



GREEN BOND

IMPLEMENTATION REPORT

FOR 2023



REPORT

In compliance with the Green Bond Framework, the City of Łódź presents the Green Bond Implementation Report for 2023.

The City of Łódź issued green bonds in the amount of PLN 50,000,000.

Legal basis:

Resolution of the City Council in Łódź No. XL/1239/21 of 17 March 2021 on the issue of municipal bonds of the City of Łódź

The implementing units presented reports on 2023 expenditures spent on tasks covered by the projects:

● **Municipal Service Division**

– for the Sustainable Water and Wastewater Management

● **Municipal Investment Board**

– for the Clean Transportation

The expenditures are evidenced with invoices and bank statements.



I PROCEEDS ALLOCATION REPORT

Sustainable Water and Wastewater Management Project

Task: Wastewater Management, Phase III

Estimated value of the task	PLN 163.241.914
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In 2023, expenditures coming from the own contribution and meeting the criteria of financing with green bonds amounted	PLN 25,664,100
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Expenditures related to green bonds planned for 2023 amounted	PLN 6,528,640
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During the period 2021-2023	PLN 35,771,073 was spent under green bonds
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The city fully allocated all expenditure under green bonds in the Sustainable Water and Wastewater Management Project (Wastewater Management, Phase III).

In 2023, green bond funds were spent on: modernisation of the sludge dewatering system, modernisation of the sand node, construction of a sludge thermal hydrolysis system, construction of an installation for nitrogen removal, construction of an installation for phosphorus recovery from leachate, improvement of the capacity of wastewater biological treatment lines No 6 and 7, investor supervision, technical assistance in project management.



REPORT

Clean Transportation Project

Task: Low-carbon municipal transport programme – redevelopment in Przybyszewskiego St. along the section between Reymonta Sq. and the real estate No 42, including the construction of an interchange node and redevelopment of the tramway track between the flyovers in Przybyszewskiego St. and Lodowa St.

Cost estimate value of the task is	PLN 150,226,734
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In 2023, expenditures coming from the own contribution and meeting the criteria of financing with green bonds amounted	PLN 25,343,416
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Expenditures related to green bonds planned for 2023 amounted	PLN 9,735,209
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During the period 2021-2022	PLN 14,228,927
	was spent under green bonds

The city fully allocated all expenditure under green bonds in the Pure Transportation Project (low-carbon municipal transport programme – redevelopment in Przybyszewskiego St. along the section between Reymonta Sq. and the real estate No 42, including the construction of an interchange node and redevelopment of the tramway track between the flyovers in Przybyszewskiego St. and Lodowa St.).

In 2023, green bond funds were spent on:

Completion of the construction of the north viaduct and traffic relocation, which enabled the construction of a tram viaduct and a southern road viaduct, where a connection road to Ni-ciarniana St. has been constructed; colliding electrical, water and sewage installations were relocated, and the water pipeline was reconstructed. The works are to be completed in 2024 (as at the end of 2023, 65% of the works were completed). In addition, the funds were spent on the reconstruction of Przybyszewskiego St. at the section from Reymonta Sq. to Grabowa St., where the whole colliding infrastructure was relocated, works related to tram rails, traction and road works were completed. The works are to be completed in 2024 (as at the end of 2023, 78% of the works were completed).



II IMPACT REPORT

Sustainable Water and Wastewater Management Project

Task: Wastewater Management, Phase III in Łódź

The task is ongoing.

Target environmental effect of the task:

- reduction of the contamination of groundwater, surface water and soil with sewage generated in the Group Sewage Treatment Plant of the Łódź Agglomeration by the use of improved wastewater treatment systems and improvement of their quality.

Wastewater management, phase III in Łódź comprises the implementation of 7 investment tasks aimed to reduce the contamination of groundwater, surface water and soil with sewage generated in the Group Sewage Treatment Plant of the Łódź Agglomeration. The tasks are aimed at using improved wastewater treatment

systems and improving their quality at the outlet of the Group Sewage Treatment Plant to the Ner River. The project implementation will contribute to the increase in the efficiency of technological wastewater treatment devices, the reduction of the amount of organic matter and sludge sent for incineration, the increase in the throughput as well as the optimisation of the sludge dewatering process. The long term effects of these measures will be noticeable in the improvement of groundwater and surface water quality for residents of Łódź and the surrounding communes.



REPORT

The task is mostly completed. Till the end of 2023 final trials for technical acceptance purposes were still in progress.

Target consequences of particular tasks are as follows:

Construction of retention reservoirs in the Group Sewage Treatment Plant of the Łódź Agglomeration (2 reservoirs) – the aim is to retain and take over most of the pollution load carried by (during wet weather the hydraulic load of the wastewater treatment plant increases and treating the entire load is no longer possible) and to limit water eutrophication by reducing the phosphorus and nitrogen load directed to the Ner river, which will result in a reduction of the environmental fee. The construction of retention reservoirs No I and II will allow to absorb 85% of wet weather wastewater. After rainfall the collected water will be pumped for biological treatment during periods of reduced inflow (morning hours, holidays): this task as been fully completed.

Modernisation of the sludge dewatering system: delivery of 3 centrifuges – the main objective of this task is to obtain sludge dewatered to at least 21% dry mass through replacement of the sludge dewatering equipment (belt presses) with other devices (decanter centrifuges) of greater parameters. Dewatered sludge is then directed to the incineration plant: this task was fully completed.

Increasing the capacity of lines 6 and 7 – an increase in the capacity of wastewater biological treatment lines No 6 and 7 results from the modernisation of the activated sludge wastewater treatment process. This will lead to an increase in the capacity of secondary settling tanks and minimise the risk of not meeting the requirements for the quality of treated wastewater, as set out in the water-law permit.





Modernisation of the sand node – the aim of this task is to enable the sand node to operate more flexibly by replacing the equipment with new one (failure rate reduction), which will contribute to an increased wastewater straining, which in turn will improve further biological processes. Owing to the replacement of equipment that has been operating in extremely harsh conditions for nearly 30 years, the plant's failure rate is expected to decrease: the task was fully completed.

Construction of a sludge thermal hydrolysis system, construction of an installation for nitrogen removal, construction of an installation for phosphorus recovery from leachate – the construction of 3 new technologies: sludge thermal hydrolysis system, an installation for nitrogen removal and an installation for phosphorus recovery from leachate, will result in the removal of a significant portion of organic elements in the thermal hydrolysis process will be removed, which will, first of all, reduce the amount of sludge generated (on average by 12% of sludge dry matter), increase sludge dewatering and reduce the heat of combustion to a level where all sludge generated can be combusted. In addition, the thermal hydrolysis process will increase biogas output by about 25% compared to the amount currently generated. A part of it will be used for own needs of the thermal hydrolysis system, however about 3,500 m³/d (15% of the current production) may serve to generate additional electricity in the amount of about 9 MWh per day, which will significantly increase the plant's energy efficiency and will allow it to reduce the amount of electricity purchased from the external grid. the task was fully completed (as at the end of 2023, the last final trials were in progress).

Supplementary information concerning the achievement of the immediate result indicator used to monitor project progress under the EU project grant agreement specifies a goal that is equivalent to one of goals resulting from green bond frameworks, i.e. increasing the quantity of dry matter to be treated.

Pursuant to Annex 12 to the grant agreement No POIS.02.03.00-00-0085/17-00 of 26.06.2018, the immediate result indicator that is essential in Wastewater Management, Phase III in Łódź, is the quantity of dry matter of municipal wastewater sludge to be treated, i.e. 25,80 thousand Mg/year (tonnes) per year. Target quantity to be achieved in: 2024. The indicator will be achieved in 2024.



Clean Transportation Project

Task: Low-carbon municipal transport programme – redevelopment in Przybyszewskiego St. along the section between Reymonta Sq. and the real estate No 42, including the construction of an interchange node and redevelopment of the tramway track between the flyovers in Przybyszewskiego St. and Łódzka St.

- The task is in progress.

Target environmental effects of the task:

- creating an efficient, safe and top quality public transport system that meets the EU environmental protection standards and is competitive to non-public transport;
- improving the city's internal transport accessibility by enhancing transport links;
- increasing the share of environment-friendly public transport in the city;
- ensuring a positive environmental impact;
- establishing a modern, attractive and mobile chain of transport networks;
- changing urban mobility patterns towards more sustainable mobility.

