

**MODERNISATION FUND**  
Accelerating the transition to climate neutrality

MODERNISATION FUND

REPUBLIC OF CROATIA

*Annual report 2022*



**REPUBLIC of CROATIA**  
Ministry of Economy and  
Sustainable Development

## INTRODUCTION

The Modernisation Fund operates under the responsibility of the beneficiary Member States in close cooperation with the European Commission (EC) and the European Investment Bank (EIB) in accordance to Commission Implementing Regulation EU 2020/1001 of 9 July 2020 laying down detailed rules for the application of Directive 2003/87/EC (EU ETS Directive).

The Modernisation Fund is funded from revenues of auctioning of 2% of the total allowances for 2021-2030 under the EU Emissions Trading System (EU ETS). Republic of Croatia has a share of 3.14% and with additional allowances transferred by Republic of Croatia (transfer in accordance with Article 10c of EU ETS Directive), total allowances for Republic of Croatia are 14 633 114.

In accordance with the Act on Climate Change and Ozone Protection (OG 127/2019), the Ministry of Economy and Sustainable Development, specifically, its Climate Change department and Energy department, (hereinafter: MESD) is responsible for the implementation of activities related to the Modernisation Fund in Croatia. Disbursement of the funds will be done through the Environment Protection and Energy Efficiency Fund (EPEEF), responsible for receiving the funds from European Investment Bank (EIB), and for disbursing the funds to project promoters. The funds will not be disbursed in one single tranche, but rather on multiple tranches directly linked to the progress made in the project implementation. The obligations from the Implementing Regulation (EU) 2020/1001 regarding the setup of the Modernisation Fund implementation in Republic of Croatia have been further elaborated by the Regulation on financing mechanisms within the emissions trading system, that is planned to be adopted by Croatian government in 2023.

In accordance with Implementing Regulation (EU) 2020/1001 this Annual report provides an overview of the investment activities of the Modernisation Fund in Croatia in 2022.

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## 1. Overview of investments

The cumulative overview of investments financed from the Modernization fund is described in three sections:

### A. Investment confirmed/approved in prior reporting period (2021)

The investment project “Energy efficiency improvement and generation of electricity from renewable sources of the Dilj production plants” (ref: MF 2021-2 HR 0-002) that has received confirmation by EIB on October 11th, 2021 and for which the revenues were transmitted from EIB to the EPEEF account in December 2021 is under implementation and will be on-going up to 2024.

Detailed information on the implementation of the investment can be found in Chapter 3.

### B. Investment confirmed/approved in current reporting period (2022)

In the two disbursement cycles of 2022, EIB has confirmed tri priority investments submitted by MESD, two investment schemes and one investment project:

1. Scheme for production of electricity from renewable energy sources in manufacturing industry (ref: MF-2022-1-HR-0-001)

*The scheme supports increase of RES usage, resulting in a decrease of energy consumption from non-RES (fossil fuels) and decrease of GHG emissions from the energy sector.*

2. Scheme for energy efficiency improvement and high-efficiency cogeneration investments in the manufacturing industry (ref: MF-2022-2-HR-0-002)

*The scheme supports energy efficiency measures and high-efficiency cogeneration, resulting in reduction in primary energy consumption, decrease of energy consumption from non-RES (fossil fuels) and decrease of GHG emissions from the energy sector.*

3. Project ”Grid scale smart energy storage” (ref: MF-2022-2-HR-0-004)

*The project contributes to improving energy security and decrease of GHG emissions from the energy sector by providing large utility –scale battery storage (50W/110MWh) for balancing the electricity transmission network (110kv) and enabling a larger introduction of RES into the grid.*

The investment schemes are planned based on results from the Public Call for Expression of Interest conducted by MESD in last quarter of 2021, to be implemented in the period 2022 – 2025 in accordance with the Regulation (EU) No 651/2014 1(GBER). The value of each scheme is 80 M EUR, with total amount financed from the Modernisation Fund. The Call for proposals within the Scheme for production of electricity from renewable energy sources in manufacturing industry was prepared during 2022, and opened on April 17<sup>th</sup>, 2023 with the deadline for application by June 19<sup>th</sup>, 2023. The Call for proposals within the Scheme for energy efficiency improvement and high-efficiency cogeneration in manufacturing industry is in preparation and planned for opening in 2023.

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<sup>1</sup> Consolidated text: Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty (Text with EEA relevance) Text with EEA relevance (OJ L 187/2014, L 156/17, L 215/2020, L 89/2021, L 270/2021)

The investment project "Grid scale smart energy storage" (ref: MF-2022-2-HR-0-004) will be implemented by the project proponent IE ENERGY d.o.o. (Ltd) in the period 2022- 2025.

C. Investments planned for submission in upcoming reporting period (2023)

In second part of 2022 sectoral consultations were conducted (Expressions of Interest) in order to estimate the need for support of project proposals in regard to generation and use of renewable energy sources in public service sector, namely water supply service providers and waste collection service providers.

Based on the results, in last quarter of 2022 the MESD was preparing two priority investment proposals as schemes for generation and use of renewable energy sources in public service sector. The investment proposals were planned for submission to EIB in first disbursement cycle in 2023, in total amount of 80 M EUR from the Modernisation Fund.

The MESD has up to end of 2022 submitted investment proposals only for priority investments so the overall ratio of the financing provided from Modernization fund is 100% to priority investments in accordance with article 10d of the ETS Directive. The overview of priority investments and the distribution of investment values according to specific priority areas is given below in Figure 1.:

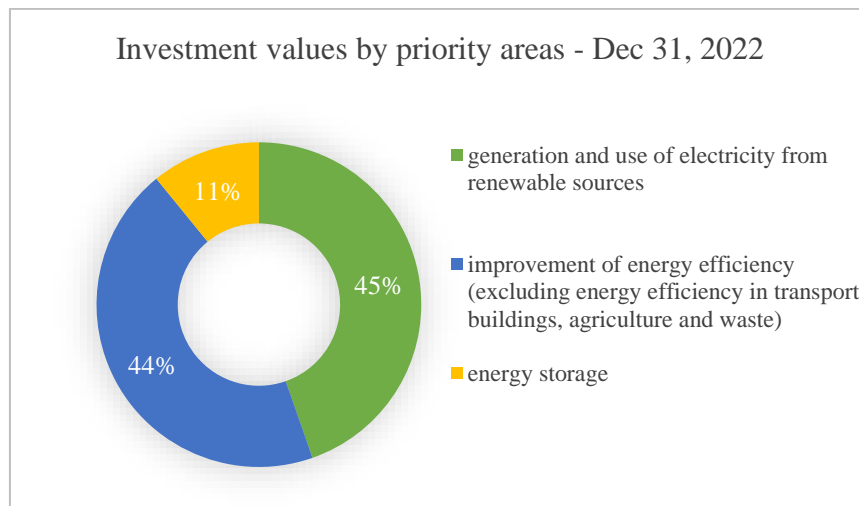


Figure 1 Priority areas of investments confirmed from Modernization fund by end of 2022

Detailed overview of status of investments financed from Modernization fund as of December 31 2022 is given in the table below:

Investments ( December 2022)		Number	Reference
1.1.	financed investments	4	Schemes: MF-2022-1-HR-0-001; MF-2022-2-HR-0-002 Projects: MF-2021-2-HR-0-002; MF-2022-2-HR-0-004
	on - going investments	4	
1.2.	completed investments	0	n.a. <sup>2</sup>
	discontinued investments	0	n.a. <sup>3</sup>
1.3.	Overall ratio of the financing (priority against non-priority investments)	100%	Schemes: MF-2022-1-HR-0-001; MF-2022-2-HR-0-002 Projects: MF-2021-2-HR-0-002; MF-2022-2-HR-0-004

<sup>2</sup> Confirmed investment proposals were still ongoing in 2022 and there were no completed investments

<sup>3</sup> Confirmed investment proposals were ongoing in 2022 and there were no discontinued investments

The investments contribute to the implementation of Croatian commitments under the Paris Agreement, obliging countries to reduce greenhouse gas emissions.

The investments contribute to the implementation of commitments under the National Development Strategy of the Republic of Croatia until 2030: Strategic Goal 8. Ecological and energy transition for climate neutrality (Official Gazette 13/21,), Energy Development Strategy of the Republic of Croatia until 2030 with a view to 2050 (Official Gazette 25/20), Low Carbon Development Strategy of the Republic of Croatia until 2030 with a view to 2050 (Low Carbon Strategy) (Official Gazette 63/21). Furthermore, the general objectives are also in line with the objectives of the National Recovery and Resilience Plan (C1.2: Energy transition for a sustainable economy).

## 2. Information on each investment

### 2.1. Total investment triggered (total investment costs)

Total investment costs for all confirmed investments up to end of 2022 are 224.36 M EUR without VAT and total amount to be financed from the Modernization fund is 181.96 M EUR without VAT, with the disbursed total amount to Croatia until end of 2022 is 121.96 M EUR.

Total investment costs of the schemes are representing only the public support, as the projects have not been selected in 2022. It is expected that the additional private sources mobilized by the support given from public sources (Modernisation Fund) will almost double the amount invested.

Detailed information for each investment is given in the table below:

<b>Modernization fund Investments</b>	<b>Total value of investment €</b>	<b>Total amount disbursed from MF €</b>
<b>2021</b>		
Energy efficiency improvement and generation of electricity from renewable sources of the Dilj production plants	4.36 M €	2.16 M €
<b>2022</b>		
Grid scale smart energy storage	60 M €	19.8 M €
Scheme to support the investments in energy efficiency improvement from the Modernisation Fund	80 M <sup>4</sup> €	40 M €
Scheme to support the production of electricity from renewable energy sources from the Modernisation fund	80 M <sup>7</sup> €	60 M €
<b>Total</b>	<b>224.36 M €</b>	<b>121.96 M €</b>

<sup>4</sup> Total investment costs of the schemes are representing only the public support. The rough estimate is that the additional private sources mobilized by the support given from Modernisation Fund will almost double the amount invested. The more detailed estimate will be known upon signing the contracts with project proponents selected on the call for proposals within the schemes.

2.2. *Dates and amounts of payments from the Modernisation Fund to the project proponent or the scheme managing authority;*

The payments for confirmed investments from the Modernisation Fund, both for schemes and projects, are held at the account of the EPEEF, under the management of MESD<sup>5</sup> in accordance with the Act on Climate Change and Ozone Protection.

The overview of payments from the Modernisation Fund to MESD in 2022 for each investment is given in table below:

<b>Modernization fund Investments</b>	<b>Dates of payment</b>	<b>Amount from MF</b>
Grid scale smart energy storage	21.12.2022	19.8 M €
Scheme to support the investments in energy efficiency improvement from the Modernisation Fund	21.12.2022	40 M €
Scheme to support the production of electricity from renewable energy sources from the Modernisation fund	09.06.2022	40 M €
	21.12.2022	20 M €
<b>Total</b>		<b>119.8 M €</b>

2.3. *Amounts received from the Modernisation Fund by the beneficiary Member State but not yet paid to the project proponent or the scheme managing authority*

Amounts received from the Modernisation Fund for confirmed investments by the beneficiary Member State, both for schemes and projects, are held at the account of the EPEEF, under the management of MESD<sup>6</sup> in accordance with the Act on Climate Change and Ozone Protection.

The overview of amounts from the Modernisation Fund not yet paid in 2022 to project proponent or the scheme managing authority for each investment is given in table below:

<b>Modernization fund Investments</b>	<b>Amount from MF not yet paid (in €)</b>	
Grid scale smart energy storage	19.8 M <sup>7</sup> €	
Scheme to support the investments in energy efficiency improvement from the Modernisation Fund	0 €	
Scheme to support the production of electricity from renewable energy sources from the Modernisation fund	0 €	
<b>Total</b>		<b>19.8 M €</b>

The amount from the Modernisation fund regarding the investment project Grid scale smart energy storage was received in national account (EPEEF) at the end of December 2022, with the payments to the project proponent planned in instalments over the implementation period up to 2025. During 2022, project proponents have not received funds from the Modernisation fund for

<sup>5</sup> MESD is the scheme managing authority for all schemes in the Modernization fund and national authority responsible for the implementation of the Modernisation Fund

<sup>6</sup> MESD is the scheme managing authority for all schemes in the Modernization fund and national authority responsible for the implementation of the Modernisation Fund

<sup>7</sup> Payments to the project proponent will be done in instalments over the implementation period.

confirmed investments.

2.4. *Any amounts recovered by the beneficiary Member State from the project proponent or the scheme managing authority, and the dates of recovery;*

All investments financed from the Modernization fund are still in implementation in 2022, and therefore there were no recovered amounts from the project proponents or the scheme managing authority within the confirmed investments.

Detailed information for each investment is given in the table below:

<b>Modernization fund Investments</b>	<b>Implementation period</b>	<b>Dates of recovery and amounts recovered</b>
Energy efficiency improvement and generation of electricity from renewable sources of the Dilj production plants	2021-2024	n.a.
Scheme to support the production of electricity from renewable energy sources from the Modernisation fund	2022-2024	
Grid scale smart energy storage	2022-2025	
Scheme to support the investments in energy efficiency improvement from the Modernisation Fund	2022-2025	
	<b>Total</b>	<b>n.a.</b>

2.5. *An assessment of the added value of the investment in terms of energy efficiency and modernisation of the energy system, including information on the following:*

- (a) *the energy saved in MWh;*
- (b) *expected cumulative MWh saved by the end of the investment lifetime;*
- (c) *the greenhouse gas emissions saved in tCO<sub>2</sub>;*
- (d) *expected cumulative tCO<sub>2</sub> saved by the end of the investment lifetime;*
- (e) *the additional renewable energy capacity installed, if applicable;*
- (f) *achieved leverage of funds (total amount invested in relation to the contribution from the Modernisation Fund);*

The investments financed from the Modernization fund are on-going until 2024 and 2025 respectively and therefore there were no added values of the investment<sup>8</sup> from Modernisation fund that could be reported in 2022.

Expected added value of each investment financed from the Modernization fund is given in table below:

<sup>8</sup> Values at the time of the report are 0.



Assessment of the added value of the investment <i>EXPECTED</i>	Project - Energy efficiency and RES at Dilj production plants	Scheme - support production of electricity from RES	Scheme - support energy efficiency improvement	Project - Grid scale smart energy storage
Energy savings (MWh/year)	8.737	140.000	400.000	16.500
Expected cumulative MWh saved by the end of the investment lifetime	129.756	2.163.140 <sup>9</sup>	2.360.000 <sup>9</sup>	165.000
GHG saved (tCO <sub>2</sub> /year)	2.538	60.000	180.000	10.810
Expected cumulative tCO <sub>2</sub> saved by the end of the investment lifetime	38.319	343.939 <sup>9</sup>	2.162.000 <sup>9</sup>	108.101
Additional RES capacity installed (kW)	2.310	80.000	n.a.	n.a.
Leverage of funds (%)	2,02	~2 <sup>10</sup>	~2 <sup>10</sup>	3,03

The largest contribution to the GHGs emission in Croatia in 2019 was the Energy sector with 69.6 %, requiring the energy development aimed at reducing GHGs by expanding use of renewable energy sources (RES), along with ensuring energy efficiency (EE).

The added value of confirmed investments is expected to result in significant expanding RES use together with reduction of final energy consumption in manufacturing industry.:

The increase in installed capacity for electricity generation from RES (regarding solar, biomass and biogas) is expected to be 140 GWh, which would lead to 10% increase of RES capacities (regarding solar, biomass and biogas) in Croatia in 2021, and could double the total electricity generation capacity RES from solar compared to solar capacity in 2021. The electricity generation from RES in Croatia is given in figure 2.

The final energy consumption in manufacturing industry in 2021 was 43.74 PJ, and the expected reduction due to energy efficiency measures is expected to result in up to 5% relative decrease.

These results will contribute to national targets defined in the Integrated National Energy and Climate Plan for the Republic of Croatia for the period 2021-2030 (NECP)<sup>11</sup>, Low carbon development strategy of the Republic of Croatia until 2030 with a view to 2050 (OG 63/2021) and in line with approved Recovery and Resilience Plan for Croatia<sup>12</sup>.

<sup>9</sup> Expected cumulative energy and corresponding GHG savings by the end of the investment lifetime are only rough estimates, as the schemes foresee multiple types of measures with different lifetimes and emission factors. The first estimates will be known upon signing the contracts with project proponents selected on the call for proposals within the schemes, which is expected by end of 2023.

<sup>10</sup> The leverage of funds within the schemes are roughly estimated as the projects have not yet been selected, so the total amount invested by project beneficiaries and the amount of support from the MF are not known at the time of the report. The first estimates will be known upon signing the contracts with project proponents selected on the call for proposals within the schemes.

<sup>11</sup> [Integrated National Energy and Climate Plan for the Republic of Croatia for the period 2021-2030 – update in progress at the time of the report](#)

<sup>12</sup> [Recovery and Resilience Plan for Croatia](#)

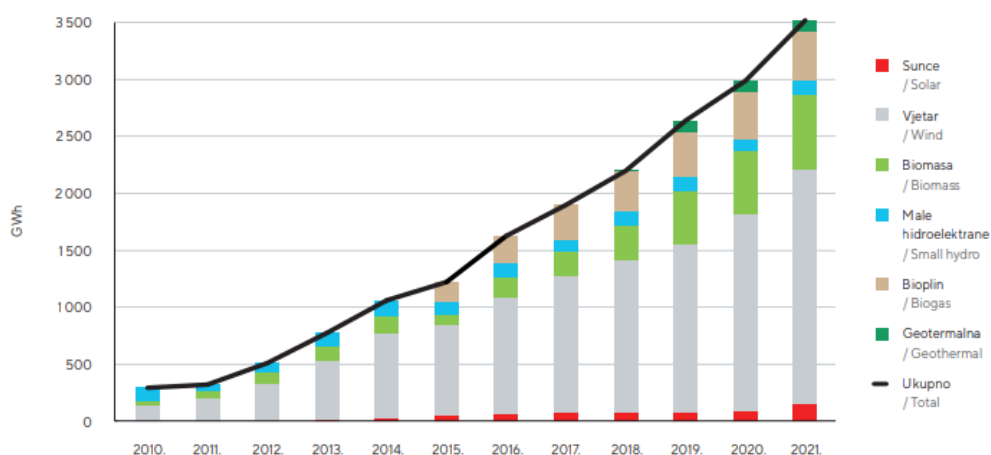


Figure 2. RES-Electricity generation in Croatia. Source: EIHP, *Energy in Croatia, Annual energy report for 2021*

2.6. When the investment aims at implementation of a territorial just transition plan, information about the expected contribution of the investment to that plan.

The Territorial Just Transition Plan (TJTP) for delivering a just climate transition in two Croatian counties (Istria and Sisak-Moslavina) was developed by the national authorities, led by Ministry of regional development and EU funds, in cooperation with local stakeholders and the Commission and was approved in December 2022.

The Territorial Just Transition Plan (TJTP) foresees that the Just Transition Fund will be used to diversify the economy thanks to reskilling and upskilling activities, the creation of hubs for sustainable technological innovation and new circular business models in the manufacturing sector.

Investments that were confirmed to be financed from the Modernization fund up to end of 2022 have not been aimed directly at implementation of a territorial just transition plan, although they aim at supporting shift to reusable energy sources and climate transition in the manufacturing sector on the national level. Future investments from the Modernization fund will be developed in close cooperation with the TJTP and NRRP to ensure the optimal funding for investments ensuring climate transition by 2030.

### 3. Additional information about investments other than schemes

In 2022 the MESD (in collaboration with EPEEF) is overseeing implementation of only one project investment, the priority investment under ref. MF 2021-2 HR 0-002 confirmed in 2021, that is implemented by Dilj d.o.o. (Ltd).

The second project investment, that has been confirmed in the second investment cycle of 2022 under ref. MF-2022-2-HR-0-004, will be implemented by IE – Energy d.o.o. (Ltd.) and has not yet started during 2022.

Therefore, the information given within this section of Annual report is referenced only to the investment implemented by Dilj d.o.o. (Ltd) under ref. MF 2021-2 HR 0-002.

### 3.1. Milestones achieved since the previous annual report;

Project implementation started in 2022 on two production facilities of Dilj d.o.o. (Ltd), on locations in Našice and Vinkovci. The project consists of energy efficiency measures and generation of electricity from renewable sources:

Generation of electricity from renewable sources – procurements for both production locations have been conducted, works have started in 2022 on location in Našice and in 2023 on location in Vinkovci. The equipment installation together with works for connection to power grid are planned to be completed in 2023.

Energy efficiency improvement– procurements for main energy efficiency measures (replacement & automation in production process) have been conducted in 2022, and the delivery of equipment will be done throughout the 2023, with some measures already installed. Assembly and commissioning will be done by the end of 2023 for Našice plant and at the start of 2024 for Vinkovci plant. Procurement of minor parts of measures is still to be finalized in 2023.

### 3.2. Expected entry into operation;

The investment MF 2021-2 HR 0-002 is on-going and the entry into operation is expected in 2024. A description of the milestones to be reached until entry into operation and their respective timeline is indicated in the table below:

PROJECT MILESTONES	LOCATION	MILESTONES			
		2023		2024	
<b>A1. Energy efficiency improvement</b>					
Tunnel kiln cars replacement	Našice	Equipment delivery			Start of production
Replacement of automation by implementation of robots	Našice				
Centralised vacuum production system	Vinkovci	Public procurement	Equipment delivery	Completion of works	Start of production
Replacement of compressor for more energy efficient one	Našice				
Lighting modernisation	Našice	Contract signing	Equipment delivery	Completion of works	Start of operation
	Vinkovci				
Replacement of clay purificator with wet pan mill	Našice	Equipment delivery	Start of production		
Central monitoring system for energy consumption	Našice	Contract signing	Equipment delivery	Completion of works	Start of operation
	Vinkovci				
<b>A2. Generation of electricity from renewable sources</b>					
Construction works	Našice	Completion of works			Start of operation
	Vinkovci				
Electrical works and equipment	Našice	Equipment delivery	Completion of works	Grid connection	Start of operation
	Vinkovci				
Obtaining of EOTRP + connection contract	Našice			Grid connection	Start of operation
	Vinkovci				

### 3.3. Identified or expected delays in implementation;

Due to the uncertainties following the Russian military invasion of Ukraine in 2022 together with the disruptions in global supply chains the project proponent is experiencing certain delays in supply of equipment and consequently implementation of the investment would be prolonged to 2024.

*3.4. Identified or expected changes in eligible costs, technology applied or results of an investment.*

The project promotor is reporting an increase in prices of construction works and equipment due to the energy-economic situation on the global and local level. However, there are no expected changes in eligible cost, technology applied or results of an investment MF 2021-2 HR 0-002 by the end of 2022.

**4. Additional information about non-priority investment**

In 2022 the MESD is overseeing implementation of only priority investments, and therefore there are no information to provide regarding non-priority investment.

*4.1. Confirmation of co-financing from private sources.*

It is not applicable for 2022.