by the Republic of Croatia whose activities include scientific research, professional support to public authorities, and advisory services on the domestic and international market in the field of energy.
- Example of study undertaken by the Institute: centralised cooling and heating system for the Old City of Dubrovnik.
- Available funding at national level in Croatia suitable for sustainable energy projects: Iceland Liechtenstein Norway grants, Norway grants, Innovation Norway.
- Available funding at transnational level: several strands of the Interreg initiative.

Feasibility study for wave energy converters in the port of Mola di Bari

Giovanni Manco – Community of Mediterranean Universities.

Selected pilot area: port of Mola di Bari, Apulia, Italy.

Selected technologies:

- ISWEC (Inertial Sea Wave Energy Converter) is an off-shore device consisting of a sealed floating hull containing a pair of gyroscopic systems. The pitching movement of the hull is intercepted by the two gyroscopes and transmitted to generators, which transform it into electric energy.
- OBREC (Overtopping Breakwater for Energy Conversion) is an on-shore device that can be integrated into an existing breakwater, or built in a new one. It is made of a concrete caisson with a front ramp and reservoir capturing the water from the incoming waves, which then flows through low-head turbines to produce energy.

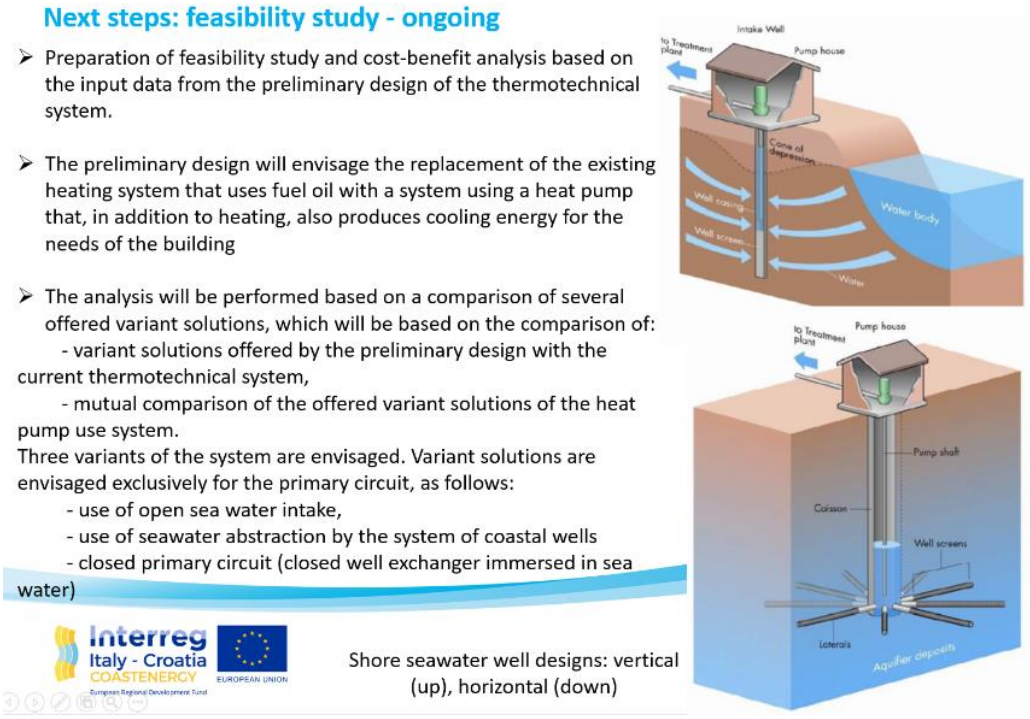
Sea water thermal and wave energy potential in Western Istria: a feasibility study for the energy renovation of the City Palace of Poreč

Dino Glavičić – IRENA.

Selected pilot area: City Palace, County Office Building, and Public Open University in Poreč, Istria, Croatia.

Selected technology: marine heat pump for heating and cooling, replacing the existing heating system. Three alternatives analysed:

- use of open sea water intake;
- use of seawater abstraction through system of coastal wells;
- closed primary circuit (closed well exchanger immersed in sea water).



Shore seawater well designs: vertical (up), horizontal (down)

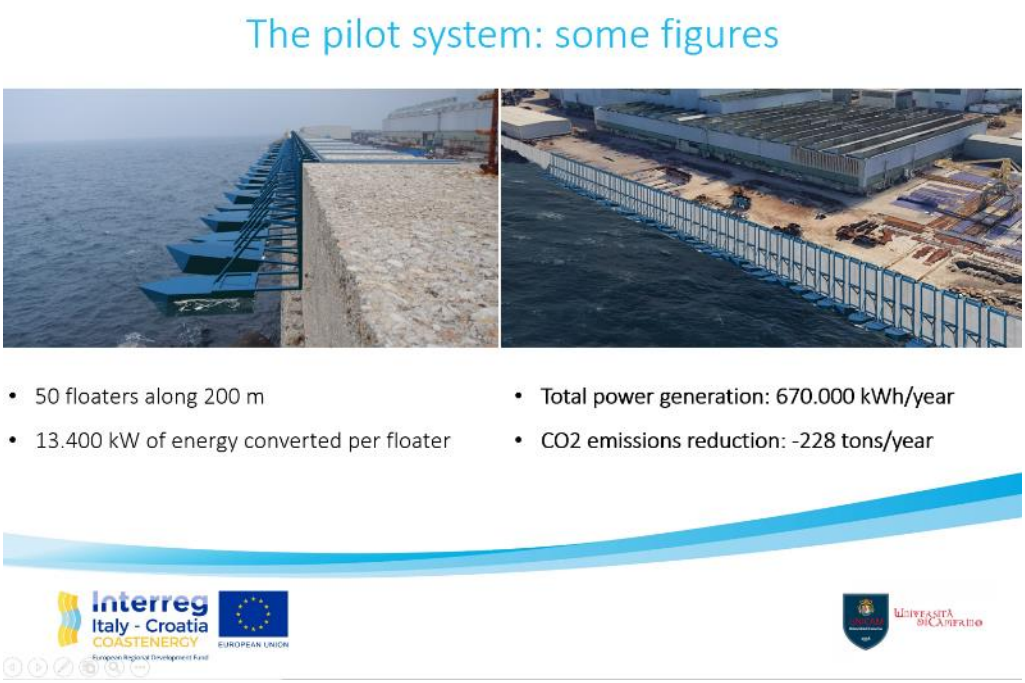
The pilot project by UNICAM and the mobilization of stakeholders from the Marche Region

Maria Chiara Invernizzi, Federica di Pietrantonio – University of Camerino.

Selected pilot area: Port of Ancona, Marche, Italy.

Selected technology: Wave Clapper is a 10-kW floater, to be installed on existing port structures, transmitting the wave movement to a hydraulic piston compressing a fluid. When the compressed fluid is released, the resulting energy is used to run a hydraulic motor and generator. Minimum wave height is 0.5 m. The operation of the device is not dependent on wave direction. The project for the port of Ancona concerns the installation of 50 floaters along 200 m of an existing pier.

Local stakeholders have been involved through 2 local conferences and 3 meetings of the Local Coastal Energy Hub between 2020 and 2021.



Feasibility study of the implementation of renewable energy sources at the marine sports port in Ploče

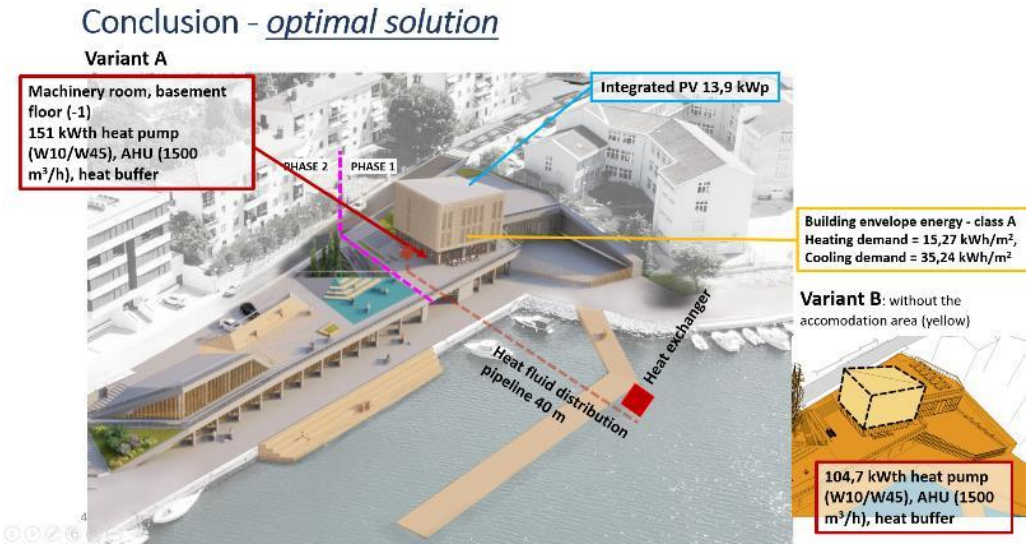
Ružica Budim – City of Ploče.

Selected pilot area: marine sports port in Ploče, Dubrovnik-Neretva, Croatia.

Selected technology: different solutions have been analysed (all complying with the near-zero energy standard for buildings), including combinations of:

- seawater heat pump with heat recovery, air conditioning unit with heat recovery, PV system;
- LPG condensing boiler, chiller, air conditioning unit with heat recovery, PV system;
- LPG condensing boiler, chiller, air conditioning unit with heat recovery, solar thermal collectors;
- air source heat pump with heat recovery, air conditioning unit with heat recovery, PV system or solar thermal collectors.

The optimal solution is the first one. Such combination has the lowest global cost compared to the other ones, and significantly lower primary energy, CO2 emissions and operating costs.



Pilot projects for the marinas of Pescara and Vasto

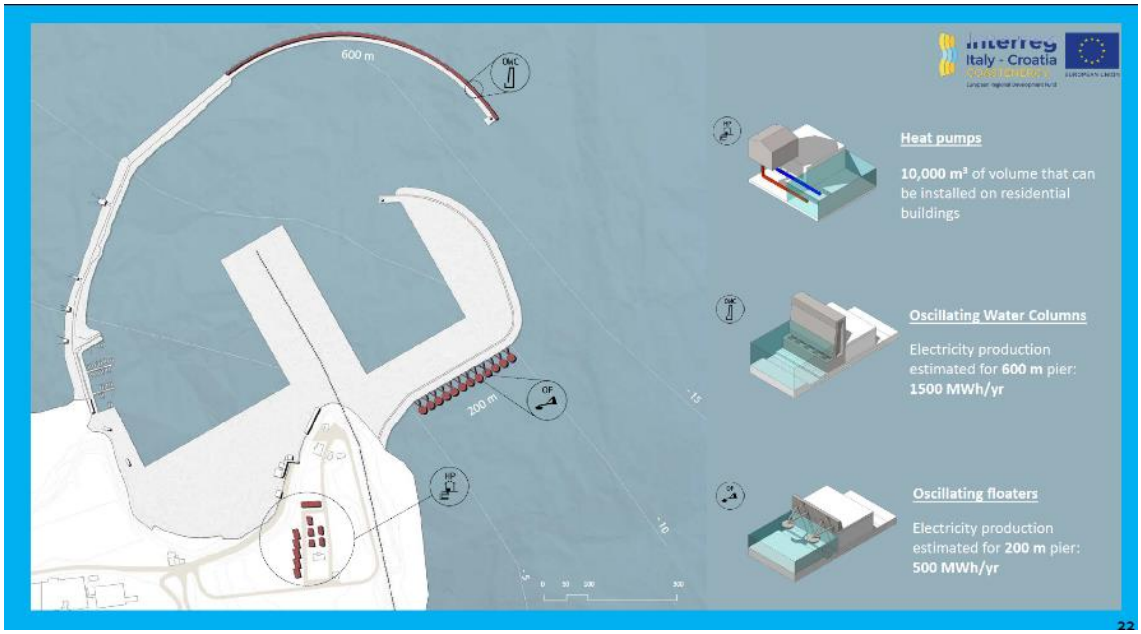
Riccardo Pulselli – Chamber of Commerce of Chieti-Pescara.

Selected pilot area: Marina of Pescara, Abruzzo, Italy.

Selected technologies:

- seawater heat pumps to be installed in existing buildings owned by the Marina;
- oscillating water column devices to be installed along 450 m of piers;
- oscillating floaters to be installed along 300 m of piers.

The wave energy devices would cover the electricity demand of the port, including the demand for the operation of the seawater heat pumps. The exceeding production would be fed to the city electricity network. A similar solution can be applied to the Marina of Vasto.



Installation of Sea water heat pump in the townhall of Mali Lošinj

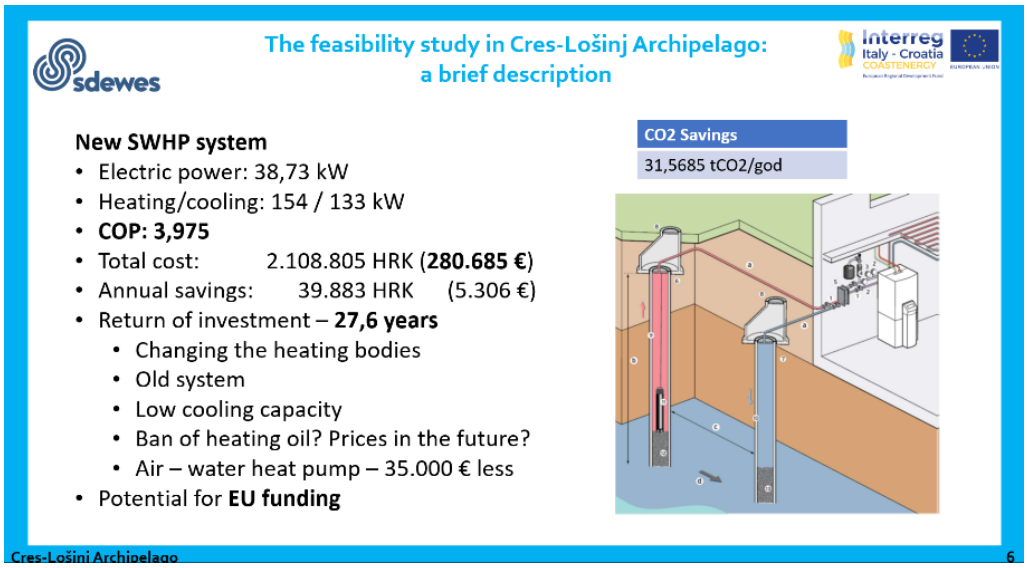
Nikola Matak, Vladimir Vidović – SDEWES Centre.

Selected pilot area: Town Hall of Mali Lošinj, Primorje-Gorski Kotar, Croatia.

Selected technology: seawater heat pump replacing the existing oil boiler and air-air heat pumps currently used for winter heating.

The study concerns as well the necessary procedures for obtaining the authorisations, considering also that the building is protected under conservation laws.

Replacing existing fossil fuel heating systems in the whole Cres-Lošinj archipelago would allow reducing emissions by 24%.



A potential pilot project for a heat pump plant implementation in Piazza Unità d'Italia, Trieste

Elisabetta Ocello – University of Udine.

Selected pilot area: Piazza Unità d'Italia, Trieste, Friuli-Venezia Giulia, Italy.

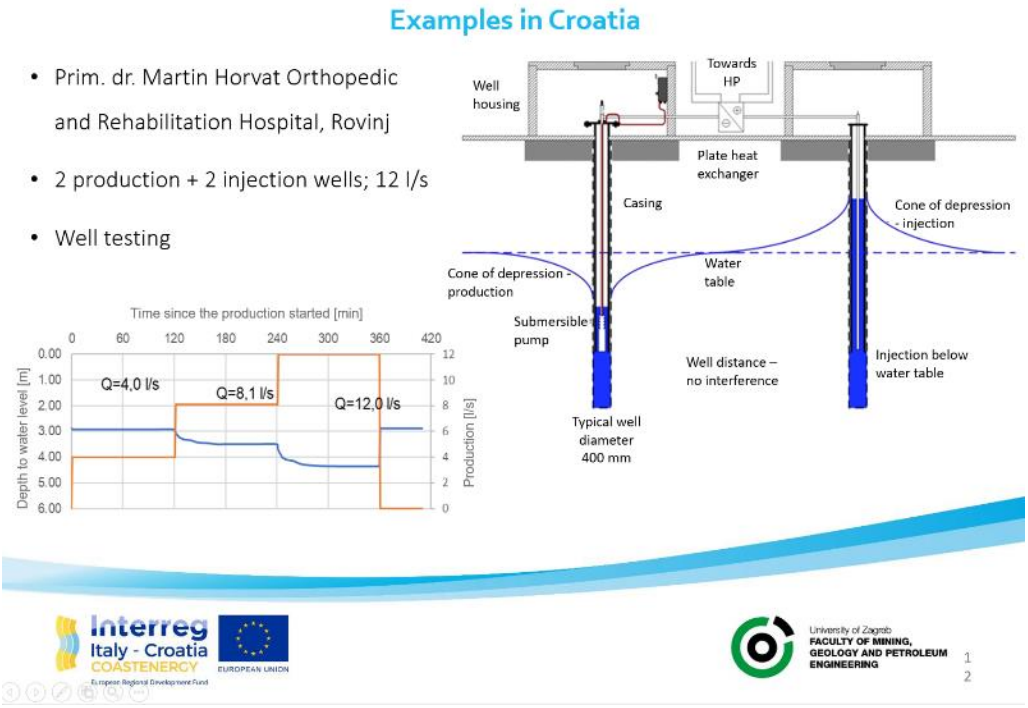
Selected technology: seawater heat pump including a ring pipe circuit connecting all buildings around the piazza.

The feasibility study shows that the project is technically feasible, but high investments are required. Therefore, there is a need for launching partnerships and seeking national subsidies.

Marine geothermal heat pumps technologies

Marija Macenić – University of Zagreb.

Presentation of different types of heat exchangers: closed/open systems, parallel/series connections, shallow/deep energy sources, exchange at sea/through beach well. Advantages/disadvantages of such technology. Examples of applications in Croatia: Hotel Punta Scala (Zadar), Martin Horvat Orthopedic and Rehabilitation Hospital (Rovinj), Hotel Le Méridien Lav (Split), Knežev dvor (Dubrovnik).



Wave energy technologies for the Adriatic Sea

Maximo Aurelio Peviani – RSE.

Presentation of different wave energy technologies suitable for the Adriatic Sea: attenuators, point absorbers, oscillating wave surge converters, oscillating water column, overtopping/terminator, rotating mass, bulge wave, submerged pressure differential, etc.

Focus on WaveSAX, an oscillating water column device tested at the CNR-INM laboratories and on site at the port of Civitavecchia: principle, construction, energy production potential, carbon footprint.

The role of the Regional Plan of the Coasts

Francesca Calace – Politecnico di Bari.

Presentation on spatial and landscape planning tools having validity on coastal areas in the Apulia Region: Regional Landscape Plan, Regional Coastal Plan, Municipal Coastal Plans. These plans have to interact as well with the Strategic Metropolitan Plan (currently under development for the Metropolitan City of Bari), the Municipal Spatial Plans, and the Port Plans (both those by the municipalities and those by the Port Authorities).

Focus on the Municipal Coastal Plan of the City of Bari and the most recent coastal transformation projects in the towns of Bari, Giovinazzo, Mola di Bari, Molfetta, Monopoli, Polignano, San Cataldo.

Living between earth and sea – Housing project for the port of Mola di Bari

Michele Montemurro – Politecnico di Bari.

Examples of waterfront redevelopment projects in the present and past, including recent projects of floating houses in Amsterdam.

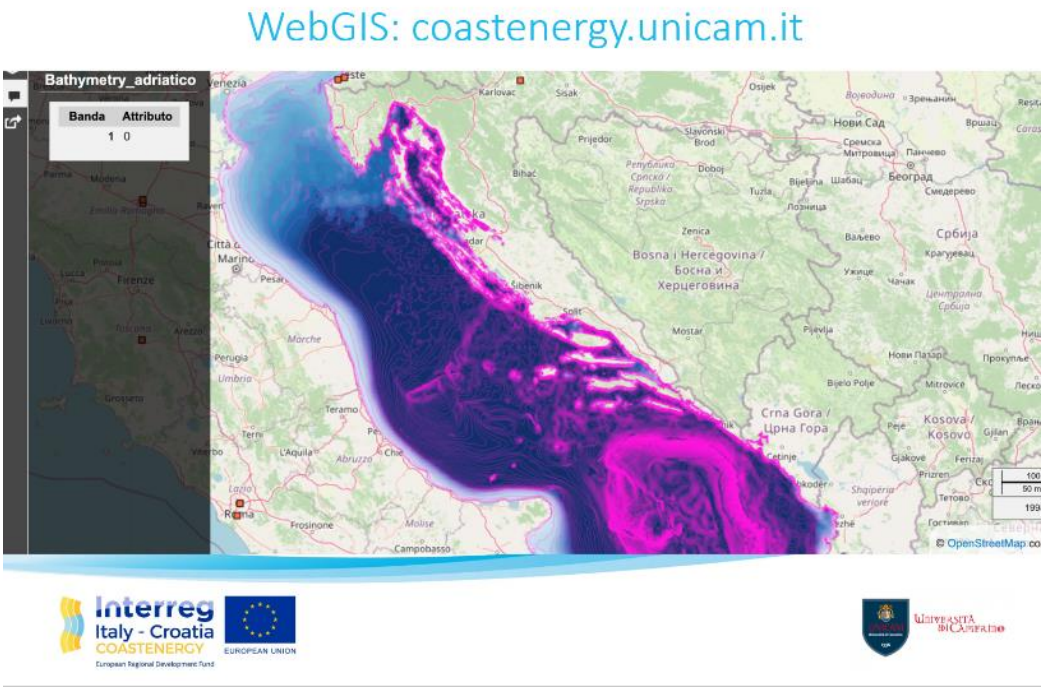
Presentation of the ongoing project for a new residential settlement in the port area of Mola di Bari, including both stable and floating houses of different types.

Preliminary results of WP5 activities

Maria Chiara Invernizzi, Federica Di Pietrantonio – University of Camerino.

Presentation of activities undertaken under Work Package 5 of the Coastenergy project, concerning networking, capitalisation, and transferring. Activities included:

- evaluation of the activities and results of the Local Coastal Energy Hubs implemented by project partners;
- comparison and evaluation of the partners' pilot projects;
- issuing of practical recommendations to ensure the development of Blue Energy systems in coastal areas;
- networking with other EU-funded projects;
- development of the Coastenergy on-line platform and the Coastenergy webGIS.



Marine Renewable Energies in the Mediterranean – The Interreg MED Blue Growth Community's experience

Varvara Bougiouri – National Technical University of Athens.

Presentation of the Interreg MED Blue Growth Community, outcome of the "Blue Growth" Interreg MED horizontal project. The Community has the objective of enhancing the capitalisation, dissemination and transferability of the results of several Interreg MED projects such as B-Blue, BLUE CROWDFUNDING, BLUE BIO MED, Blue Deal, BLUEfasma, iBlue, MAESTRALE, MED OSMoSIS, MISTRAL, PELAGOS, PROteuS, Psamides, and 4helix+.

Presentation of some of the outputs of some of the above projects in terms of on-line platforms, action plans, policy documents, methodologies, analyses of energy potentials, spatial databases, reports, amnd factsheets.