

# Final pilot action report

## Port of Ravenna

PP5, deliverable no. D.4.2.4

## **DISCLAIMER**

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## Pilot action « photovoltaic system and e-cars at the Port of Ravenna

### 1. Ex-ante situation

As planned for the activity 3.2 of WP3, a specific SWOT analysis of the Port of Ravenna was carried out, based on the common methodology provided to the SUSPORT project partners. The analysis was conducted taking into consideration the activities carried out in the Port, and the data and experiences shared by the main stakeholders of the port.

The SWOT analysis revealed two major weaknesses at the Port of Ravenna when considering negative environmental impacts. One of them was the high level of GHG emissions generated by the ships at berth, and the second one was the high level of GHG emissions produced by vehicles powered using diesel and gasoline fuel.

### 2. Pilot action description

The pilot action aims to tackle one of the main problems at the Port of Ravenna – the high level of GHG emissions produced by the vehicles operating in the port area. The set goal was to reduce the level of GHG emissions by 0,008%.

Keeping this objective in mind, different activities have been carried out. Firstly, a photovoltaic system is being installed at the premises of the Port Authority, more specifically in the parking lot, with the aim to increase its energetic independence, adding to the already existing photovoltaic panels on the rooftop of the Port of Ravenna Authority headquarters. Regarding the above-mentioned photovoltaic panels, relevant tenders were awarded on 27th January 2023, whereas the works started in February 2023 and will finish by the end of June 2023. The power of the new photovoltaic system is 122.208 kWh per year, which will add to the previous system producing 38.602 kWh. The current state of works can be seen in the photo below:



In addition, two green vehicles have been purchased: an electric one in December 2020 and a hybrid one in June 2021. They are used by the Port of Ravenna Authority for its daily activities. The electric vehicle replaced an old gasoline car and in the first year this car covered 11.000 km, all these km were CO<sub>2</sub> free. The above-mentioned vehicles can be recharged using the photovoltaic system. In fact, the pilot action also included the installation of a wall box and an electric column for the two vehicles, which took place in June 2021 for recharging the vehicles within the parking lot of the Port of Ravenna Authority headquarters. These facilities will be powered by a photovoltaic system, also realized as part of the pilot action.

On 24<sup>th</sup> March 2023 a dissemination event was held at the headquarters of the Port of Ravenna Authority. Here below it is possible to see the stakeholders that participated at the event. During this event they were informed about the pilot Action carried out in the Port of Ravenna and they were able to give their contributions and comments.

**LIST OF ATTENDANTS**

<b>ORGANIZATIONS</b>
PRO LOCO PORTO CORSINI
ATENA RAVENNA
ISTITUTO TECNICO COMMERCIALE "GINANNI" RAVENNA
AUSL ROMAGNA
SAPIR RAVENNA
BAMBINI RAVENNA
FONDAZIONE ITL BOLOGNA
LEGA COOPERATIVE

### 3. Conclusions

Overall, the Port of Ravenna Authority has managed to meet most of the objectives set for the SUSPORT pilot action – purchasing 2 vehicles, one electric and one hybrid plug-in, and deployment of a wall box and of an electric column for feeding the two vehicles purchased. The last part of the pilot action, the photovoltaic system in the courtyard of the Port of Ravenna Authority is yet to be completed and will be finished by the end of June 2023.

Regarding the electric vehicles, during these past two years the emissions have been zero due to the use of recharging points installed in the building and supplied by the already existing photovoltaic system on the rooftop of the building. This has led to a considerable saving of resources.

Despite the lower efficiency in terms of sustainability of the hybrid vehicle, since it partially uses petrol, it has a clear advantage of enabling the Port Authority to cover longer distances with a lower environmental impact than a diesel car.

Once the new photovoltaic panels are installed, they will be able to cover 55% of the energetic needs of the facilities of the Port Authority, together with the already existing panels.

The indicators that demonstrate the efficiency of the pilot action are described in terms of GHG emissions avoided and green energy produced in the following table:

<b>Indicator</b>	<b>Unit of measure</b>	<b>Value</b>
<i>Reduction in CO2 emissions – electric car</i>	<i>Tons per year</i>	<i>-2,499</i>
<i>Reduction in CO2 emissions – hybrid car</i>	<i>Tons per year</i>	<i>-1,6345</i>
<i>Increase in green energy production – photovoltaic panels in the yard</i>	<i>kWh per year</i>	<i>+122.208</i>
<i>Reduction in CO2 emissions – photovoltaic panels in the yard</i>	<i>Tons per year</i>	<i>-64,7702</i>

This action benefits the port area, both by reducing the GHG emissions and by setting an example to the rest of the port community. The results of the project have shown the efficiency of the use

of electric and hybrid vehicles and photovoltaic panels in the port area and proven the benefits of their further application.