Green Bonds Impact Report 2019

MuniFin Green bond

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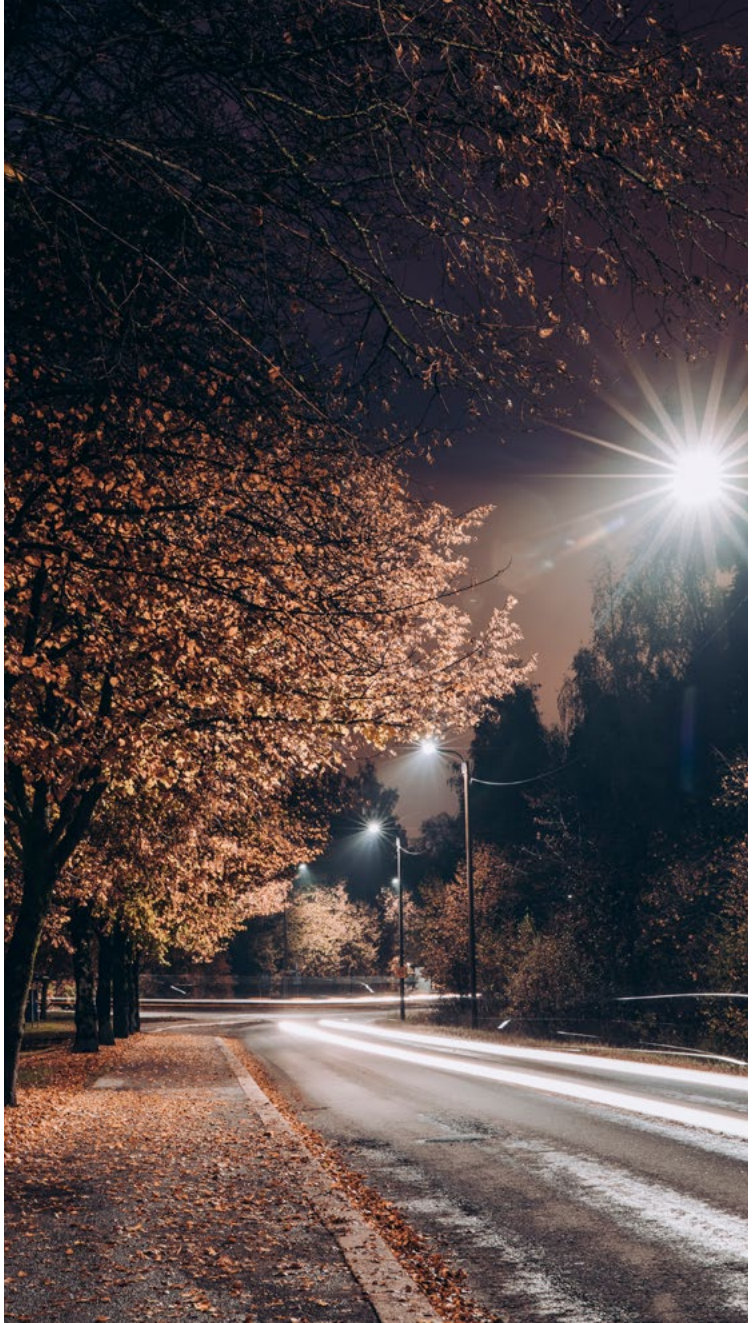

Contents

Updated 20.1.2021

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Environmental investments across Finland

The green finance granted by MuniFin finances environmental investments across Finland. The funding is sourced from international capital markets by issuing bonds that are allocated for the financing of environmental projects, i.e., green bonds.

MuniFin is the most active Finnish bond issuer in international capital market, and also the first-ever Finnish issuer of green bonds. The popularity of green bonds has grown rapidly in the market, as investors are looking for responsible investments. The green bonds issued by MuniFin have also been highly sought after among investors.

MuniFin's Green finance can be obtained for a project that belongs to one of the categories of the Green Bonds Framework and has verifiable positive impacts on the environment. The final assessment of the project's suitability for the green finance portfolio is made by an independent expert group.

Green finance, in addition to environmental benefits, allows for diverse social and economic impacts, both locally and regionally.

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The cultural shift to green must expand to new areas

Sustainable construction projects have become and increasingly important part of MuniFin's green portfolio. In fact, while the green project category has already in the past dominated our portfolio in terms of the number of projects, it is now the most significant in terms of value, too.

The change in attitude that has taken place in the construction sector is a good example of something that was once considered a marginal phenomenon quickly becoming more mainstream with enough incentives and the right kinds of sanctions. Up until just a few years ago, many believed that achieving an A-level energy classification in housing construction was almost impossible. In reality, this belief has been shown to be misplaced.

The choices made in construction work are important in the fight against climate change. It is not enough for a construction project to be realised in line with the best energy classification. The next steps must also be taken. For example, the lifecycle CO2 emissions of a building can be significantly reduced by adopting a circular economy approach. Thought must also be given to increasing the amount of recycled materials used in the development and to what happens to the construction materials once the building reaches the end of its lifecycle. Hopefully, next year will give us an opportunity to highlight pioneers in precisely this area of sustainable construction projects.

There are also many opportunities in other projects aimed at improving energy efficiency. Energy efficiency projects are often so cost-effective that the initial investment can be recovered within a very short period of time. Getting energy efficiency projects off the ground in the municipal sector can, however, be hindered by the red tape of procurement legislation. To counter this, flexible and innovative ways of securing energy saving services are necessary.

MuniFin has a long-held the belief that green finance accelerates Finnish environmental projects and furthers their ambition. An indication of this is the margin discount, the magnitude of which depends on the extent of a project's climate impact. Even on the international stage, this kind of approach is rare in the financial sector.

MuniFIn green finance has steadily grown over four years to approx. EUR 1.5 billion. While there is no doubt that this is a significant amount, it is still too little. More trailblazers are needed to show others the way and to make the benefits of environmental investments more visible. The existing culture must be shaken across all sectors and in every investment decision and transformed into a more environmentally sustainable model.

Rami Erkkilä
Manager, Lending
MuniFin

Rami Erkkilä is responsible for green finance product development at MuniFin.

MuniFin's green finance

Annual CO_2 emissions avoided, tCO_2
29,472

Annual energy saving, MWh
21,256

Renewable energy production capacity, MW
8

Annual production of renewable energy, MWh
18,762

Amount of green finance committed, EUR billion
1.474

Amount of green finance disbursed, EUR billion
1.263

Number of green projects
101

Annual amount of treated wastewater, m^3
5,496,850

- **Sustainable buildings: 75**
- **Energy efficiency: 10**
- **Water and wastewater management: 7**
- **Renewable energy: 5**
- **Sustainable public transportation: 4**

**Figures based on the green portfolio's status on 31 December 2019*

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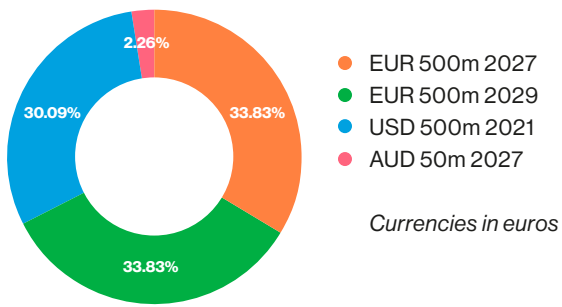
Green finance in 2019

In January 2019, MuniFin awarded the Green Pioneer prize to one of its customers who has received green finance. With the prize, MuniFin wants to highlight players who set ambitious goals and have integrated environmental thinking into all their activities. The prize was presented to the City of Joensuu, which aims to be carbon-neutral by 2025 and has several projects financed by green finance.

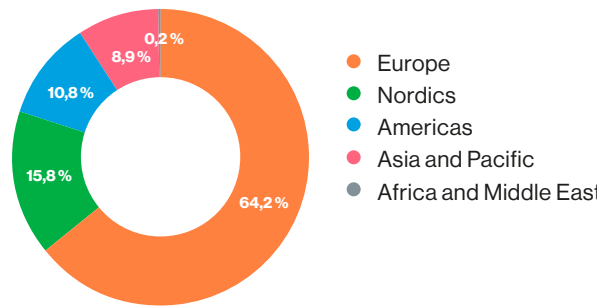
During 2019, the number of projects financed with MuniFin's green finance exceeded 100. In July, MuniFin issued the fourth green bond in its history. The bond amounted to EUR 500 million and had a period of maturity of 10 years. The bond issuance was highly sought after: the bond was over four times oversubscribed in two hours.

In 2019, MuniFin also prepared a new social finance product. It was launched in the beginning of 2020 to diversify the company's range of sustainable products and further strengthen its societal impact. The goal is to issue the company's first social bond in 2020.

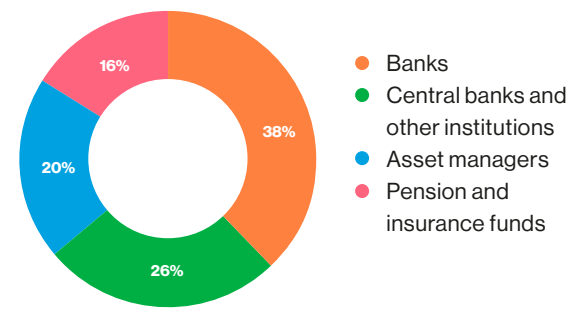
Green bonds, total and breakdown



Geographic breakdown of green bonds investors



Breakdown by green bonds investor type



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Green finance, sustainable development goals and climate objectives

Investments by municipalities and the housing sector play a key role in implementing and promoting solutions that promote the UN Sustainable Development Goals (SDGs). One of the key goals is climate actions. The Finnish state has set an ambitious climate objective for the achievement of carbon neutrality by 2035, and some Finnish municipalities have announced that they aim for carbon neutrality before the 2035 objective.

In addition to the European countries' own climate objectives, the EU aims to achieve carbon neutrality by 2050. To promote this objective, an Action Plan on Sustainable Finance has been prepared by the EU Commission to create a finance system to combat climate change and to support sustainable development.

With green finance, MuniFin finances environmentally sustainable solutions through a total of seven different project categories. The SDGs and the EU environmental objectives related to the project categories are based on the recommendations of the Position Paper on Green Bonds Impact Reporting and are introduced from page 9.

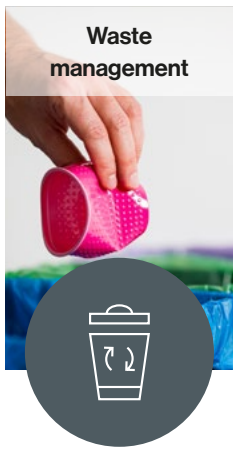
Green finance project categories

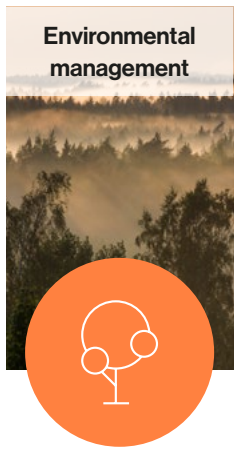
MuniFin has offered green finance since 2016. Green finance finances projects of Finnish municipalities, cities and non-profit housing organisations that meet the predefined environmental criteria. MuniFin has established the Green Bonds Framework with seven project categories. The framework has been evaluated by CICERO in co-operation with Stockholm Environment Institute (SEI). By using CICERO's shades of green, the framework has been evaluated as Medium Green.

MuniFin's green finance has many positive impacts on the environment, as well as benefits to the economy and society. This report primarily focuses on the estimated direct environmental impact, but other broader benefits are also discussed.

Projects financed by MuniFin are characterised by the cooperation of municipalities with other actors, which is why green finance can be seen as promoting new kinds of partnerships and practices and the emergence of new, more sustainable business. Approved green finance projects are given a margin discount, which is internationally exceptional in the green financing market. In the best case, the discount enables MuniFin's customers to allocate the benefit to other projects promoting a climate-resilient society and sustainable practices. All projects financed by MuniFin's green finance promote the transition towards a low-carbon society.

CICERO has evaluated MuniFin's Green Bonds Framework as Medium Green.





Sustainable buildings

Sustainable building projects target construction projects that help to reduce energy consumption and are based on environmentally sustainable solutions, for example, in terms of material choices. The projects include both new residential buildings and public buildings, such as schools, daycare centres and libraries. The financed buildings must, in principle, meet the requirements of energy class A (2018). Buildings belonging to energy class B (2018) may also be accepted on an individual basis, provided they represent the best in their class and several environmentally sustainable solutions have been included in the projects, for example: use of renewable energy in heating and cooling, life-cycle assessment of the project's environmental impact, recyclable and low-carbon material choices, efficient and smart technology choices, or Nordic Swan Ecolabel, LEED, BREEAM or similar certifications with high ratings.

The projects support the following EU environmental objectives:
Climate change mitigation
Climate change adaptation

Sustainable public transportation

Sustainable public transportation projects include low-emission public transport projects. Project examples of sustainable public transportation include the construction of the West Metro Extension in Helsinki and Espoo, the construction of the Tampere tramway and the electrification of Turku bus lines. Public transportation projects reduce the need for private motoring and traffic emissions. In addition, modern public transportation solutions often allow for widespread indirect impacts, for example in the form of a more compact and safer urban environment, while constructing a comfortable city for residents.

The projects support the following EU environmental objectives:
Climate change mitigation
Pollution prevention and control

Water and wastewater management

Green finance promotes projects that ensure the availability of clean and safe drinking water and a cleaner wastewater quality. As urban populations grow, the construction of new water purification and wastewater treatment capacity plays an important role in creating a sustainable society. In addition, old facilities can be upgraded and improved by introducing modernised environmentally friendly technologies. Climate change poses increasing challenges for water management in society, and investments can be used to prepare for the challenges of the future.

The projects support the following EU environmental objectives:
Sustainable use and protection of water and marine resources
Climate change mitigation
Pollution prevention and control
Climate change adaptation

Renewable energy

Green finance can be used for environmentally friendly investments in wind and solar energy, small-scale hydro power, geothermal energy, and bioenergy and biogas from waste. Renewable energy projects replace the use of fossil fuels and support climate change mitigation and the transition towards a carbon-neutral society.

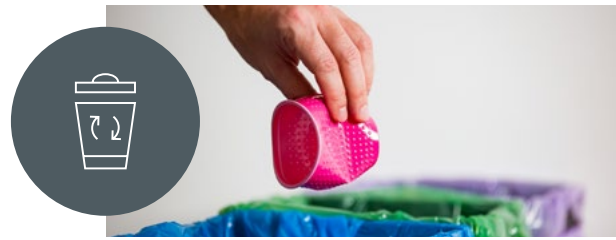
Renewable energy generates zero emissions at the production stage, and the decline in the exploitation of fossil fuels affects both emissions and the reduction of air pollution. Energy can be produced closer to its place of use, thereby reducing the number of deliveries as well as distribution and transmission losses. This has both environmental and economic implications for society.

The projects support the following EU environmental objectives:
Climate change mitigation

Energy efficiency

Energy efficiency projects reduce the energy consumption of buildings and help reduce the CO_2 emissions of buildings. Energy efficiency also brings economic savings that can be exploited to fund other sustainable investments in municipalities. The projects may include, for example, a more efficient use of district heating or cooling, energy recovery and the exploitation of smart grids. Green finance has been used to finance several ESCO projects in different locations.

The projects support the following EU environmental objective:
Climate change mitigation



Waste management

Waste management projects can represent investments that support and promote the circular economy. There aren't yet any waste management projects in the MuniFin green portfolio, but it is predictable in the context of increasing services and the potential of the circular economy that these projects will also be financed in the future.

The projects support the following EU environmental objectives:
Transition to a circular economy, waste prevention and recycling
Pollution prevention and control
Climate change mitigation

Environmental management

Environmental management projects may include projects aimed at nature conservation, the protection or rehabilitation of ecosystems and the rehabilitation of natural areas, for example after industrial use. There aren't yet any environmental management projects in the MuniFin green portfolio, but it is predictable that these projects will be financed in the future, as the state of biodiversity and its protection have also become a part of public discussion in Finland.

The projects support the following EU environmental objectives:
Protection of healthy ecosystems
Climate change mitigation
Climate change adaptation

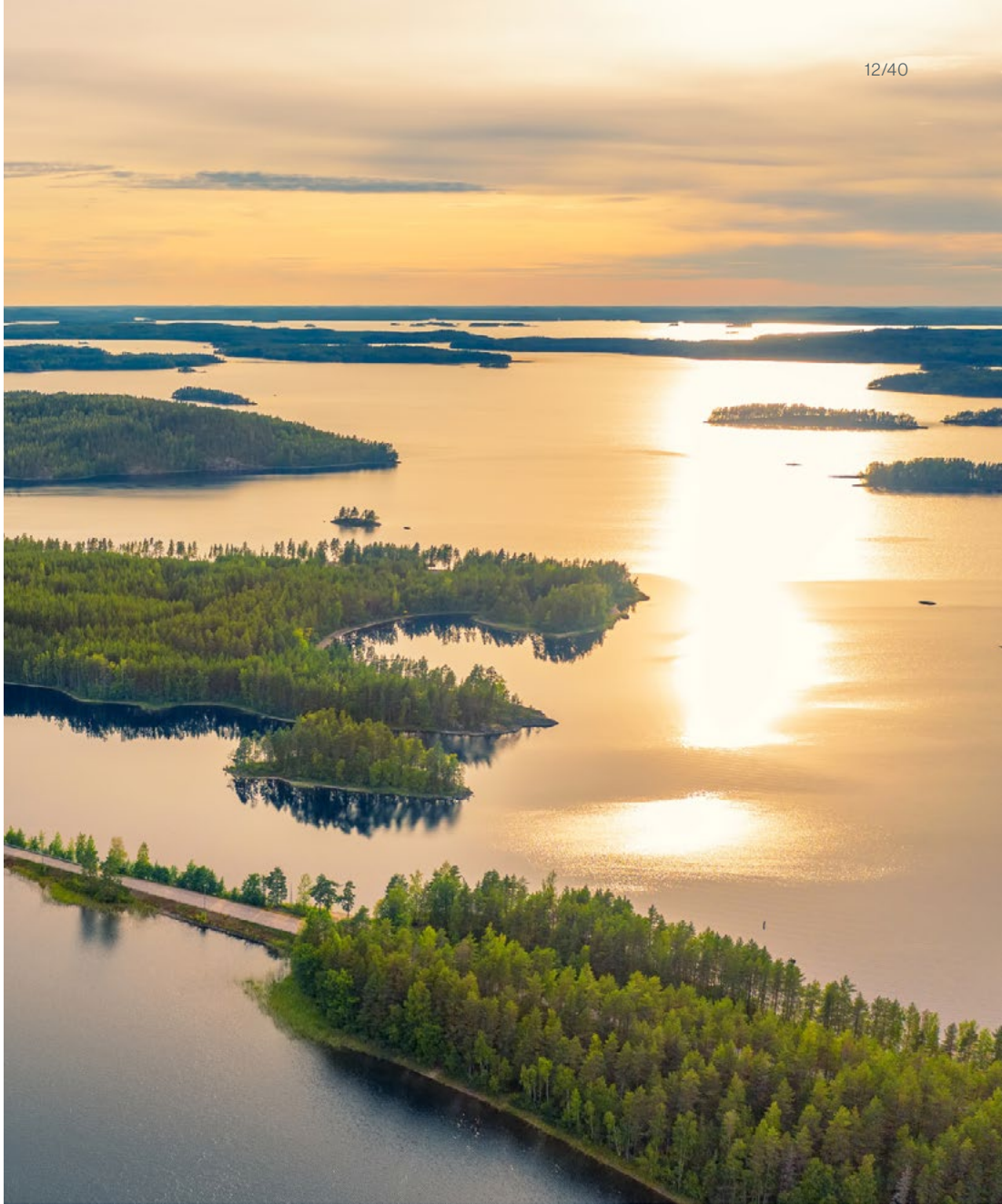
Green finance approval process and Green Evaluation Team

Projects eligible for green finance must fit into the Green Bonds Framework. The eligibility of projects is decided by an evaluation team of independent experts. Every project is assessed independently and only approved if long-term positive environmental impact can be achieved.

In 2019, there were three members in the Green Evaluation Team:

- **Mrs. Saara Vauramo** (Chair), Environmental Director, City of Lahti
- **Mr. Jyri Seppälä**, Professor, Director of the Centre for Consumption and Production, Finnish Environmental Institute
- **Mr. Vesa Peltola**, Energy Expert, Association of Finnish Local and Regional Authorities

To attract customers to make more environmentally friendly investments, MuniFin awards a margin discount for eligible projects. The discount is based on the project's estimated environmental impact. Each project will be evaluated and graded by the Green Evaluation Team between 0 and 10 points. Dark green projects are usually graded between 7 and 10 points, medium green between 4 and 6 points and light green from 1–3 points. The final margin discount for the customer will be based on these points.



Green finance portfolio 2016–2019

In 2019, 32 new projects were approved to the green portfolio, which increased the number of approved projects to 101. The amount of loans committed to projects increased to EUR 1.474 billion. At the end of 2019, the amount of green finance disbursed to projects totalled EUR 1.263 billion. The green portfolio comprises 100% of the so-called initial investments, and there are no refinanced projects in it. A precise listing of projects financed by MuniFin and the green portfolio can be found from page 35 onwards.

Consultancy company Deloitte carried out the analysis of the environmental impact of green finance from 2016–2019 based on data on projects financed and the calculation assumptions agreed upon with MuniFin. The calculation assumptions used are based on the recommendations of Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (2020).

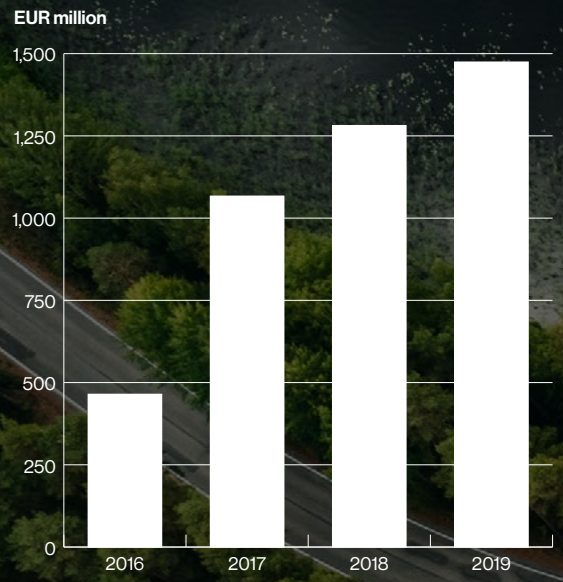
The total estimated direct annual CO_2 emission avoidance impact of MuniFin-financed projects aiming to mitigate climate change (sustainable buildings, energy efficiency, renewable energy and sustainable public transportation) was approximately 29,472 tonnes of CO_2. On an annual basis, the projects generate approximately 21,256 MWh worth of energy savings. Additionally, it is estimated that projects financed by MuniFin enable the annual production of approximately 18,762 MWh of renewable energy. The reporting principles are presented from page 28 onwards.

Between 2016 and 2019, MuniFin has financed in total 75 sustainable building projects, which makes sustainable buildings the largest project category for green finance. The estimated annual CO_2 emission avoidance in these projects amounts to approximately 3,474 tonnes. In addition, MuniFin has financed many projects related to energy efficiency, renewable energy, sustainable public transportation and water and wastewater management in different locations around Finland.

Some of the projects approved in 2019 have not withdrawn the financing by 31 December 2019, so the impact of these projects is not included in the calculations. Projects approved in previous years, which began to withdraw financing during 2019, have been included in the overall portfolio figures, but are not presented as part of the 2019 figures.

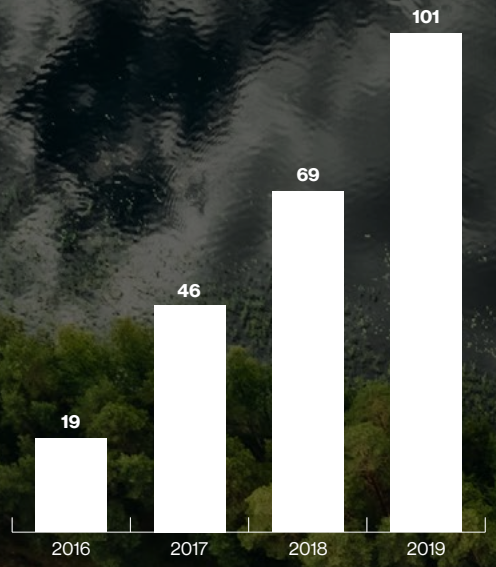
Green finance portfolio 2016–2019

Green portfolio development

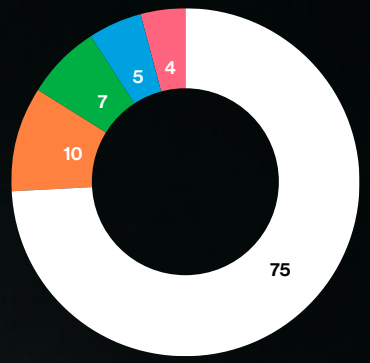


Cumulative development based on committed amounts and year of approval 2016-2019

Green finance cumulative project number



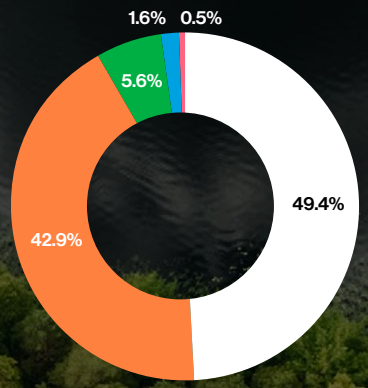
Green finance project breakdown



- Sustainable buildings
- Energy efficiency
- Water and wastewater management
- Renewable energy
- Sustainable public transportation

Based on number of projects 2016-2019

Green finance breakdown



- Sustainable public transportation EUR 623,748,482
- Sustainable buildings EUR 542,072,575
- Water and wastewater management EUR 70,725,000
- Renewable energy EUR 20,528,572
- Energy efficiency EUR 6,155,233

Based on the green portfolio's disbursed amounts, 31 December 2019

Disbursed amount of energy efficiency projects updated 20.1.2021

Sustainable buildings

Number of projects: 75
Committed amount: 716 MEUR
Disbursed amount: 542 MEUR
Annual energy savings, MWh: 14,408
Annual CO_2 emissions avoided, tCO_2: 3,474

Sustainable public transportation

Number of projects: 4
Committed amount: 649 MEUR
Disbursed amount: 624 MEUR
Annual CO_2 emissions avoided, tCO_2: 4,981

Water and wastewater management

Number of projects: 7
Committed amount: 75 MEUR
Disbursed amount: 71 MEUR
Annual amount of treated wastewater, m^3: 5,496,850
Annual production of renewable energy, MWh: 698

Renewable energy

Number of projects: 5
Committed amount: 25 MEUR
Disbursed amount: 21 MEUR
Annual CO_2 emissions avoided, tCO_2: 19,346
Annual production of renewable energy, MWh: 18,064
Renewable energy production capacity, MW: 8.1

Energy efficiency

Number of projects: 10
Committed amount: 9 MEUR
Disbursed amount: 6 MEUR
Annual energy savings, MWh: 6,848
Annual CO_2 emissions avoided, tCO_2: 1,671

MuniFin was established for the purpose of focusing on developing the Finnish welfare society. The company supports Finnish municipalities and non-profit housing organisations in the creation of a sustainable society, both in terms of environmental, economic and social wellbeing. In total, MuniFin has financed 101 green finance projects across Finland.

Disbursed and outstanding amount, 31 December 2019. The impact is based on MuniFin's contribution to the project's total investment cost.

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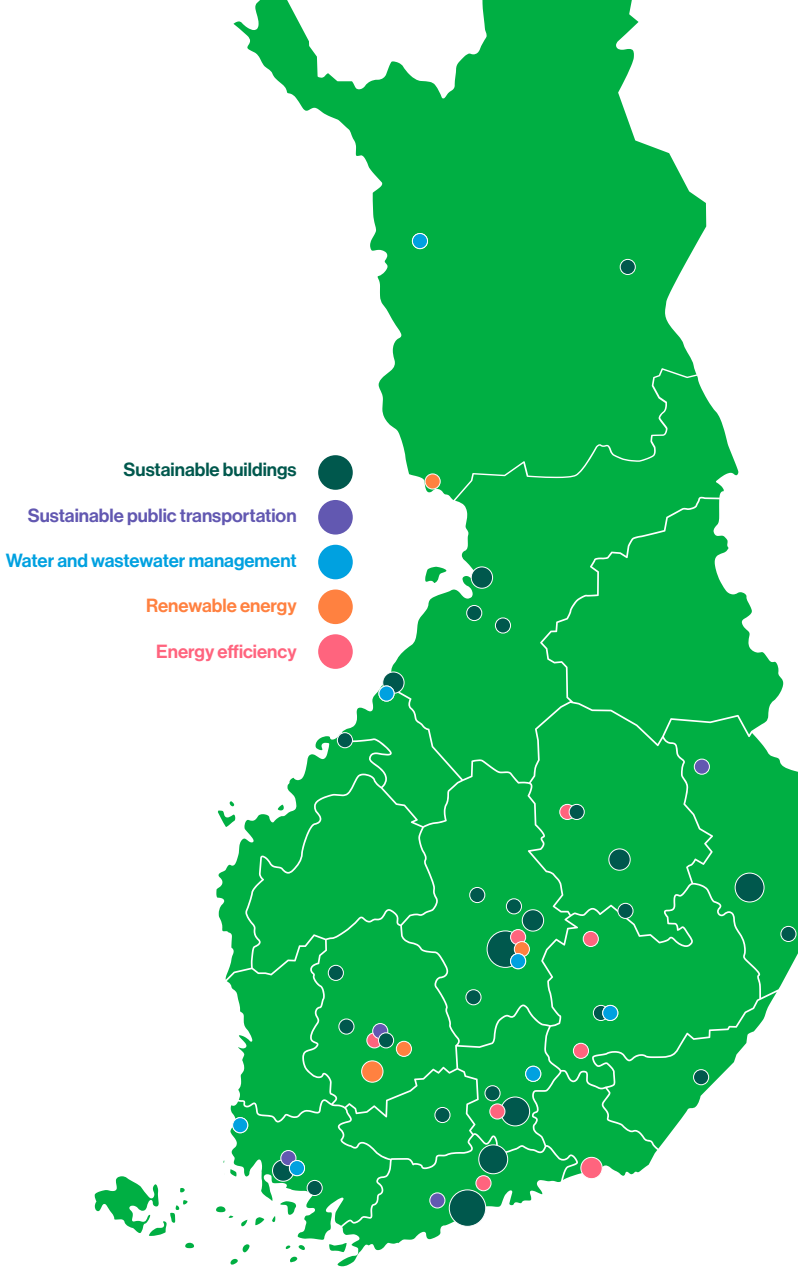
Committed and disbursed amount of water and wastewater management projects updated 20.1.2021



Green finance in 2019

The new financing committed by MuniFin in 2019 amounted to EUR 193 million, and the projects were divided into 15 different locations across Finland. The list of projects approved and financed in 2019 and their locations around Finland are presented on the following pages.

In 2019, a total of 32 new projects were approved for the green portfolio. The largest project category, both in terms of euros and the number of projects, was sustainable buildings. In 2019, the vast majority of projects in the sustainable buildings category were residential buildings. In addition, green finance was committed to two energy efficiency projects and one renewable energy project.

The total estimated direct annual CO_2 emission avoidance impact of green projects approved in 2019 and weighed using MuniFin's contribution is 141 tCO_2. The corresponding estimated total annual energy savings of the projects amount to 700 MWh. In the case of projects approved in 2019, withdrawal financing began for 17 projects during the year, and these projects are included in the calculated environmental benefits.

Number of projects by category 2019:

Sustainable buildings
29

Energy efficiency
2

Renewable energy
1

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Green finance project category	Customer	Project description	Project location	Committed amount	Disbursed amount 31 December 2019	MuniFin's share of financing of total investment
Sustainable buildings	As Oy Turun Löytöretkeilijä, Mangrove Vuokra Oy	Construction of apartment buildings, Lipunkantajankatu 3	Turku	5,510,000 €	1,653,000 €	100 %
Sustainable buildings	City of Kalajoki	School of Merenoja	Kalajoki	25,000,000 €	17,557,668 €	100 %
Sustainable buildings	City of Mikkeli	Daycare center of Kalevankangas	Mikkeli	4,200,000 €	4,200,000 €	100 %
Energy efficiency	City of Pieksämäki	Uhonmäki street lighting	Pieksämäki	200,000 €	181,467 €	100 %
Sustainable buildings	City of Saarijärvi	School and culture center	Saarijärvi	13,600,000 €	4,293,111 €	100 %
Sustainable buildings	Helsingin Asumisoikeus Oy	Construction of apartment building, Jamaika	Helsinki	15,204,970 €	3,800,000 €	100 %
Sustainable buildings	Helsingin Asumisoikeus Oy	Construction of apartment building, Postimies	Helsinki			100 %
Sustainable buildings	Helsingin Asumisoikeus Oy	Construction of apartment building, Postiljooni	Helsinki			100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Haakoninlahdenkatu 5-7	Helsinki	25,457,150 €	5,089,150 €	100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Isonnevankuja 1	Helsinki			100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kaupinmäenpolku 15	Helsinki			100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kanariankatu 3	Helsinki	16,344,750 €	3,268,750 €	100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kyösti Kallion tie 1a	Helsinki	9,271,050 €	1,854,250 €	100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kustinpolku 7	Helsinki			100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Pyhätunturintie 2	Helsinki	22,797,150 €	2,280,000 €	100 %
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Tullivuorentie 22	Helsinki	12,863,800 €	2,573,000 €	100 %
Sustainable buildings	Jyväskylän Yliopiston Ylioppilaskunta	Renevation project, Taitoniekantie 9 c	Jyväskylä	7,715,100 €	2,000,000 €	100 %
Renewable energy	Kemin Energia ja Vesi Oy	Cental bioheating plant	Kemi			100 %
Sustainable buildings	Keski-Suomen opiskelija-asuntosäätiö (KOAS)	Multi-generation block, Kankaan Ilona, Ailakinkatu 10	Jyväskylä			100 %
Sustainable buildings	Kiinteistö Oy Oulun Tarve	Construction of apartment building, Pohjantikankuja 4	Oulu	7,306,500 €	4,380,000 €	100 %
Sustainable buildings	Kuopion Opiskelija-asunnot Oy	Construction of apartment building for students, Ahkio	Kuopio			100 %
Sustainable buildings	Kuopion Opiskelija-asunnot Oy	Construction of apartment building for students, Taivaanpankko	Kuopio			100 %
Sustainable buildings	Lahden Asunnot Oy	Construction of apartment building, Vasarantie 2 ja 4	Lahti			100 %
Sustainable buildings	Lahden Asunnot Oy	Construction of apartment building, Laatikkotehtaankatu 5 c	Lahti			100 %
Sustainable buildings	Mäntsälä Municipality	School of Ehnroos	Mäntsälä			100 %
Energy efficiency	Mäntyharju Municipality	Street lighting	Mäntyharju			100 %
Sustainable buildings	Pirkan Opiskelija-asunnot Oy	Building for elderly and renovation of the central commercial kitchen	Tampere			100 %
Sustainable buildings	Savukoski Municipality	Educational center	Savukoski	3,900,000 €	172,118 €	100 %
Sustainable buildings	TA-Asumisoikeus Oy	Construction of apartment building, Pellonreuna 7	Jyväskylä	8,299,550 €	1,400,000 €	100 %
Sustainable buildings	Varttuneiden asumisoikeusyhdistys Jaso	Multi-generation block, Kankaan Ilona, Ailakinkatu 10	Jyväskylä	10,097,300 €	3,500,000 €	100 %
Sustainable buildings	Vesanto Municipality	Schoolcampus	Vesanto			100 %
Sustainable buildings	Ääneseudun Asunnot Oy	Renevation project, Lönnrotinkatu 1	Jyväskylä	5,279,300 €	4,000,000 €	100 %

MuniFin's contribution is presented based on information received from the customer and public sources. The figure does not take account of any project self-financing or grants.
All projects have not withdrawn the financing by 31 December 2019. Thus committed amount and disbursed amount columns are left blank.

Green finance used for environmentally friendly renovation in Jyväskylä

Located in the Kortepohja area of the city of Jyväskylä, the student accommodations managed by the Student Union of the University of Jyväskylä are set to be the site of the first renovations in the history of MuniFin to be completed with green finance. The renovation project will include up to 720 apartments, of which only the original building frames will remain after the work is completed.

As students are increasingly aware of environmental issues, the Student Union is being encouraged to make more sustainable investments. Thanks to the investments in energy savings, the rent prices for the housing can be kept at a reasonable level, making it easier to maintain pleasant living conditions for the occupants. The design of the Kortepohja development has been driven by the principles of sustainable lifestyles, sharing economy, and communality.

Finland is currently experiencing significant housing repair deficits, so the potential for new renovation works using green funding is high. Environmentally-friendly renovation projects are a big win for municipalities and social housing operators, as the savings in energy use they generate are rapidly reflected in cost savings over the course of a building's lifespan.

Such projects can also benefit from more favourable green finance if the site's energy consumption is reduced by at least 30%. With awareness of environmental issues ever increasing, such development projects are able to respond to occupants' hopes for more sustainable housing.

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The Student Union of the University of Jyväskylä
Photo: Jari Kuskelin

The impacts of green finance

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Sustainable buildings

MuniFin's green finance enables the construction of new environmentally sustainable residential buildings and public buildings, such as schools and daycare centres, in different parts of Finland. It also allows for the implementation of projects to improve the energy efficiency of existing buildings.

The buildings have a significant impact on national emissions and the carbon footprint per resident, mainly through the use of energy. Sustainable building takes account of environmental impacts as early as the design stage, e.g., by leveraging new energy solutions, environmentally friendly materials and spatial planning. Methods to reduce the environmental impact of buildings utilised by the projects financed by MuniFin's Green finance include local renewable energy production, life cycle thinking and the use of smart control systems.

Sustainable building projects can act as important pilot sites for promoting sustainable construction (such as wood construction, outdoor and green spaces, smart systems, healthy premises). In 2019, MuniFin financed the new ice rink in Äänekoski, which aims at the almost-zero-energy level, and the construction in Kalajoki of the first school in Finland with the Nordic Swan Ecolabel.

EU environmental objectives:
Climate change mitigation
Climate change adaptation

ENTIRE PORTFOLIO

Number of projects: 75
Committed amount: 716 MEUR
Disbursed amount: 542 MEUR
Annual energy savings, MWh: 14,408
Annual CO_2 emissions avoided, tCO_2: 3,474

PROJECTS APPROVED IN 2019

Number of projects: 29
Annual energy savings, MWh: 654
Annual CO_2 emissions avoided, tCO_2: 127

Sustainable public transportation

The MuniFin project portfolio includes major national public transportation projects – the West Metro Extension in the Helsinki metropolitan area and the Tampere Tramway. In addition, MuniFin has financed the electric car projects in the cities of Turku and Nurmes.

Public transportation affects traffic emissions by reducing the need for private cars, especially in cities. Based on the surveys conducted on the projects, the estimated total combined number of users of the Western Metro Extension and the Tampere Tramway is 225,000 people. Sustainable public transportation projects enable issues such as more environmentally friendly urban development, the diversification of the city structure, densified housing production, and expanding the city beyond its traditional central area. Furthermore, new sustainable modes of transport have a wide range of impacts on the everyday lives and wellbeing of people.

EU environmental objectives:
Climate change mitigation
Pollution prevention and control

ENTIRE PORTFOLIO

Number of projects: 4
Committed amount: 649 MEUR
Disbursed amount: 624 MEUR
Annual CO_2 emissions avoided, tCO_2: 4,981

PROJECTS APPROVED IN 2019

Number of projects: 0
Annual CO_2 emissions avoided, tCO_2: 0

Water and wastewater management

Water and wastewater management promotes human health and clean nature and contributes to the circular economy. Water purification is used to maintain high water quality, prevent eutrophication of waterways and enable the reuse of nutrients, such as phosphorus and nitrogen. In addition, slurry separated from wastewater and dried can be composted and utilised in biogas production. Projects in this category play an important role in securing wastewater treatment for the regions, responding to stricter purification requirements, and improving the regional capacity to adapt to climate change.

Since 2016, MuniFin has financed seven projects in the water and wastewater management category. Water and wastewater management projects financed by MuniFin support the water treatment capacity extensions of old water purification plants and the introduction of more efficient purification technologies and methods. The reforms ensure that the quality of domestic water remains high. In some projects, the wastewater treatment capacity of plants is expanded so that they will be able to deal with the growing amount of local population in the future.

EU environmental objectives:

Sustainable use and protection of water and marine resources
Climate change mitigation
Pollution prevention and control
Climate change adaptation

ENTIRE PORTFOLIO

Number of projects: 7
Committed amount: 75 MEUR
Disbursed amount: 71 MEUR
Annual amount of treated waste water, m³: 5,496,850
Annual production of renewable energy, MWh: 698

PROJECTS APPROVED IN 2019

Number of projects: 0
Annual amount of treated waste water, m³: 0
Annual production of renewable energy, MWh: 0

Committed and disbursed amount updated 20.1.2021

Renewable energy

Renewable energy projects financed by MuniFin include the Kangasalan Lämpö Oy bio-fuelled heating plant, which produces thermal energy from forest industry side streams, the Lempäälän Energia Oy heating plant and the Energy Self-sufficient Lempäälä project. MuniFin committed a loan to one new renewable energy project in 2019.

Renewable energy production plays a key role in combatting global climate change. By financing renewable energy projects, MuniFin promotes Finland's long-term goal of becoming a carbon-neutral society by 2035. Renewable energy generates zero emissions at the production stage, and the decline in the exploitation of fossil fuels affects both emissions and the reduction of air pollution. Energy can be produced closer to its place of use, thereby reducing the number of deliveries as well as distribution and transmission losses. This has both environmental and economic implications for society.

EU environmental objective:
Climate change mitigation

ENTIRE PORTFOLIO

Number of projects: 5
Committed amount: 25 MEUR
Disbursed amount: 21 MEUR
Annual CO_2 emissions avoided, tCO_2: 19,346
Annual production of renewable energy, MWh: 18,064
Renewable energy production capacity, MW: 8.1

PROJECTS APPROVED IN 2019

Number of projects: 1
Annual CO_2 emissions avoided, tCO_2: 0
Annual production of renewable energy, MWh: 0

Energy efficiency

In 2019, MuniFin approved two new energy-efficiency projects for its portfolio, which brought the entire portfolio's number of projects to 10. The amount of energy required for the use of existing buildings and other infrastructure can be reduced by various energy-efficiency improvement measures, such as upgrading of equipment and the installation of renewable-energy technologies. Improving the energy efficiency of buildings is a cost-effective way of reducing CO_2 emissions: small actions can help achieve significant energy savings in the short term. Energy-efficiency projects offer municipalities an effective way of making cost savings, enabling them to use the saved money for other purposes and to boost their economy.

Another goal for the projects is to improve the indoor air quality of buildings. Indoor air quality plays a key role from the perspective of users of the buildings (such as schools, sports facilities, libraries and daycare centres). Solutions that work can be used to indirectly improve the well-being of many people.

EU environmental objective:
Climate change mitigation

ENTIRE PORTFOLIO

Number of projects: 10
Committed amount: 9 MEUR
Disbursed amount: 6 MEUR
Annual energy savings, MWh: 6,848
Annual CO_2 emissions avoided, tCO_2: 1,671

PROJECTS APPROVED IN 2019

Number of projects: 2
Annual energy savings, MWh: 46
Annual CO_2 emissions avoided, tCO_2: 14

Energy efficient housing with green finance

Three new buildings for Heka, the housing company owned by the City of Helsinki, were granted green finance. The energy efficiency class of one of the buildings will be A and the others B.

The energy efficiency of the buildings has been improved by various means, including efficient heat recovery, the use of indoor and outdoor LED lighting, and solar panels. The buildings have also been fitted with a centralised and remotely controlled building automation system, which, among other things, is capable of regulating heating. The buildings' energy-efficiency ratings represent the best in the industry. For example, the annual efficiency of their heat recovery ventilation is extremely high, at between 70% and 79%.

Energy efficiency is the driving force behind all of Heka's construction projects. The company's goal has long been that its buildings have an energy class better than is legally required and have an E-rating below 80. This is one example of how the company is playing its part in helping the City of Helsinki achieve its goal of becoming carbon neutral by the year 2035.

Heka manages nearly 50,000 properties, which are home to more than 92,000 Helsinki residents. The company procures its new building and renovation projects from the City of Helsinki's Housing Production Department, which manages the projects in full from design to implementation.


Helsingin kaupungin asunnot Oy (Heka)

MuniFin

Other impacts of projects

Besides the quantitative environmental benefits discussed in this report, the projects for which MuniFin has committed Green finance also have other wide-ranging impacts. In addition to environmental benefits, the projects' key characteristics include various social and economic impacts both locally and regionally.

Through its financing, MuniFin supports regional vitality and attractiveness by promoting municipal activities through projects that are environmentally sustainable and have societal impact. In addition, MuniFin enables projects aimed at improving individual wellbeing and promoting the introduction of new, more environmentally friendly technologies and materials. The MuniFin green portfolio includes several timber schools, which reduce indoor air problems.

Other impacts of projects

All categories

- Climate change mitigation and adaptation
- Regional vitality and attractiveness
- Support for finding employment
- Innovativeness, new environmental technologies and piloting
- Wide-ranging cooperation with stakeholders

Sustainable buildings

- Support for early education and teaching
- Fostering a welcoming, green and communal city
- Flexible and varied use of premises and taking account of various population groups
- Security and healthy premises and renewal of old premises in poor condition
- Pilots for sustainable buildings

Sustainable public transportation

- Making the city more welcoming
- Accessibility of services and fluency of everyday life
- Densifying the city structure
- Reduction of noise pollution

Water and wastewater management

- Recovery of bioenergy for energy production use
- Improving water quality
- Adaptation to a changing climate

Renewable energy

- Piloting new environmental technologies and making their deployment possible
- Impact of better air quality on human health
- Regional competitiveness
- Finnish energy self-sufficiency and minimisation of energy distribution and transfer losses

Energy efficiency

- Piloting and reference value of new technologies
- Financial savings for local governments and enabling of new investments
- Better indoor air quality in public buildings

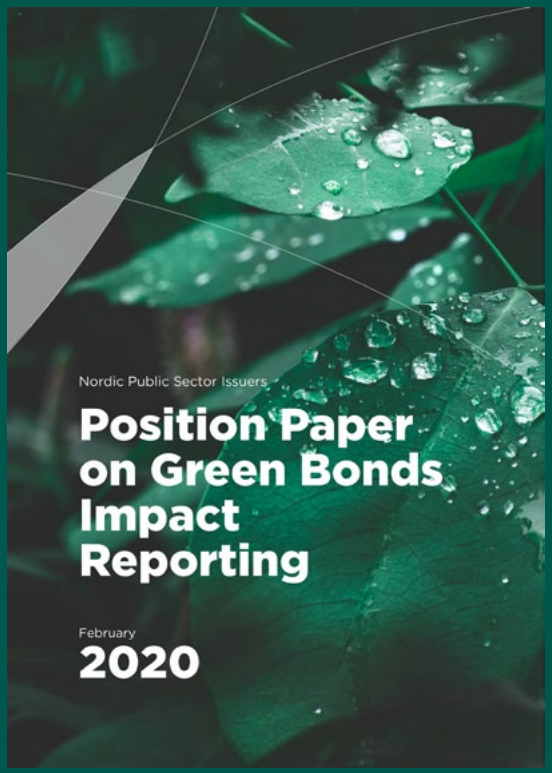
Reporting principles

Green Bonds Impact Reporting – Nordic cooperation

MuniFin is one of 10 Nordic issuers who jointly published recommendations for green bonds impact reporting. The first Position Paper on Green Bonds Impact Reporting was published in October 2017. It was updated again in February 2020.

The recommendations were drawn up by Nordic green bond issuers specialising in the public sector. MuniFin was the only Finnish issuer in the group. Other participants included two of MuniFin's counterparts – Kommunalbanken in Norway and Kommuninvest in Sweden – as well as several Swedish public sector entities which have issued bonds. The aim of the guide on green bonds impact reporting to Nordic issuers is to facilitate the work of applicants for Green finance, lower new issuers' thresholds for entering the green bond markets, and providing international investors with a tool for evaluating green portfolios.

The Nordic guidelines are based on the Green Bond Principles and the recommendations of multilateral development banks. However, these have been complemented with an interpretation of impact indicators for projects focusing on issues such as public transportation and sustainable buildings. The other participants in the preparation of the guidelines were the Norwegian research institute CICERO, the Nordic Investment Bank, SEB, Crédit Agricole CIB, and a group of international investors.



MuniFin's approach to impact evaluation

The green bond impact reporting of MuniFin is based on the recommendations provided in the Position Paper on Green Bond Impact Reporting, which was jointly drawn up by a group of Nordic public sector issuers.*

MuniFin's impact reporting is carried out in accordance with the following principles:

- The impact of projects financed by MuniFin has been calculated in relation to MuniFin's contribution, which has been determined as the share of the total amount disbursed at the end of the period under review in relation to the total investment cost of the project.
- The reporting is based on preliminary evaluations conducted prior to project implementation.
- The impact evaluation covers both quantitative and qualitative aspects.
- The reporting is developed continuously. MuniFin welcomes development proposals for its reporting.

**Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (2017)*
Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (2019)
Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (2020)

Impact indicators by project category

Sustainable buildings
Annual energy savings (MWh)
Annual CO_2 emissions avoided (tCO_2)

Sustainable public transportation
Annual CO_2 emissions avoided (tCO_2)

Water and wastewater management
Annual amount of treated wastewater (m^3)

Renewable energy
Annual CO_2 emissions avoided (tCO_2)
Annual production of renewable energy (MWh)
Production capacity of renewable energy (MW)

Energy efficiency
Annual energy savings (MWh)
Annual CO_2 emissions avoided (tCO_2)

The key impact indicators included in the calculation are presented in the table by project category. Further information on the calculation principles and assumptions applied is provided by project category under Calculation principles, beginning on page 32.

Changes to the impact evaluation for 2016–2018

MuniFin carried out the green finance impact evaluation for the first time in 2016. The Green Bonds Impact Report is published annually to describe the impacts of projects. In the 2016 and 2017 reports, the estimated impact has been presented per year for projects funded during that year. In the 2018 report, the cumulative impact of the whole of the green portfolio was discussed for the first time. The development of reporting is driven by the harmonisation of the calculation principles after the first evaluation.

This report presents the status of the green portfolio at the end of 2019. The impacts of the portfolio have been updated to reflect MuniFin's contribution at the end of 2019. MuniFin's contribution has been determined as the share of the total amount disbursed and outstanding on 31 December 2019 in relation to the total investment cost of the financed project. This figure represents MuniFin's contribution to the estimated impact of the project as a whole.

The 2019 evaluation includes two key changes to previous years. These changes have been included in the evaluation of the new 2019 projects in the portfolio. Calculations for previous years are not affected. The changes are as follows:

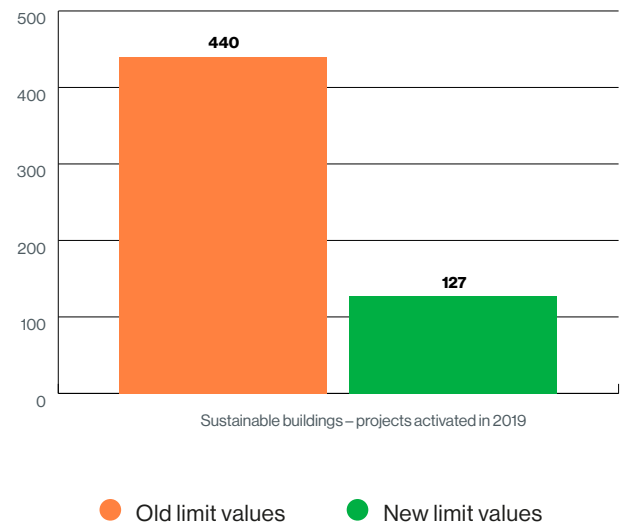
Tightening of E-value limit values for new buildings:

- The impact calculations for 2019 have been significantly influenced by the Decree of the Ministry of the Environment on the energy efficiency of new buildings, which came into force in 2018. With the tightening of E-value limit values, the impact of the sustainable buildings project category is relatively considerably lower than in previous years. The E-value is used to determine a reference building and the lower value affects the calculated benefit. The graph attached outlines the difference for 2019 projects, calculated with old and new limit values.

Updated electricity emission factor:

- In the joint Nordic Position Paper on Green Bonds Impact Reporting, the recommendation for the electricity emission factor to be applied has been updated in early 2020. The emission factor is reduced from the previously applied 380g CO_2/KWH to 315g CO_2/KWH. For 2019 projects, the updated emission factor has been applied.

CO_2 emission reductions in sustainable buildings projects (tCO_2/year), calculated based on old and new limit values



Calculation principles

The calculations presented in the report are based on the guidance provided in the Position Paper on Green Bond Impact Reporting drawn up jointly by a group of Nordic public sector issuers*.

Information from public sources (e.g., the emission factors) as well as data and reports directly related to the projects (e.g., project-specific environmental calculations) have been used in the calculations. Where necessary, the information has been supplemented by requesting further information from the parties that implemented the projects. The weighted impact has been calculated based on MuniFin's contribution to the total investment in each project. MuniFin's contribution has been calculated based on the amount of loan disbursed and outstanding at the end of 2019. The calculations represent the situation on 31 December 2019.

Emission factors used in the calculations:

- For new projects covered by the 2019 calculation, the emission factor applied in the calculations is 315g CO_2/kWh, based on the updated joint Nordic Position Paper on Green Bond Impact Reporting.*
- For projects covered by the 2016–2018 calculations, the electricity emission factor applied in the calculations is 380g CO_2/kWh, based on the earlier emission factor recommendation of the joint Nordic Position Paper on Green Bond Impact Reporting.
- The emission factor for district heating applied in the calculations is based on the values for the cogeneration or separate production of district heating reported by Motiva, according to the project locations.**
- Emission factors relating to traffic and transport are based on LIPASTO – a calculation system for traffic exhaust gas emissions and energy consumption in Finland***.
- In accordance with Greenhouse Gas Protocol, the reported impacts cover scope 1 and scope 2 emissions, unless otherwise stated.
- For projects whose estimated impact is based on the calculation results presented in project-specific environmental reports or other preparations, the emission factors are those used in the original calculations.

**Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting (2020)*
*** www.motiva.fi*
**** www.lipasto.vtt.fi*

Summary of emission factors used:

Energy form	Emission factor	Source
Consumption electricity (since 2019)	315g CO_2/kWh	Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting, 2020
Consumption electricity (before 2019)	380g CO_2 / kWh	Nordic Public Sector Issuers: Position Paper on Green Bonds Impact Reporting, 2019
Cogeneration of district heating	164 g CO_2 / kWh	Motiva.fi
Separate generation of district heating	20–450 g CO_2/kWh depending on the project location	Motiva.fi

Projects in different years have been calculated with the calculation assumptions for that year, for example, with regard to emission factors and the reference value of the building's E-value. For projects in preceding years, the annual update relates to updating the financial contribution as it changes.

Calculation principles by project category

Sustainable buildings
Annual energy efficiency improvements and the amount of avoided CO_2 emissions are assessed in relation to applicable energy efficiency regulation in Finland. The energy efficiency of a building is presented as an E-value. The Finnish building code has defined a building-type-specific maximum E-value, which a new building should not exceed in order to gain a building permit. The maximum E-value allowed for a new building is used as the basis for calculating the energy efficiency of buildings. With the new decree, the limit values for E-value were tightened at the beginning of 2018.

The E-value represents a building's annual consumption of purchased energy, according to the heated net area (kWh/m²/a) and based on the standard use of the building type and the weighted factors of the energy sources used. In the evaluation, solar or wind energy generated on the property is treated as a reduction in demand for purchased energy.

The estimated emission avoidance impact is calculated by using the emission factors for electricity and district heating production. Different forms of energy are weighted according to their proportions presented in the building's energy certificate. For the calculation of the electricity emission factor, 315g CO_2/kWh is applied for new projects covered by the 2019 calculation, and 380g CO_2/kWh is applied for projects covered by the 2016–2018 calculations. The values for cogeneration or separate production of district heating reported by Motiva are used in district heating calculations, based on the project locations.

In special cases where no E-value limit values have been defined for a building type, energy savings are calculated compared to the theoretical reference building. In this case, the energy consumption of the reference building is assumed to be the same as the building concerned, but all the consumed energy is assumed to be purchased energy, whereby the environmental impact of buildings utilising renewable energy technologies can be evaluated. For renovation projects in existing buildings, the calculated benefit is obtained by comparing baseline data to the post-renovation situation.

Sustainable public transportation
For sustainable public transportation, the calculations are based either on project-specific emission calculations, comparing the situation before the project to the situation after the project, or on the emission calculations carried out during project planning. For the West Metro Extension and the Tampere Tramway project financed in 2017, the amount of CO_2 emissions avoided is based on the emission calculations carried out during the planning phases and the estimated amount of CO_2 emissions that can be avoided through the project in question. The estimated carbon avoidance presented in the emission calculations for the projects have been weighted using MuniFin's contribution.

Water and wastewater management

For water and wastewater management projects, the calculations are based on surveys drawn up during the project design phase or on further information requested directly from the project company. The key reporting indicator is the annual amount of wastewater treated. Reports from previous years have also case-specifically reported indicators such as improved purification efficiency in relation to the existing minimum requirements.

Renewable energy

For renewable energy, the calculations are based on project-specific emission calculations and emission calculations carried out during the planning phases and the estimated amount of CO_2 emissions that can be avoided through the project in question. More detailed information on the data used in the 2016–2018 calculations is available in previous years' reports.

Energy efficiency

The annual improvement of energy efficiency and amount of CO_2 emissions avoided is evaluated through the reduction of energy use in relation to a replacement solution, which serves as the baseline for the calculations. The annual estimated energy savings are based on the savings calculations carried out in the projects.

The estimated amount of CO_2 emissions avoided is calculated by using the emission factors for electricity and district heating production. For the calculation of the electricity emission factor, 315 g of CO_2/kWh is applied for projects covered by the 2019 calculation, and 380 g of CO_2/kWh is applied for projects covered by the 2016–2018 calculations. The values for cogeneration or separate production of district heating reported by Motiva are used in district heating calculations, based on the project locations, as presented on page 32.

Table of MuniFin's green finance projects

MuniFin

Green finance project category	Customer	Project description	Project location	Committed amount	Disbursed amount 31 December 2019	MuniFin's share of financing of project's total investment	Year of approval
Energy efficiency	City of Jyväskylä	ESCO projects	Jyväskylä	2,000,000 €	1,203,963 €	100 %	2018
Energy efficiency	City of Kotka	Rauhala street lighting	Kotka	491,340 €	464,185 €	100 %	2018
Energy efficiency	City of Kotka	Ristinkallio street lighting	Kotka	403,226 €	246,212 €	100 %	2016
Energy efficiency	City of Kotka	Otsola street lighting	Kotka	305,000 €	233,251 €	100 %	2017
Energy efficiency	Koulutuskeskus Salpaus -kuntayhtymä	Renovation of education center, Ståhlberginkatu 8-10	Lahti	2,000,000 €	1,894,737 €	100 %	2018
Energy efficiency	Mäntyharju Municipality	Street lighting	Mäntyharju			100 %	2019
Energy efficiency	City of Pieksämäki	Uhonmäki street lighting	Pieksämäki	200,000 €	181,467 €	100 %	2019
Energy efficiency	Pielavesi Municipality	Street lighting	Pielavesi	120,330 €	114,572 €	100 %	2018
Energy efficiency	City of Tampere	ESCO project	Tampere	2,000,000 €	1,054,630 €	100 %	2017
Energy efficiency	City of Vantaa	ESCO project	Vantaa	1,550,000 €	762,217 €	100 %	2017
Sustainable public transportation	Länsimetro Oy	Western Metro extension	Espoo	490,000,000 €	467,878,099 €	21%	2018
Sustainable public transportation	City of Nurmes	Shared electric vehicle	Nurmes	200,000 €	18,190 €	100 %	2017
Sustainable public transportation	Tampereen Raitiotie Oy	City of Tampere tramway	Tampere	155,000,000 €	155,000,000 €	50 %	2017
Sustainable public transportation	City of Turku	Electric buses and charging infrastructure	Turku	4,000,000 €	852,194 €	100 %	2016
Sustainable buildings	As Oy Turun Löytöretkeilijä, Mangrove Vuokra Oy	Construction of apartment buildings, Lipunkantajankatu 3	Turku	5,510,000 €	1,653,000 €	100 %	2019
Sustainable buildings	Helsingin Asumisoikeus Oy	Construction of apartment building, Jamaika	Helsinki	15,204,970 €	3,800,000 €	100 %	2019
Sustainable buildings	Helsingin Asumisoikeus Oy	Construction of apartment building, Postimies	Helsinki			100 %	2019
Sustainable buildings	Helsingin Asumisoikeus Oy	Construction of apartment building, Postiljooni	Helsinki			100 %	2019
Sustainable buildings	Helsingin Asumisoikeus Oy	Fannynkallio apartment building ja townhouse	Helsinki	16,427,355 €	16,427,355 €	100 %	2017
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Haakoninlahdenkatu 5-7	Helsinki	25,457,150 €	5,089,150 €	100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Isonnevankuja 1	Helsinki			100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kaupinmäenpolku 15	Helsinki			100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kanariankatu 3	Helsinki	16,344,750 €	3,268,750 €	100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kyösti Kallion tie 1a	Helsinki	9,271,050 €	1,854,250 €	100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Kustinpolku 7	Helsinki			100 %	2019

MuniFin's contribution is presented based on information received from the customer and public sources. The figure does not take account of any project self-financing or grants.
All projects have not withdrawn the financing by 31 December 2019. Thus committed amount and disbursed amount columns are left blank.

Green finance projects

Green finance project category	Customer	Project description	Project location	Committed amount	Disbursed amount 31 December 2019	MuniFin's share of financing of project's total investment	Year of approval
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Pyhätunturintie 2	Helsinki	22,797,150 €	2,280,000 €	100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment building, Tullivuorentie 22	Helsinki	12,863,800 €	2,573,000 €	100 %	2019
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of apartment buildings, Sienakuja 4	Helsinki	9,639,000 €	9,612,493 €	100 %	2017
Sustainable buildings	Helsingin kaupungin asunnot Oy	Construction of Taidemaalarinkatu 2	Helsinki	14,212,000 €	14,172,917 €	100 %	2017
Sustainable buildings	Hollola Municipality	School of Heinisuo	Hollola	17,161,490 €	16,070,336 €	100 %	2016
Sustainable buildings	Hollola Municipality	School of Kalliola	Hollola	16,212,510 €	15,205,003 €	100 %	2016
Sustainable buildings	Hämeenkyrö Municipality	Environmental school of Mahnala	Hämeenkyrö	7,000,000 €	5,833,335 €	100 %	2017
Sustainable buildings	City of Hämeenlinna	Nummi service centre	Hämeenlinna	28,600,000 €	23,861,544 €	100 %	2016
Sustainable buildings	City of Imatra	School campus of Mansikkala	Imatra	45,000,000 €	45,000,000 €	100 %	2018
Sustainable buildings	Janakkalan Municipality	Fire station of Rastinkangas	Janakkala	6,500,000 €	6,272,751 €	100 %	2016
Sustainable buildings	City of Joensuu	School of Rantakylä	Joensuu	16,000,000 €	13,807,581 €	100 %	2018
Sustainable buildings	City of Joensuu	Daycare center of Hammaslahti	Joensuu	3,600,000 €	3,034,606 €	100 %	2018
Sustainable buildings	City of Joensuu	Daycare center Hukanhauta	Joensuu	4,500,000 €	4,008,391 €	100 %	2018
Sustainable buildings	City of Joensuu	School of Heinävaara	Joensuu	4,500,000 €	4,194,487 €	100 %	2018
Sustainable buildings	City of Joensuu	School of Nepenmäki	Joensuu	25,000,000 €	19,995,895 €	100 %	2016
Sustainable buildings	City of Joensuu	School of Karhumäki	Joensuu	11,000,000 €	8,843,072 €	100 %	2016
Sustainable buildings	City of Jyväskylä	School of Keljonkangas	Jyväskylä	23,000,000 €	23,000,000 €	100 %	2018
Sustainable buildings	Jyväskylän Yliopiston Ylioppilaskunta	Renevation project, Taitoniekantie 9 c	Jyväskylä	7,715,100 €	2,000,000 €	100 %	2019
Sustainable buildings	Jyväskylän Yliopiston Ylioppilaskunta	Renovation of apartment building, Taitoniekantie 9	Jyväskylä	7,269,600 €	7,269,600 €	100 %	2018
Sustainable buildings	City of Jämsä	School of Jämsänkoski	Jämsä	10,500,000 €	9,868,184 €	100 %	2017
Sustainable buildings	City of Kaarina	Main library, Kaarinatalo	Kaarina	9,000,000 €	8,625,000 €	100 %	2017
Sustainable buildings	City of Kalajoki	School of Merenoja	Kalajoki	25,000,000 €	17,557,668 €	100 %	2019
Sustainable buildings	City of Kalajoki	Fire station of Kalajoki	Kalajoki	3,000,000 €	2,400,000 €	100 %	2017
Sustainable buildings	Keski-Suomen opiskelija-asuntosäätiö (KOAS)	Multi-generation block, Kankaan Ilona, Ailakinkatu 10	Jyväskylä			100 %	2019
Sustainable buildings	Kiinteistö Oy Kuopion Koulutilat	Schools of Karttula and Jynkkä	Kuopio	14,400,000 €	12,732,663 €	100 %	2016
Sustainable buildings	Kiinteistö Oy Kuopion Koulutilat	Schools of Karttula and Jynkkä	Kuopio	12,190,000 €	11,800,960 €	100 %	2016
Sustainable buildings	Kiinteistö Oy Oulun Tarve	Construction of apartment building, Pohjantikankuja 4	Oulu	7,306,500 €	4,380,000 €	100 %	2019

Green finance projects

Green finance project category	Customer	Project description	Project location	Committed amount	Disbursed amount 31 December 2019	MuniFin's share of financing of project's total investment	Year of approval
Sustainable buildings	Kiinteistö Oy Oulun Tarve	Construction of apartment building, Hiukkavaaran paraati	Oulu	5,888,000 €	5,862,094 €	100 %	2017
Sustainable buildings	Kiinteistö Oy Turun Syvälahden koulu	Community center and school of Hirvensalo, Syvälahti	Turku	20,000,000 €	20,000,000 €	100 %	2017
Sustainable buildings	Kiinteistö-KYS Oy	Construction of residential building, Puijonlaakso	Kuopio	9,706,365 €	9,648,129 €	100 %	2017
Sustainable buildings	City of Kokkola	School of Chydenius	Kokkola	12,000,000 €	11,576,594 €	100 %	2018
Sustainable buildings	Koulutuskeskus Salpaus -kuntayhtymä	School campus of Vipusenkatu	Lahti	8,000,000 €	6,315,792 €	100 %	2016
Sustainable buildings	City of Kouvola	Daycare center of Lehtomäki	Kouvola	3,500,000 €	2,450,000 €	100 %	2018
Sustainable buildings	City of Kuhmo	Green wooden school of Kuhmo	Kuhmo	12,000,000 €	10,200,000 €	100 %	2016
Sustainable buildings	Kuopion Opiskelija-asunnot Oy	Construction of apartment building for students, Ahkio	Kuopio			100 %	2019
Sustainable buildings	Kuopion Opiskelija-asunnot Oy	Construction of apartment building for students, Taivaanpankko	Kuopio			100 %	2019
Sustainable buildings	Lahden Asunnot Oy	Construction of apartment building, Vasarantie 2 ja 4	Lahti			100 %	2019
Sustainable buildings	Lahden Asunnot Oy	Construction of apartment building, Laatikkotehtaankatu 5 c	Lahti			100 %	2019
Sustainable buildings	Lahden Asunnot Oy	Construction of residential building, Vanhatie 53	Lahti	3,471,120 €	3,432,942 €	100 %	2017
Sustainable buildings	Lahden Asunnot Oy	Construction of residential building, Asunto Oy Lahden lisakki	Lahti	3,504,416 €	3,478,720 €	100 %	2017
Sustainable buildings	Lahden Asunnot Oy	Construction of residential building, Asunto Oy Lahden Valtteri	Lahti	5,667,214 €	5,617,346 €	100 %	2017
Sustainable buildings	Lahden Asunnot Oy	Building for elderly	Lahti	8,327,937 €	8,277,972 €	100 %	2017
Sustainable buildings	Laukaa Municipality	Eco-school of Laukaa	Laukaa	5,000,000 €	5,000,000 €	100 %	2017
Sustainable buildings	Laukaa Municipality	School of Lievestuore	Laukaa	15,000,000 €	12,495,708 €	100 %	2017
Sustainable buildings	Leppävirta Municipality	School of Leppävirta	Leppävirta	10,000,000 €	8,494,490 €	100 %	2017
Sustainable buildings	Liminka Municipality	School of Linnukka	Liminka	5,000,000 €	4,000,000 €	100 %	2017
Sustainable buildings	City of Mikkeli	Daycare center of Kalevankangas	Mikkeli	4,200,000 €	4,200,000 €	100 %	2019
Sustainable buildings	Mäntsälän Jäähalli Oy	Indoor ice rink of Mäntsälä	Mäntsälä			100 %	2018
Sustainable buildings	Mäntsälä Municipality	School of Ehnroos	Mäntsälä			100 %	2019
Sustainable buildings	Mäntsälä Municipality	Schools of Hyökännummi and Riihenmäki & Daycare center of Hyökännummi	Mäntsälä	15,418,000 €	14,068,925 €	100 %	2016
Sustainable buildings	Mäntsälä Municipality	Schools of Hyökännummi and Riihenmäki & Daycare center of Hyökännummi	Mäntsälä	14,284,000 €	13,494,622 €	100 %	2016
Sustainable buildings	City of Parkano	School campus of Parkano	Parkano	17,000,000 €	15,320,366 €	100 %	2017
Sustainable buildings	Pielavesi Municipality	Building for elderly and renovation of the central commercial kitchen	Pielavesi	5,063,400 €	5,022,896 €	100 %	2017

Green finance projects

Green finance project category	Customer	Project description	Project location	Committed amount	Disbursed amount 31 December 2019	MuniFin's share of financing of project's total investment	Year of approval
Sustainable buildings	Pirkan Opiskelija-asunnot Oy	Building for elderly and renovation of the central commercial kitchen	Tampere			100 %	2019
Sustainable buildings	Proavera Oy	Indoor ice rink	Äänekoski	4,500,000 €	500,000 €	100 %	2018
Sustainable buildings	City of Saarijärvi	School and culture center	Saarijärvi	13,600,000 €	4,293,111 €	100 %	2019
Sustainable buildings	Savukoski Municipality	Educational center	Savukoski	3,900,000 €	172,118 €	100 %	2019
Sustainable buildings	TA-Asumisoikeus Oy	Construction of apartment building, Pellonreuna 7	Jyväskylä	8,299,550 €	1,400,000 €	100 %	2019
Sustainable buildings	Tohmajärvi Municipality	Daycare center of Tikkala	Tohmajärvi	2,000,000 €	1,850,000 €	100 %	2018
Sustainable buildings	Tyrnävä Municipality	School of Rantarousti	Tyrnävä	14,000,000 €	11,951,222 €	100 %	2016
Sustainable buildings	Varttuneiden asumisoikeusyhdistys Jaso	Multi-generation block, Kankaan Ilona, Ailakinkatu 10	Jyväskylä	10,097,300 €	3,500,000 €	100 %	2019
Sustainable buildings	VAV Asunnot Oy	Apartment building with Nordic Ecolabel, Kaskelantie 1	Vantaa	19,187,790 €	18,957,538 €	100 %	2018
Sustainable buildings	Vesanto Municipality	School campus	Vesanto			100 %	2019
Sustainable buildings	Ääneseudun Asunnot Oy	Renevation project, Lönnrotinkatu 1	Jyväskylä	5,279,300 €	4,000,000 €	100 %	2019
Renewable energy	City of Jyväskylä	Solar energy facilities	Jyväskylä			100 %	2018
Renewable energy	Kangasalan Lämpö Oy	Bioenergy heating plant	Kangasala	10,000,000 €	6,000,000 €	100 %	2018
Renewable energy	Kemin Energia ja Vesi Oy	Cental bioheating plant	Kemi			100 %	2019
Renewable energy	Lempäälän Energia Oy	Heating plant	Lempäälä	5,200,000 €	4,828,572 €	100 %	2017
Renewable energy	Lempäälän Energia Oy	Self-suffiency in energy, project of Lempäälä	Lempäälä	9,700,000 €	9,700,000 €	100 %	2017
Water and wastewater management	City of Heinola	Wastewater treatment plant of Sahaniemi	Heinola	8,000,000 €	7,200,000 €	100 %	2018
Water and wastewater management	Jyväskylän Seudun Puhdistamo Oy	Purification plant center of Jyväskylä region	Jyväskylä	10,000,000 €	10,000,000 €	100 %	2016
Water and wastewater management	City of Mikkeli	Water and wastewater treatment plant of Metsä-sairila	Mikkeli	20,000,000 €	20,000,000 €	50 %	2016
Water and wastewater management	Tunturi-Lapin Vesi Oy	Central purification plant of Ylläs	Ylläs	5,200,000 €	5,200,000 €	100 %	2018
Water and wastewater management	Turun Seudun Puhdistamo Oy	Wastewater purification plant of Kakolanmäki	Turku	15,000,000 €	15,000,000 €	50 %	2018
Water and wastewater management	City of Uusikaupunki	Purification plant of Häpönniemi	Uusikaupunki	1,700,000 €	1,700,000 €	100 %	2018
Water and wastewater management	Vesikolmio Oy	Central purification plant of Kalajokilaakso	Kalajoki	15,000,000 €	11,625,000 €	100 %	2016

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