

Iceland
Liechtenstein
Norway grants

 REPUBLIC OF CROATIA
Ministry of Regional
Development and EU Funds


Energy Institute Hrvoje Požar

ENERGY PRODUCTION FROM THE SEA

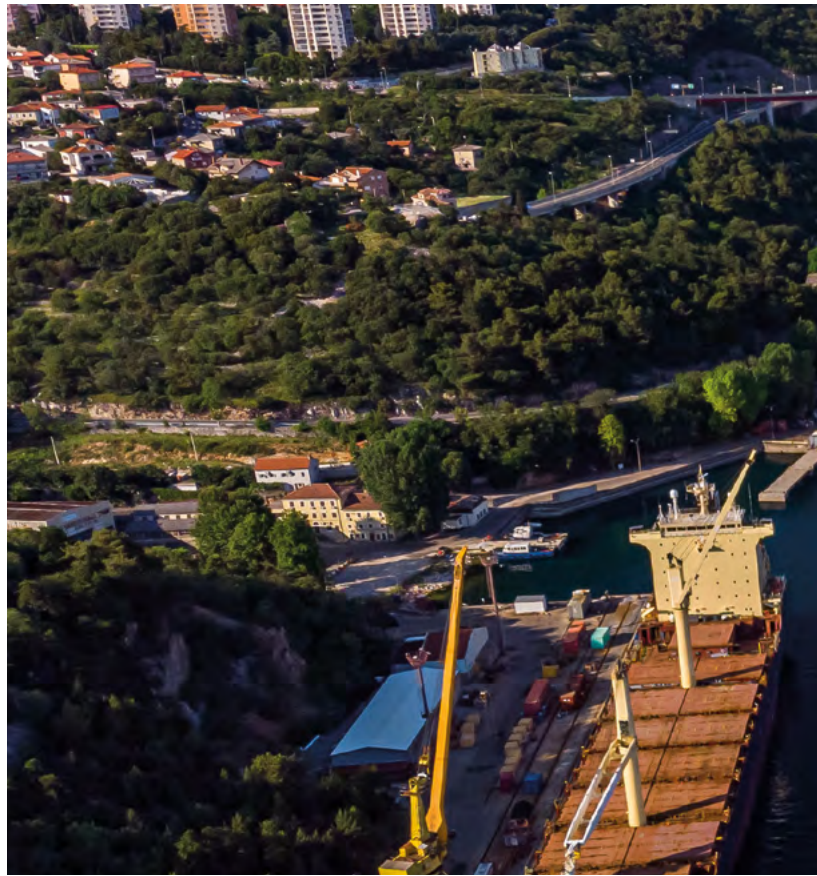
Seawater Heat Pump System



Working Together for a
Green, Competitive and
Inclusive Europe

 SHIPYARD
1896 **VIKTOR LENAC**
Member of Palumbo Group

More than
120 YEARS
of expertise,
determination and
integrity



Our Story

Since
1896

We live our values and demonstrate our character in every job we take. Responsibility, expertise, commitment, integrity, and pursuit of excellence are the virtues embedded in our culture.

Our vision

is to be the first choice of shipowners when they look for a quality and reliable shipyard in the Mediterranean.

Our mission

is to be here whenever shipowners need us, providing top quality, in a safe way, on time.



ISO 9001:2015

Quality management systems

ISO 45001:2018

Occupational health and safety management systems

ISO 50001:2018

Energy management systems

ISO 27001:2013

Information security management systems



SHIPREPAIR

- 3 floating docks of up to 160,000 DWT
- 1,200 meters of berthing structure in a sheltered bay
- 9 shore cranes having a lifting capacity of up to 100 t

CONVERSIONS

OFFSHORE

- 130,000 sqm of conversions and offshore construction area with a heavy lift loading pier of 300 m



FINANCIAL MECHANISMS 2014 – 2021 IN CROATIA

Project Start Date:
June 1, 2022
Project Finish Date:
March 31, 2024
Total Project Value:
EUR 480,312.54
Total Grant Amount:
EUR 232,583.52

Seawater Heat Pump System

ENERGY AND CLIMATE CHANGE

Viktor Lenac Shipyard concluded a grant agreement with the Ministry of Regional Development and EU Funds for the implementation of the Seawater Heat Pump System Project, which is funded by Iceland, Liechtenstein and Norway through the European Economic Area (EEA) Financial Mechanism 2014-2021, co-financed by national funding under the Energy and Climate Change Programme.

VIKTOR LENAC

is one of the largest shipyards in shiprepair, conversions and offshore in the Mediterranean.



Project Description

ENERGY EFFICIENCY FOR SUSTAINABLE DEVELOPMENT

For sustainable development to be achieved, it is crucial to increase the use of energy-efficient, low-carbon emitting technologies and strengthen own renewable energy capacity. Viktor Lenac is conducting a pilot project to invest in



Carbon emissions
reduced by
36,600 kg/year

renewable energy technology of seawater-powered energy systems by installing the seawater heat pump to produce the heat and the cold for heating, ventilation, and air conditioning systems installed in buildings.

The aim of the project is to improve efficiency of the central heating system and extend it into the cooling mode covering four buildings in the Stara Martinscica zone, which is part of the Shipyard's production infrastructure.

ADVANTAGES OF SEAWATER HEAT PUMP SYSTEM

✓ Electricity consumption reduced by **60%**

Workshop and offices in buildings situated in Stara Martinscica zone are heated by circulating hot water. The water heating system uses thermal energy generated by the water-to-water heat pump and 280 kW electric boilers with output power of 280 kW, where 100 kW is used from the heat pump. The existing heat pump draws thermal energy from the process water, which is further used in the flow system to maintain a minimum temperature of 3°C. However, due to a high concession fee for process water, the heat pump is not economically viable nor is sufficiently energy efficient, which is a problem that this project aims to solve.

The project envisages the installation of the seawater heat pump system, whose basic feature and great advantage is the relatively constant temperature of the heat source throughout the year.

Due to more favourable temperature parameters of seawater in relation to process water, the heating factor of the seawater-to-water heat pump is high.

The project goal is the upgrade of the central heating system by installing a seawater heat pump system for heating and cooling building spaces in the Stara Martinscica zone (TOST 2) aimed at increasing the use of renewable energy.





Project Impact



Electricity consumption will decrease by

155,872 kWh/year



Reduction in carbon emissions of

36,600 kg/year



Cuts in

heating cost (electricity) by eliminating or significantly reducing the use of electric boilers and electric resistance heating



Decreasing
operating costs
(maintenance and energy-generating
product prices)



Upgrading
the central heating system to
cooling mode

Donor Programme Partners

Iceland, Liechtenstein, Norway

Working Together for a **Green**, **Competitive** and **Inclusive** Europe

Working Together for a **Green** Europe



www.eeagrants.hr

www.lenac.hr