

# D.T2.2 OUTPUT FACTSHEET: REGIONAL STRATEGY

**Project Title:** REEF2W Increased renewable energy and energy efficiency by integrating, combining and empowering urban wastewater and organic waste management systems

**WP Lead:** adelphi

**Authors:** Marko Zlonoga (REGEA- North-West Croatia Regional Energy Agency)

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**Contact:**

André Müller

adelphi

Alt-Moabit 91

10559 Berlin, Germany

Phone: +49(30)8900068910

Email: [mueller@adelphi.de](mailto:mueller@adelphi.de)



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## Output factsheet: Strategies and action plans

Project index number and acronym	CE946; REEF 2W
Lead partner	ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development
Output number and title	D.T2.5.1. Regional Strategy Croatia
Responsible partner (PP name and number)	REGEA - North-West Croatia Regional Energy Agency (PP10)
Project website	<a href="https://www.interreg-central.eu/Content.Node/REEF-2W.html">https://www.interreg-central.eu/Content.Node/REEF-2W.html</a>
Delivery date	11/2019.

### Summary description of the strategy/action plan (developed and/or implemented)

The main goal of this Regional Strategy is to enable policy makers, national, regional and local authorities to accelerate an appropriate legal and operational framework for implementing REEF 2W solutions. These solutions aim to foster an increase in energy efficiency and the production of renewable energies in the waste and wastewater sector. The Regional Strategy has three objectives: implementing renewable energy production at WWTPs, adding bio-waste in aerobic digestion WWTPs chain and finding solutions for sludge management. There are three strategic areas: capacity building, reaching energy targets and sludge management. Each strategic area has three strategic actions.

The Regional Strategy looks in particular on the production of renewable energy in the Zabok pilot area, using both sewage sludge complemented with bio-waste from the region. The focus is on introducing anaerobic treatment- co-digestion of sludge and bio-waste at the WWTP Zabok, utilization of biogas (CHP and biomethane) and application of digestate as soil improver. The renewable energy potential in the waste and wastewater sector is addressed through REEF 2W. The Regional Strategy is one part of the overall effort to reduce energy consumption, to promote energy transition and the implementation of more energy efficient solutions that help to establish energy-independent WWTPs (and thus their communities). The Regional Strategy focuses on the Zabok pilot, but in accordance with its results, the Regional Strategy can be applicable and usable for other waste and wastewater operators and stakeholders both on regional and national level.

### NUTS region(s) concerned by the Regional Strategy/action plan (relevant NUTS level)

NUTS regions concerned by the Regional Strategy are: On NUTS 1 level there is NUTS-1: Croatia (Code HR0), on NUTS 2 level there is NUTS-2: Kontinentalna Hrvatska (Code HR04) and on NUTS 3 level there is Krapina-Zagorje County (as primary targeted county, where the site of pilot project is located, Code HR043), City of Zagreb (Code HR041), Zagreb County (Code HR042), Karlovac County (Code HR04D).

### **Expected impact and benefits of the Regional Strategy/action plan for the concerned territories and target groups**

The target group in this project and the Regional Strategy comprises local (cities and municipalities) and regional (counties) authorities as well as regional (scope of the project) utilities from waste and wastewater sector. Project for water utilities in the operating area of Zagorski vodovod Ltd. is currently ongoing which includes extension and construction of drainage system and construction of wastewater treatment plant in Zabok. In the meantime REGEA and ZCH will use the outputs of REEF 2W to build capacities and pave the way for a successful implementation of one or more pilot sites in Croatia. The direct expected impact and benefit for Krapina-Zagorje County, municipalities in the area of Zabok agglomeration, is energy saving and energy self-sufficiency of the local WWTPs. With reduction of energy bills and CO<sub>2</sub> emission there is a raising awareness of needed energy transition.

### **Sustainability of the developed or implemented Regional Strategy/action plan and its transferability to other territories and stakeholders**

The Regional Strategy is implemented through three strategic areas with nine strategic actions. With capacity building (Strategic Area I), the idea is to build capacities starting from chosen Krapina-Zagorje County and extend it to other continental counties and, if proven successful, to the other Croatian Counties. The aim of the second strategic area of action is to get municipal and regional level authorities to clearly define their energy targets while advocating and offering REEF 2W solutions for their waste and wastewater utility operators. One of the strategic action in this area is the establishment of an operational framework that includes legal preconditions and suitable finance model(s) that will enable implementing REEF 2W solutions. The third strategic area addresses sludge management issues, such as the so far unsolved problem of sludge disposal. REEF 2W solutions will be hard to implement, or maybe even impossible, if there is no proper and viable solution for sludge disposal. With positive outcomes from all three strategic areas, it is expected that the sustainability of the developed Regional Strategy and its transferability to other regions will be achieved.

### **Lessons learned from the development/implementation process of the Regional Strategy/action plan and added value of transnational cooperation**

During the development of the Regional Strategy, especially the concept, goal, strategic areas and actions, we highly valued transnational cooperation from REEF 2W project. The gained knowledge and shared experience from our partners helped us a lot to define those elements and to improve the Regional Strategy. Through the development of the Regional Strategy, we sensed the importance of getting appropriate data, making precise analysis and establishing good communication with all stakeholders. Only if all stakeholders are actively involved, strategic actions can be implemented. We further realized that one of the challenges regarding the Croatian case is that energy component and sludge disposal of the WWTPs are not sufficiently recognized in waste and water management in Croatia.

### **References to relevant deliverables and web-links If applicable, pictures or images to be provided as annex**

Relevant deliverables include D.T2.5.1. Regional Strategy Croatia and D.T2.3.5. First Part of The Feasibility Study Croatia.