

Local action plan for the port of Šibenik

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Introduction

In accordance with the Transport Development Strategy of the Republic of Croatia for the period from 2017 to 2030 [1], the port of Šibenik is primarily classified as medium-sized passenger port, located in the central part of the Republic of Croatia and is part of the comprehensive TEN-T network. The port welcomes international passengers from cruise ships and domestic ferry passengers and vehicles on its recently built Vrulje passenger line. In addition, small quantities of freight goods, including imports of aluminum and phosphates and exports of fertilizers and wood products for some key onion-related clients, take place at the port. According to statistics, total freight traffic in the port of Šibenik decreased by 14.6 percent between 2009 and 2013, and by 36.4 percent between 2010 and 2012. Between 2012 and 2013, total cargo reverse increased by 22.8 percent. The largest turnover, 650,000 tons of cargo, was achieved in 2010.

In accordance with the Transport Development Strategy of the Republic of Croatia for the period 2017-2030 [1], the port of Šibenik has been declared a port of particular (international) economic interest for the Republic of Croatia.

While one part of the development of the passenger infrastructure of the port of Šibenik has been completed, i.e. it is in the phase of realization, in order to prevent the neglect of further necessary development and modernization of the cargo part of the port of Šibenik, the basic purpose of this document, is to present the current level of development of the port of Šibenik, as well as to present proposals (possibilities) for its further development with special focus on enhancing port environmental sustainability and energy efficiency.

Characteristics of the Port of Šibenik

In 1948/49, the 113 m long vrulje riverbank was restored. After the opening of the Unska railway in 1949, the port of Šibenik recorded a significant increase in traffic, so in 1949 the construction of the 144-meter long Dobrik coast was completed, and on the Rogač peninsula the construction of the coast and the bulk warehouse began. By 1954, 125 meters of coastline had been built, and with 67,000 m² of open space, the Port of Šibenik became a port of bulk cargo. The program of mechanization of the port of Šibenik was carried out in 1958 with the installation of portal and moss cranes on the banks Dobrika and Rogač, and the construction of a railway junction with the Ražine railway station across the southern part of the Port where its own ranching station was built. With

the construction of bulk terminals in 1982, the port of Šibenik specialized in the production of raw phosphates and fertilizer.

The port of Šibenik is naturally protected from the influence of waves and wind, accessible through the Channel St. Anthony (2,700 m long and 120-300 m wide) which allows undisturbed boat navigation up to 50,000 DWT. The length of the port is 10 km, between 300 and 1,200 meters wide, with depths from 8 to 40 meters. The port of Šibenik covers the area of approx. 26 ha sea area and the 22ha mainland area.



Figure 1: Area of port authority Šibenik



Figure 2: Schematic representation of the area of the Šibenik Port Authority

The port of Šibenik consists of two parts – passenger and cargo parts, which make up a total of four operational shores – Vruje, Dobrika, Rogač and Wood Terminal with the following characteristics:

- VRULJE
 - Passenger terminal
 - Coastline length: 519 meters (5 berths: 114m + 50m + 135m + 29m 191m)
 - Maximum depth: 10 meters
- DOBRIKA
 - Import bulk terminal (Phosphate, KCL, DAP, MAP)
 - Terminal capacity: 1,000,000 tons/year
 - Coastline length: 240 meters
 - Maximum depth: 10 meters
 - Maximum ship size: 30,000 DWT

- Disembarkation capacity:
 - Δ 400 tons/hour
 - Ship line capacity: 500 tons/hour
 - Warehouse line capacity: 300 tons/hour
- Conveyor Siwertell:
 - Line length: 24 meters
 - Height: 17 meters
- Warehouse capacity:
 - 105,000 tons of heterogenous cargo (possibility of separation into six sections – five capacities of 15,000 tons and one section with a capacity of 30,000 tons), or
 - 120,000 tons of homogenous cargo
- Loading station:
 - Two 600m-long tracks
 - Two electromechanical scales:
 - Maximum payload: 80 tons
 - Accuracy: 12.5 kg
 - Two bridges on each scale (possibility of measuring axle pressure)
 - Possibility of loading all types of railway wagons (loading from the top or side) without disassembling with disarmed knobs.
 - Capacity: 7,000 tons/day
 - Possibility of simultaneous loading on both tracks of different types of cargo (line of ship and warehouse line)
 - Formation of a marching train on terminal tracks
 - Automated operation of terminals with control of all transport systems for disembarkation of the ship, filling the storage hall, and direct or indirect filling of wagons.

- Environmental protection system:
 - Closed cargo manipulation system
 - All the seats and the loading place of the wagons are covered by anti-dust system.
- ROGAČ
 - Export bulk cargo terminal (KAN, UREA, NPK, grains)
 - Terminal capacity: 400,000 tons/year
 - Coastline length (Rogač 1): 250 m
 - Maximum depth: 10 m
 - Maximum ship size: 30,000 DWT
 - Loading capacity:
 - 150 tons/hour per crane – Σ 300 tons/h
 - Two load-bearing cranes with rakes and mobile loading baskets
 - Mobile transportation system capacity: 200 tons/hour
 - Warehouse capacity: 2 x 2,500 m² (flat floor)
 - Emptying the storage hall – classic loader capacity: 250 tons/hour
 - Disembarkation station:
 - Length of track (R4): 300 meters
 - Ramp for special wagons with side openings
 - Capacity: 150 tons/hour
- WOOD TERMINAL
 - Manipulation (loading and unloading) of cut timber and wood products
 - Coastline length: 310 meters
 - Maximum depth: 7 meters
 - Supported activities:
 - drying wood

- sorting
- cutting
- labeling and packaging
- Warehouse Capacity:
 - Closed warehouses and canopies: 13,500 m²
 - Open, paved warehouses: 55,000 m²
 - Maximum storage distance from the place of loading: 50 meters

Goals and measures of development of the port of Šibenik in compliance with the Strategy of Maritime Development and Integral Maritime Policy of the Republic of Croatia for the period 2014-2020

In accordance with the Transport Development Strategy of the Republic of Croatia for the period from 2017 to 2030 [1], the planned development of the port of Šibenik includes the construction of a new terminal for RO-RO ships, the completion of a new passenger terminal, which is currently under construction, and the modernization of equipment and storage facilities at bulk and general cargo terminals and wood.

Although the previous paragraph taken from the stated Transport Development Strategy of the Republic of Croatia for the period from 2017 to 2030 [1], mentions the need for further development of not only the passenger but also the cargo part of the port, unfortunately the concluding paragraph of the same Strategy, mentions that the further development of the port of Šibenik should exclusively be directed to passenger traffic, namely as a port for the exclusive class of cruise ships of lower capacity (so-called boutique ships) and super-yachts.

Furthermore, in sub-chapter 2.6.5. of the stated Strategy [1], one of the findings is stated the following "Port of Zadar, port of Šibenik and port of Dubrovnik are not focused on freight transport in international shipping", which represents a certain doubleness regarding the port of Šibenik, because the port of Šibenik is the only Croatian port, but also the only port on the eastern Adriatic coast specialized in the manipulation of aluminum, phosphate, fertilizer, and wood products. However, the stated Strategy nevertheless recognizes the importance of further development of

the port of Šibenik, especially its cargo part, through the measure M13 Maritime Transport – "In the port of Šibenik, the modernization of equipment and storage facilities on bulk and general cargo terminals and wood is also planned. Further analyses will identify the necessary projects for the realization of specialization and prioritize them considering environmental requirements and real needs and potential according to expected demand."

When considering the further development of the port of Šibenik should start from two basic premises:

1. Further development of the port necessarily requires investment in existing and new infrastructure, where it is necessary that these investments are sustainable and environmentally friendly, and
2. An increase in the amount of cargo at the port cannot be achieved without infrastructure investments (Ad. 1).

The development of the port of Šibenik at the strategic level is defined by the Guidelines for efficient and systematic management of the maritime sector, which was fully given through the Pre-Accession Maritime Strategy of the Republic of Croatia (2005), and more recently through the Strategy of Maritime Development and Integral Maritime Policy of the Republic of Croatia for the period from 2014 to 2020 [3]. From this strategy it is possible to single out the following objectives and related measures directly applicable to the port of Šibenik:

- AIM 2.1.2: Increase the share of maritime transport in relation to other forms of transport.
 - Measure 2.1.2.1: Encourage coastal and coastal navigation for freight traffic including Ro-Ro traffic (transport of petroleum products, gas and other hazardous cargo).
- AIM 2.4.1: "Port specialization"
 - Measure 2.4.1.6: "Specialize the port of Šibenik as a port for the reception of more exclusive cruise ships with a smaller capacity (boutique boats) and mega yachts".

- AIM 2.4.2: Achieve self-sustainability of the port system while increasing the efficiency.
 - Measure 2.4.2.2: Increase the efficiency and quality of service provision to ensure the competitiveness of the transport route.
 - Measure 2.4.2.3: Encourage the development of ports as logistics centers integrated into multimodal routes and attract high-value cargoes in ports.
 - Measure 2.4.2.6: Provide infrastructure for the provision of LNG (Liquefied Natural Gas) supply services for propellant and other alternative fuel in accordance with market needs.
 - Measure 2.4.2.7: Build and modernize land transport infrastructure and transport in port areas as well as transport links between ports and the hinterland, especially in the rail transport segment.
 - Measure 2.4.2.8: Improve the availability and economy of energy efficiency and environmental pollution prevention systems in ports including the reception of waste and cargo residues integrated into general pollution and waste management systems.
- AIM 2.4.3: Revitalize already built and build new port capacities.
 - Measure 2.4.3.2: Extend port areas to all existing facilities intended for mooring vessels and expanding the sea waters for anchoring purposes.
 - Measure 2.4.3.3: Increase the capacity of communal parts of public ports by 30% compared to existing capacities or construction of new communal ports if it is not possible within the existing spatial capacities.
- AIM 3.2.1: Prevent environmental pollution and harmful impact of maritime facilities on the Adriatic Sea.
 - Measure 3.2.1.5: Provide conditions for a sustainable and accessible service for the reception and disposal of marine waste and cargo residues.
- AIM 3.2.3: Reduce the harmful effects of pollution from maritime facilities.
 - Measure 3.2.3.3: Ensure the availability of equipment and devices for operation in the economic zone of the Republic of Croatia, territorial sea and inland sea waters.

Furthermore, the aforementioned Strategy [3] under SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is mentioning the following elements important for the further development of the port of Šibenik:

- **STRENGTHS:**
 - Geographical location and geomorphological characteristics of the coast
 - Involvement of maritime transport in the European transport network.
- **OPPORTUNITIES:**
 - Membership in the European Union and the expansion of the European Union to neighboring countries,
 - Possibility of financing from EU funds,
 - Maritime transport represents a safe, energy efficient and environmentally friendly transport modality,
 - Possibility of greater use of maritime development capacities,
 - Development and application of modern technologies,
 - Demand for value-added port services.
- **WEAKNESSES:**
 - Insufficient capacities of ports of county and local importance/level,
 - Underdeveloped multimodal transportation.
- **THREATS:**
 - Non-complicated development of railway and maritime infrastructure.

Development of the passenger part of the port of Šibenik

The passenger part of the port of Šibenik covers the coast of Vrulje for the reception of passengers in international and domestic maritime traffic with the accompanying passenger terminal. According to the existing project, it is planned that the maritime-passenger terminal includes a separate "building A" (near the beginning of construction) with predominantly public content for

reception, i.e. embarkation and disembarkation of passengers, customs offices and similar related needs. On the same land plot of maritime property southeast of "Building A", on the spatial coverage of the passenger terminal, the Port of Šibenik Authority intends to activate the project "Building B" for the purpose of supplementing public and other possible related commercial facilities, with additional public and other related facilities and necessary services, to supplement the offer, and to provide a complete set of services related to the needs of the passenger terminal.

Since these buildings are in the newly renovated area of the Vrulja coast, they provide opportunities to apply new technologies in line with the concept of passenger terminals such as e.g., installing solar benches and waiting rooms with chargers for mobile devices and laptops, renting electric bicycles and scooters, installing charging stations for electric vehicles.

When building "Building A" and "Building B", it is important to plan and apply the system of using sea and solar energy for heating and cooling, collecting solar energy, and collecting stormwater.



Figure 3: Future Maritime Passenger Terminal “building A” and auxiliary “building B”

Ministry of Construction and Physical Planning issued on April 11, 2018. 4. amendment of the location permit for the intervention in the area Of Upgrading the Vrulje under the maritime-passenger terminal in the port of Šibenik. The Main and Detailed Design with Bill of Quantities has been submitted. Final Building permit CLASS was obtained: UP/I-36-03/18-01/000263, URBOJ: 531-06-3-1-19-0013 from June 2019. The project was approved for co-financing under the Aid Program to increase the availability of inhabited islands for their inhabitants from the Operational Program Competitiveness and Cohesion 2014-2020, Priority 7: Connectivity and Mobility. The cost allocation shows that the ratio of eligible and ineligible construction costs of the maritime passenger terminal is 54.02%:45.98%. On 01.07.2020. The process of obtaining the consent of the Government of the

Republic of Croatia to the project of modernization of the port area of the port of Šibenik and for a loan in the amount of EUR 20 million has been initiated, from which the rest of the costs related to the construction of the PPT building that are not eligible will be financed. Accordingly, the following dynamics of activities on the project are planned:

1. Location permit – issued on 11.04.2018
2. Main project – submitted 06/2018
3. Building permit – 05/2019
4. Implementation project – 05/2019
5. Financial decisions and arrangements 12/2020
6. Preparation of tender documentation and implementation of tenders for works 10/2020 – 05/2021
7. Start of works 07/2021
8. Completion of works 12/2022.

Development of the cargo part of the port of Šibenik

Manipulation of specialized cargoes in the port of Šibenik takes place on obsolete port technology, with negative ecological impact (especially when manipulating bulk cargo, where black dust is formed), and the unadjusted (outdated) port transport infrastructure (roads, railway lines) and the relatively poor connection of the bulks within the port, highlighting the insufficient connection of the Wood Terminal with other parts of the port.

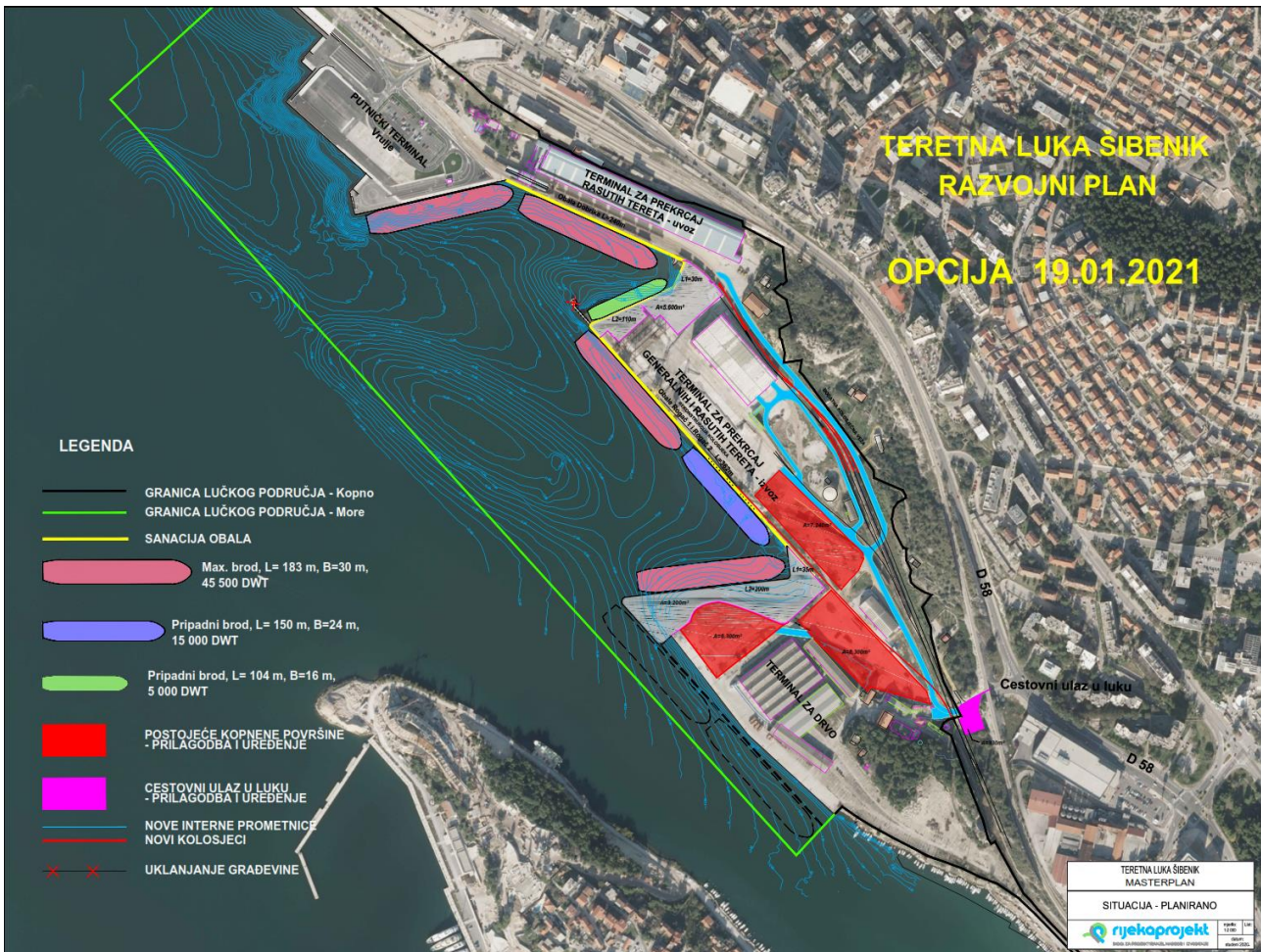


Figure 4: Detailed overview of the development plan of the port of Šibenik

Also due to the micro-geographical location itself, port capacities are currently limited, but with the possibility of their expansion. Port of Šibenik in the development plan, and in accordance with the defined conditions by the Republic of Croatia, must in the coming period (2021-2023) do the following procedures in the area:

- Freight port – Dobrička operational coast
 - renovation of the Dobrička coast
 - remediation and bonification of the Dobrička plateau soil

- reconstruction of the railway line
- remediation of basic infrastructure
- remediation and reconstruction of fecal and storm drainage
- remediation and reconstruction of overhead electrical installations and underground cables.
- Freight port – Rogač operational coast
 - renovation of the Rogač coast
 - remediation and bonification of the Rogač plateau soil
 - reconstruction of the railway line
 - remediation of basic infrastructure
 - remediation and reconstruction of fecal and storm drainage
 - remediation and reconstruction of overhead electrical installations and underground cables.
- Freight port – Wood Terminal operational coast
 - renovation of the Wood Terminal coast
 - remediation and bonification of the Wood Terminal plateau soil
 - reconstruction of the railway line
 - remediation of basic infrastructure
 - remediation and reconstruction of fecal and storm drainage
 - remediation and reconstruction of overhead electrical installations and underground cables.
- Connecting the coasts of Dobrika and Rogač
 - construction of a coastal wall in the length of about 130 m
 - reconstruction of the marginal plateau of the Rogač coast
 - construction of the railway line

- construction of water supply with hydrant network
- construction of fecal and storm drainage systems
- construction of underground electrical installations.
- Connecting the coasts of Rogač and Wood Terminal
 - construction of a coastal wall in the length of about 200 m
 - reconstruction of the marginal plateau of the Wood terminal coast
 - construction of the railway line
 - construction of water supply with hydrant network
 - construction of fecal and storm drainage systems
 - construction of underground electrical installations.
- Construction of the coast for the reception of Ro-Ro ships
 - construction of a pier in length of approx. 220 m
 - construction of the railway line
 - construction of water supply with hydrant network
 - construction of fecal and storm drainage systems
 - construction of underground electrical installations.
- Uređenje plato i manipulacijskih površina
 - construction of the railway line
 - construction of water supply with hydrant network
 - construction of fecal and storm drainage systems
 - construction of underground electrical installations.
- Renovation and reconstruction of the guardrail with the main entrance to the port
 - demolition of the old fence
 - construction of underground electrical installations
 - construction of fence with height defined for state ports approx. up to 5m

- demolition of the old entry gate
- construction of the new entry gate.
- Demolition of existing non-operational buildings
- Construction of new on the site of old facilities
- Rehabilitation and reconstruction of existing tanks
- Construction of seawater reception system.

These interventions are basic elements and necessary preconditions for the future development of the port of Šibenik, but they are also a necessary condition for improving the environmental sustainability and energy efficiency of the port of Šibenik.

Planned activities within the project Modernization of the port area of the port of Šibenik related to the cargo part:

1. Preliminary design with bill of quantities (Project number: IP-G-43-19) for: Arrangement of port infrastructure in the cargo part of the port, 10/2019.
2. Feasibility Study for the project Modernization of the Port of Šibenik Port Area has been developed.
3. Investigative work is under way to prepare the project documentation that started on 10/2020 will last until the end of February 2021.
4. Preparation of project documentation for individual phases of the project 01/2021 – 07/2021.
5. Obtaining the necessary location and building permits 02/2021 – 12/2021.
6. Preparation and implementation of procurement 01/2021 – 06/2022, and
7. Works 03/2021 – 12/2023 according to the following GANTT chart:

PREP/P1. = PREPARATION; PROC/P2. = PROCUREMENT; EXEC. = EXECUTION		2021												2022												2023																								
R.br.	AKTIVNOST	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12													
1	COASTAL REMEDIATION, TRACK R1, R2	PREP.		PROC.	EXECUTION																																													
2	LANDSCAPING OF EXISTING ROADS AND MANIPULATIVE SURFACES												PREP.		PROC.	EXECUTION																																		
3	REHABILITATION OF CONCRETE STRUCTURE OF THE WOOD TERMINAL COAST	PREP.		PROC.	EXECUTION																																													
4	REMEDiation OF MANIPULATIVE SURFACE TIMBER TERMINAL - EAST	PREP.		PROC.	EXECUTION																																													
5	REPLACEMENT OF THE FENCE OF THE PORT AREA	PR.	PROC.	EXECUTION																																														
6	DEMOLITION OF EXISTING NON- OPERATIONAL BUILDINGS	P1.	P2.	EXEC.																																														
7	CONSTRUCTION OF THE NEW ENTRY GATE	P1.		PERMIT	P2.	EXEC.																																												
8, 9	CONSTRUCTION OF ADDITIONAL ROADS AND RAILWAY INFRASTRUCTURE	PREPARATION			BUILDING PERMIT							PROCUREMENT					EXECUTION																																	
10	CONSTRUCTION OF THE CONNECTING COAST: DOBRKA COAST - ROGAČ COAST AND ROGAČ COAST - SHORE WOOD TERMINAL	PREPARATION			BUILDING PERMIT							PROCUREMENT					EXECUTION																																	

Table 1: GANTT chart of planned activities within the project Modernization of the cargo part of the port area of the port of Šibenik

Improving the environmental sustainability and energy efficiency of the port of Šibenik

A special emphasis, as well as a condition that must be respected when achieving the interventions in the previous chapter, is the improvement of the environmental sustainability and energy efficiency of the port of Šibenik, i.e., the use of renewable energy that can be achieved:

- By setting up a system for:
 - A. accepting the **sea energy**,
 - B. accepting the solar **energy**,
 - C. **wind energy** reception.
 - Accumulation of energy obtained from the system:
 - within the port area,
 - outside the port area.
 - • By transporting and storing accumulated energy in:
 - 300 bar base stations for steam turbine purposes,
 - hydrogen storage tanks (gaseous, liquid),
 - tanks for the storage and treatment of distilled water.
- A. Systems for the use of **sea energy** (use of constant sea temperature difference, i.e., air-to-sea temperature difference – heat pumps, reservoir installations):
- *Use of constant sea temperature:*
 - in independent separate locations (reservoirs) for every 200 m of coastline,
 - for a group of buildings (existing and new),
 - production of basic installation of heat distribution system,
 - sea temperature on buildings can be used through constructive parts of the roof and facade building),
 - heat transfer between condensed water and distribution pipeline sheath.

- • *Use of the sea water for irrigation and production of sanitary and distilled water:*
 - suction for the sea water in independent separate locations, accumulation along the coastline, for every 200 m of coastline,
 - suction and reception of the sea water in independent separate locations, accumulations on floating objects or buildings for every 200 m of coastline,
 - reservoirs up to 1000 m from the coastline every 200 m of coastline, in independent separate locations,
 - transfer of distilled water steam to the reservoir zone,
 - production of reservoirs for mineralogical water treatment,
 - for buildings (existing and new),
 - production of basic distribution pipeline installation for irrigation or for the use of sanitary water.

B. Solar energy systems (photovoltaic cells or pyramid solar focus power plants):

- Solar energy can be applied:
 - on port buildings and surfaces (existing and new),
 - in locations that are further away - cable from the end (approx. 300 m),
 - in locations away from the coast - inside the cable from the end (approx. 300 m),
 - in self-contained locations on the sea,
 - on the protective elements of beaches,
 - on the protective port elements,
 - on the protective elements of the coast,
 - in the maricultural fields.

C. Wind energy systems:

- The use of wind energy can be applied:
 - in locations that are further away - cable from the end (approx. 300 m),
 - in locations away from the coast - inside the cable from the end (approx. 300 m),
 - on self-contained locations on the sea,
 - on the protective elements of beaches,
 - on the protective port elements,
 - on the protective elements of the coast,
 - on the protective elements from oil spills and other sea spills,
 - in the maricultural fields.

The application of these systems in the use of renewable energy sources in the Šibenik Port Authority jurisdiction area is shown in Table 2.

Place of application	Facility	Energy type	Application
Passenger part of the port	"Building A"	Sea energy	Heating Cooling
		Solar energy	Heating, Electricity production
	Wind energy	Electricity production	
	"Building B"	Solar energy	Heating, Electricity production
Cargo part of the port	All facilities	Solar energy	Electricity production
Entire port area		Wind energy	Wind turbines in the outer fence of the port area
		LED lighting (interior and exterior)	Reducing electricity consumption
		Air quality monitoring sensors	Constant monitoring of air quality and reduction of air pollution
		Weather station	Weather monitoring and prediction
		Measuring buoys	Constant control of marine conditions
		Solar energy Wind energy	Railroad electrification, Electric vehicles for movement in the port area
		Stormwater drainage and fecal water purification	

Table 2: Overview of the applicable systems of environmental sustainability and energy efficiency in Šibenik Port Authority jurisdiction area

SWOT analysis of improving the environmental sustainability and energy efficiency of the port of Šibenik

Below is a SWOT analysis of improving the environmental sustainability and energy efficiency of the port of Šibenik:

- **STRENGTHS:**
 - Potential of improving existing and construction of new port infrastructure,
 - Possibility to select and apply optimal technology.
- **OPPORTUNITIES:**
 - Building new infrastructure provides an opportunity to implement new technologies to achieve environmental sustainability and improve energy efficiency,
 - Possibility of financing from EU funds,
 - Implementation of new services,
 - Unique specialization of the freight part of the port of Šibenik,
 - Maritime transport represents a safe, energy efficient and environmentally friendly transport modality,
 - Possibility of greater use of maritime development capacities.
- **WEAKNESSES:**
 - There are no shortcomings that would arise because of improving the environmental sustainability and energy efficiency of the port of Šibenik.
- **THREATS:**
 - Waived opportunity to implement new technologies upon renewing and building new port infrastructure.

Compliance with environmental sustainability and energy efficiency policies on local, national, EU and international levels

The activities outlined in this plan are consistent with the following environmental sustainability and energy efficiency policies at local, national, European, and international level:

- Ordinance on determining the class and quantity of dangerous substances of the Port of Šibenik Authority, <https://www.portauthority-sibenik.hr/pdf/Pravilnik-o-odredivanju-klase-i-kolicine-opasnih-tvari.pdf>
- Waste management plan of the Šibenik Port Authority, <https://www.portauthority-sibenik.hr/pdf/Plan-gospodarenja-otpadom-s-brodova-01-2018.pdf>
- Ordinance on amendments to the regulations on handling dangerous substances, conditions and manner of transport in maritime transport, loading and unloading of dangerous goods, bulk and other cargo in ports, and how to prevent the spread of spilled oils in ports, https://narodne-novine.nn.hr/clanci/sluzbeni/2020_11_128_2445.html
- National action plan for renewable energy sources to 2020, https://ec.europa.eu/energy/sites/ener/files/documents/dir_2009_0028_action_plan_croatia.zip
- Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32000L0059>
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02000L0060-20141120>
- Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0056-20170607>
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0098-20180705>
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028>

- Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0135.01.ENG
- Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.328.01.0210.01.ENG
- Initial IMO Strategy on reduction of GHG emissions from ships, https://unfccc.int/sites/default/files/resource/250_IMO%20submission_Talanoa%20Dialogue_April%202018.pdf
- A European Strategy for Low-Emission Mobility, https://ec.europa.eu/clima/policies/transport_en#tab-0-1
- A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2015:80:FIN>
- The European Strategic Energy Technology Plan (SET Plan), <https://setis.ec.europa.eu/actions-towards-implementing-integrated-set-plan>
- A European Green Deal, https://www.europarl.europa.eu/doceo/document/TA-9-2020-0005_EN.html
- Resolution on the European Green Deal, [https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2019/2582\(RSP\)](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2019/2582(RSP))
- Resolution on climate change – a European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy in accordance with the Paris Agreement, [https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2019/2582\(RSP\)](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2019/2582(RSP))
- Long-term low greenhouse gas emission development strategy of the EU and its Member States, <https://unfccc.int/documents/210328>

Sources of funding

The envisaged sources of financing of activities mentioned throughout this document are:

- EU Operational Program Competitiveness and Cohesion
- The Environmental Protection and Energy Efficiency Fund (EPEEF),
- Innovation and Networks Executive Agency (INEA),
- Connecting Europe Facility (CEF),
- Horizon 2020 – Smart, green, and integrated transport + Secure, clean, and efficient energy,

- European Structural and Investment (ESI) funds,
- European Fund for Strategic Investments (EFSI),
- Innovation Fund (INNOVFUND),
- INTERREG
- Republic of Croatia national budget,
- Private investors – concessionaires,
- Croatian Bank for Reconstruction and Development.

Literature

1. Transport Development Strategy of the Republic of Croatia for the period from 2017 to 2030
2. Order on the classification of ports open to public transport, Official Gazette, No. 85/15
3. Maritime development strategy and integral maritime policy of the Republic of Croatia for the period from 2014 to 2020, Official Gazette, No. 93/14