

# Output O.4.3 - Installation of 8 racks with electric and muscular bicycles for bike sharing services

WP 4 Pilots: small technological investments, equipment installations and new services start-up

Document: <u>Public</u> /Confidential			
<b>Responsible partner: University of Split</b>			
<b>Involved partners: All</b>			
Version	Status	Date	Author
1.0	First Draft	01/2020	University of Split
1.1	Second Draft	03/2020	University of Split
1.2	Final document	11/2022	University of Split
1.3	review	06/2023	University of Split
<b>Notes:</b>			

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## Introduction

This document presents an overview of the racks with electric and muscular bicycles for bike sharing services installed in three pilot sites, i.e. Foggia Province (Italy), Krk Island and Maslinica-Šolta (Croatia). In particular, the following pictures and pilots’ description prove the achievement of the **output O.4.3 Installation of 8 racks with electric and muscular bicycles for bike sharing services, with at least 4 muscular bikes and 4 e-bikes, including a charging system for e-bikes and software for rental**. However, since Venezia Giulia pilot did not complete the installations within its pilot site, only 5 racks are reported in total.

### Bike racks in Foggia area – Italy



*Figure 1 – Bike racks installed in Foggia province, Italy, by PP11 Province of Foggia.*

The Figure above (Figure 1) shows the **bike racks with the e-bike and muscular bike sharing system** installed by PP11 Province of Foggia in the **Gargano area**, within the marinas of Manfredonia, Rodi Garganico and Vieste. Each bike station is able to track malfunctions, GPS, number of rentals, duration of rentals and number of customers. The table below summarizes the type of installations that can be found in each marina:

Table 1 – List of installations in each marina of the Gargano area (PP11 Province of Foggia).

Location	Type of installation			
	Bike rack (no.)	Bikes (no.)	e-bike rack (no.)	e-bikes (no.)
Manfredonia	1	4	2	8
Rodi Garganico	1	4	2	8
Vieste	0	0	1	4
<b>Total</b>	2	8	5	20

The racks installed are in stainless steel with interlocked Schuko sockets of the charging column, with 230 V AC 2A power supply, present on the bar. The access to the system is enabled through the RFID card and an identification and recharging kit is installed on each bicycle. There is the possibility of remotely locking a single bicycle in the event of a breakdown. The chosen bikes have all 26" 6-speed frames, and are all equipped with mudguards, luggage rack, anti-burglary saddle system, saddle lock. The e-bikes have a 36 volt 10.5 AH rear wheel motor lithium ion battery. Brushless 250 W. Each bike is equipped with an analog display from which to manage lights and maintenance and battery charge percentage. Autonomy is set at 60/70 km.

No particular difficulties in installing the racks were found thanks to the collaboration with the marinas concerned. The marinas have shown considerable interest in setting up bike-sharing stations and a great appreciation of their customers for the service offered.

## Bike racks in Krk Island – Croatia



Figure 2 – Mobility station installed in Krk Island by PP12 Ponikve, with muscular and e-bikes.



Figure 3 - Pylon with e-bike renting software.

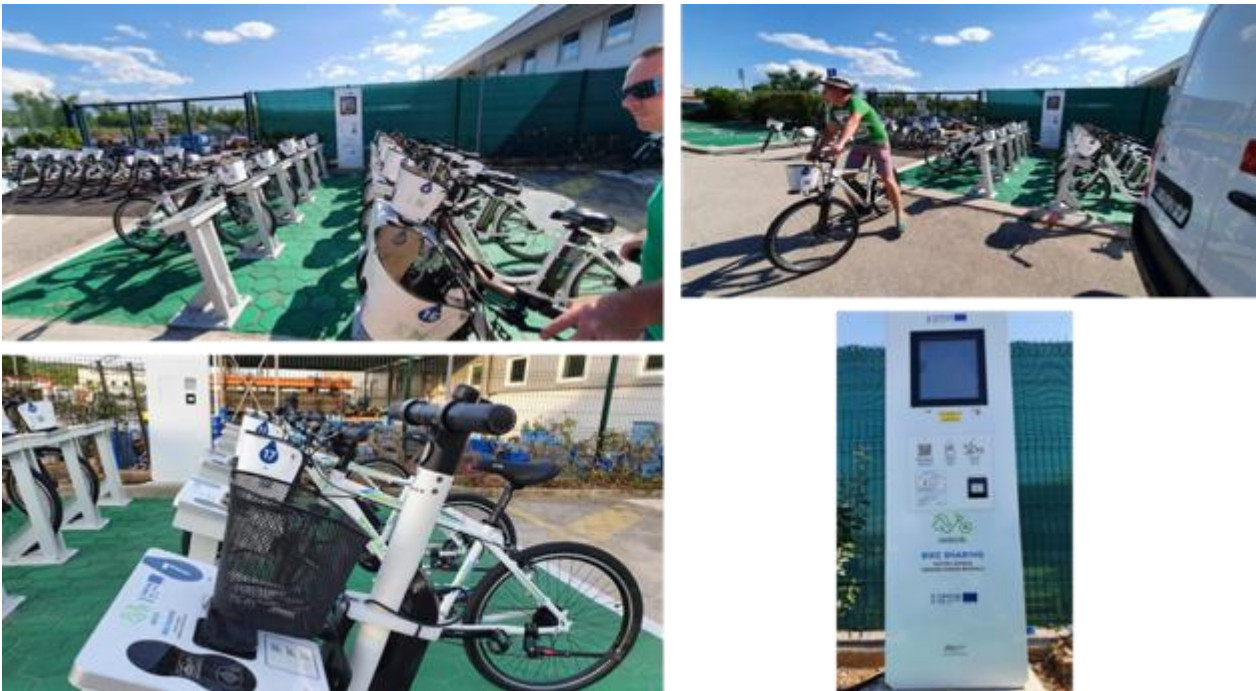


Figure 4 – Bike racks installed in Krk Island by PP12 Ponikve.



Figure 5 – Bike racks installed in the Municipality of Malinka-Dubasnica on Krk Island by PP06 Malinska.

Figures 2, 3 and 4 show the **bike rack** installed in the parking lot in front of the administrative building where Ponikve organization is located. The rack is equipped with **4 muscular and 4 electric bikes**, and is actually serving an area that has not been covered by e-mobility services yet. Thanks to the DEEP-SEA project, PP12 had the opportunity to test and improve its technical knowledge related to photovoltaic cells, battery systems and the use of apps and new technologies for e-mobility services. Figure 3 shows the pylon connected to internet for rental instructions and is connected to the app for e-mobility users. Figure 4 shows the docking unit for e-bikes, muscular bikes or e-scooter. Its purpose is to secure and lock vehicles when not used, and to recharge batteries.

As regards PP06, the Municipality of Malinska-Dubasnica installed **1 rack with electric and muscular bicycles**, equipped with the software for renting the bikes and **8 stations/stands** (Figure 5): 4 for electric bicycles compatible with the already existing charging system on the island of Krk and 4 for the muscular bikes. This eco-friendly and cost-effective mode of transportation has provided an efficient way for residents and visitors of Malinska to visit the area and explore the beautiful surroundings. With the addition of electric bicycles, users have been able to travel longer distances and up hills with ease, without the need for a car. The shared bicycle system has proven to be a success, providing a sustainable mode of transportation that benefits the environment and the community.

## Bike racks in Maslinica- Šolta – Croatia

E-mobility & sharing services included both infrastructural works and the purchase of six electric bicycles for renting. The infrastructural works implied the installation of the system for charging six electric bicycles, preparatory construction works, and excavation of the cable duct for laying power cables, setting up and parameterizing the e-bike system, connecting to a local LAN, and establishing software control over the operation of the station.



Figure 6 – Bike racks installed in the Maslinica-Solta by PP10 Dvorac.

The installations are all located in Maslinica-Solta, at the Martinis Marchi marina, which is owned by PP10 Dvorac.

For e-bike stands and e-vehicles charger implementation, immovable parts of the e-bike stands were placed in concrete within Martinis Marchi parking lot. The parking area was painted with all the necessary signs for highlighting the presence of the equipment. In addition, the cables from micro-grid storage facility were brought directly to the bike chargers. The e-bike stand were screwed on the parts in the concrete and connected to the necessary cables. Through the Go2Bike application, PP10 was able to count 236 users until now. They are mostly people coming by boat. As there are approximately 6 to 8 people on each boat arriving in Solta, a single user can rent four bikes or more.

Main lesson learnt: the bike purchased within DEEP-SEA are not fully suitable for island terrain, as the most beautiful beaches and bays are only accessible by off-road trails. In addition, to ensure their use throughout the whole island, PP10 decided to provide further ECS in one more location at least, in cooperation with the Municipality of Šolta.