

Árborg Sustainable Bond

Allocation and Impact Report

2022



Introduction

On 7 June 2021, Árborg municipality published its first sustainable finance framework. Árborg was the first issuer to issue sustainable bonds in Iceland to finance projects that have both environmental and/or social benefits. It was listed on the Nasdaq's sustainable bond index in June 2021 – instrument ARBO 31 GSB. The purpose of the framework is to enable Árborg to issue bonds or other financial instruments with known use of proceeds, to finance certain parts of its operation and that align with the municipality's sustainability objectives.

To ensure transparency, Árborg will publish an annual allocation and impact report as long as it has sustainable financial instruments outstanding. Issuances under the framework may be labelled respectively as “green”, “social” or “sustainable” instruments, depending on the category of projects financed under the framework. This is the second Allocation and Impact Report (hereafter the Impact Report or the Report) under the framework.

Accounting firm KPMG performed an independent limited assurance engagement on this Allocation and Impact Report, pertaining to the allocation of proceeds.



Árborg and sustainable financing

Árborg municipality intends to be a leader among Icelandic municipalities in the field of environmental protection with a focus on sustainable development. This strategy will make the municipality more appealing for current and future generations. Árborg measures its social progress as an active member of social progress index Framfaravogin. The municipality also published its environmental policy in 2020, outlining specific goals that each aligns with a United Nations Sustainable Development Goal (SDG).

The goals set in the environmental policy are as follows:

Governance: Ensure professional governance and focus on sustainable development. Prioritise environmentally certified products and services in procurement.

Climate change: Attain carbon neutrality before 1 January 2030.

Nature conservation: Actively promote conservation of the natural environment and maintain biodiversity.

Cultural monuments: Protect cultural monuments.

Education: Increase general knowledge about local flora and fauna. All schools to reach “green flag” status before 2022. Provide environmental education for adults.

Waste: Maximum of 5% of total waste disposed of in landfills. Incorporate the “polluter pays” principle in waste fees.

Industries: Contribute to the sustainable coexistence of industries with society and nature. Promote environmentally friendly tourism.

Transportation: Promote environmentally friendly transport. All transport owned by the municipality to be electrified before 2025. Increase share of walking, cycling and horse-riding paths.

Appearance and public health: Establish a reputation for cleanliness in public spaces.

Society: Promote the action plan¹ for public health and outdoor activity, and outdoor activity for disease prevention.

¹ The action plan is a part of the environmental policy:
<https://www.arborg.is/media/stefnur/Umhverfisstefna-Arborgar-10.06.2020.pdf>

Eligible projects and allocation

The value of Árborg's sustainable asset pool² was ISK 6.08bn as of 31 December 2022. In the year 2022, the municipality issued ISK 4.52bn of sustainable bonds which were used to fully fund eligible projects under its sustainability bond framework. The projects range from development and maintenance of renewable energy infrastructure, increased energy efficiency, improved infrastructure for pedestrian traffic, new schools and potable water for inhabitants to the purchase of land to provide open spaces and playgrounds for younger inhabitants. The sustainable bonds issuance has now been fully allocated to projects carried out in 2022 (new finance) and 2021 (refinance).

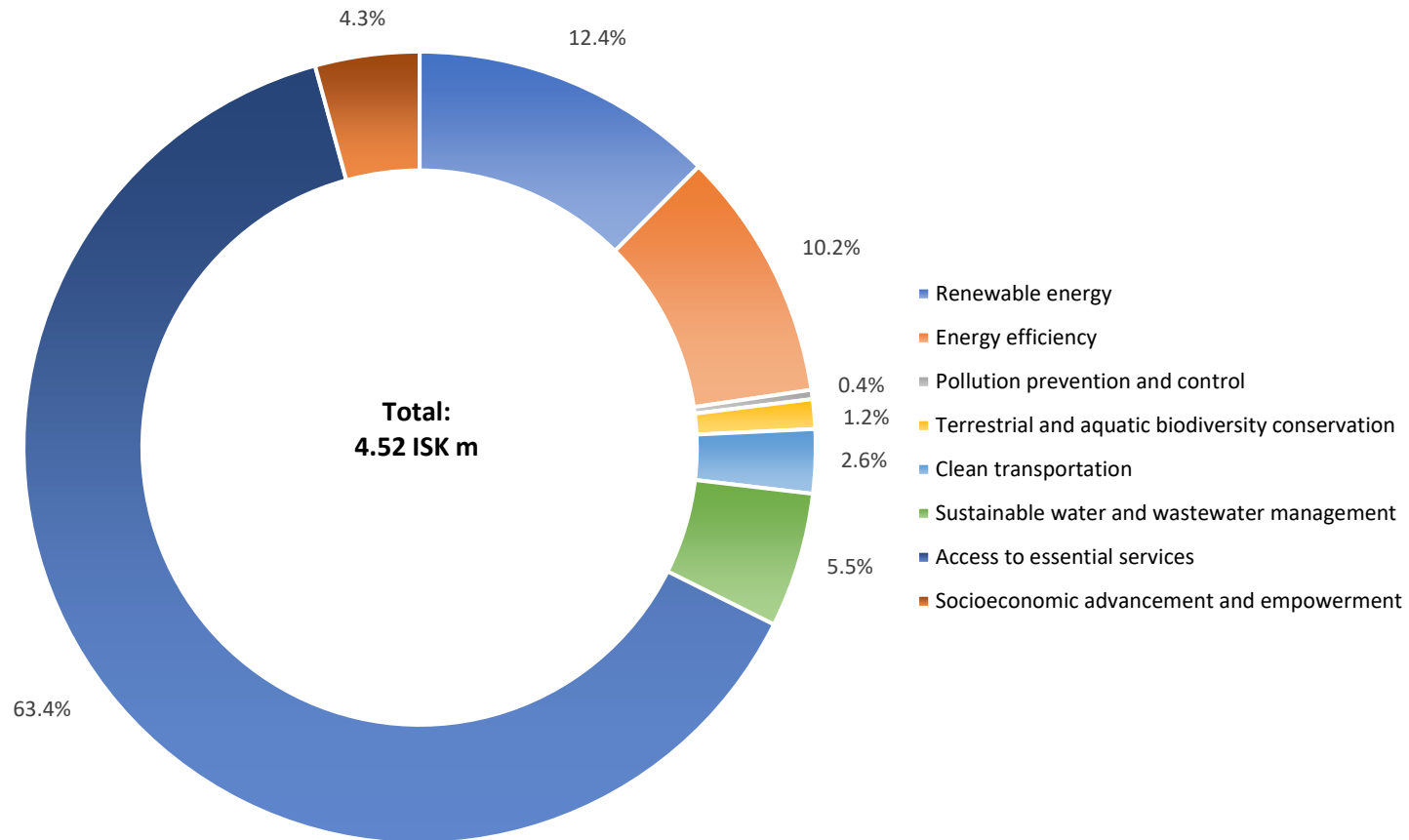


Table 1. Eligible sustainable asset pool under Árborg's sustainability bond framework and allocated funding in 2022. Amount in ISK m.

Project category	Total eligible	Allocated	Unallocated	Allocated proportion	Green	Social
Renewable energy	678.6	562.4	116.2	82.9%	●	
Energy efficiency	628.0	462.2	165.8	73.6%	●	
Pollution prevention and control	30.8	17.0	13.8	55.2%	●	
Terrestrial and aquatic biodiversity conservation	84.5	54.5	30.0	64.5%	●	
Clean transportation	738.5	118.1	620.4	16.0%	●	
Sustainable water and wastewater management	499.3	249.0	250.3	49.9%	●	
Access to essential services	2,956.2	2,864.3	91.9	96.9%		●
Socioeconomic advancement and empowerment	462.9	192.4	270.5	41.6%		●
Total Sustainable Asset Pool (ISK m)	6,078.8	4,520.0	1,558.8	74.4%		

² Information on eligible sustainable assets for the years 2019 and 2020 have not been aggregated and are not included.

Distribution of allocated funds in 2022



The proportion of financed projects that fall under the green category increased to 32% in 2022 from 8% the year before. In total, 27% of the financed projects have been within the green category since the initial issuance of the sustainable bond.

The Årborg's sustainability bond framework states that financing during the same year of issuance is considered as new financing. In the case of refinancing, a three-year look-back period prior to the year of issuance can be used. In 2022, 73% of the 2022 allocations were considered as new financing, compared to 100% the year before.

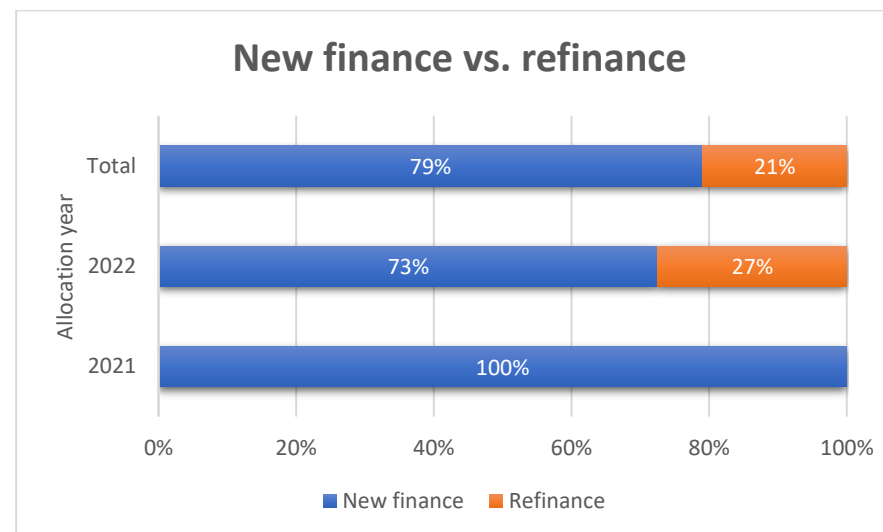
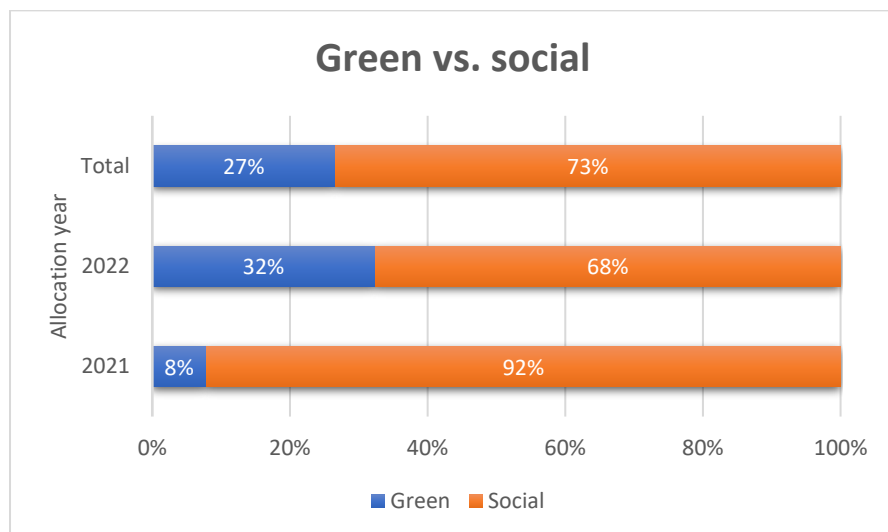


Table 2. Overview of accumulated funding to projects funded under Árborg's sustainability bond framework. Funding in ISK m.

Project category	Project	2021	2022	Total bond funding
Renewable energy	Development and operations of facilities used for geothermal energy	80.2	482.3	562.4
Energy efficiency	LED lighting	17.4	14.7	32.1
Energy efficiency	Installation of energy efficiency measures in energy systems	17.6	44.6	62.1
Energy efficiency	Distribution of hot water for district heating	25.3	342.8	368.0
Pollution prevention and control	Development, construction and operations of waste facilities		17.0	17.0
Terrestrial and aquatic biodiversity conservation	Purchase of open, natural areas and parks designated for public access		54.5	54.5
Clean transportation	New pathways and renovations for cycling and walking	91.5	118.1	209.6
Sustainable water and wastewater management	Wastewater - renewals and expansion of infrastructure		186.0	186.0
Sustainable water and wastewater management	Water - collection, renewals and expansion of infrastructure	18.2	63.0	81.2
Access to essential services	Stekkjaskóli - New primary school	1,234.6	1,311.5	2,546.2
Access to essential services	Goðheimar - New kindergarten	307.9	52.6	360.6
Access to essential services	Móberg - New healthcare service	280.5	20.0	300.5
Access to essential services	New multi-functional building to accommodate different educational work		50.9	50.9
Access to essential services	Kindergartens - improved facilities and accessibility	38.6		38.6
Access to essential services	Primary schools - improved facilities and accessibility	9.4	315.4	324.8
Access to essential services	Other public buildings - improved facilities and accessibility	44.9	14.2	59.1
Socioeconomic advancement and empowerment	Multipurpose sport hall	473.9	113.4	587.3
Socioeconomic advancement and empowerment	Construction and maintenance of sporting and playground facilities		79.1	79.1
Total bond funding (ISK m)		2,640.0	3,280.0	5,920.0

Impact

The table 3, see below, sets out either the impact associated with the projects financed under the sustainable bond issuance or the ex-ante impact, which is the expected impact from the projects upon completion. Construction is on-going for multiple projects and the impact yet unrealised. The impact metrics are mostly in line with our published framework though with one exception in the category “Sustainable water and wastewater management”. In this category it was considered more suitable for some projects to report on the population gaining improved wastewater treatment facilities. In addition to disclosed impacts in the table below, some impacts are immeasurable. For example, increased safety and accessibility of pedestrians and people with physical disabilities.

Renewable energy

Selfossveitur is a district heating utility that is owned by the Árborg municipality and operates only within its borders. It provides low temperature geothermal to majority of Árborg’s citizens for house heating. Along with the rapid grow of the municipality in recent years, the demand for geothermal in same manner. Leading to further construction and development of the utility’s infrastructure, e.g. drilling and activation of a

new borehole. The sustainable bond proceeds covered roughly 245 GWh of geothermal energy produced in 2022.

Energy efficiency

In recent years, Árborg has worked to replace conventional lighting with LED lighting. LEDs produce more brightness with less energy and last longer than conventional lighting. It is estimated to be up to 60% more energy efficient while also providing better lighting with increased security for pedestrians and other travellers. In 2021 and 2022, approximately 860 new led lamps for street lighting were installed.

Selfossveitur have installed distribution systems to multiple new districts, connecting them to its hot water system. The utility estimates the use will be around 320 GWh/year for the fundings in 2022. The utility has also worked continuously to replace old meters with new smart meters. The smart meters measure energy consumption at regular intervals and automatically send the information to the utility. This gives both the customers and the utility the opportunity to react earlier in case of abnormal use and have the issued invoices to be based on actual usage. Selfossveitur estimate this will result in 5% reduction in use.

Pollution prevention and control

It is estimated that the allocated funding in 2022 resulted in reduction, sorting and reuse of waste equivalent to 300 tonnes. If that amount of waste would have been landfilled, then the emissions reduction would be around 264 tonnes of CO₂e.

Terrestrial and aquatic biodiversity conservation

The municipality purchased a land named "Litla-Sandvík land 4" in 2022. It is 17.2 hectares of open natural area ideal for public access west of Selfoss.

Clean transportation

Árborg has set broad plans to increase public's access to cycling and walking paths as well as increasing their safety. It is part of increasing outdoor activities and public health while also attempting to reduce unnecessary driving of vehicles resulting in reduced emissions. Projects funded under the Árborg's sustainable bond have financed construction of 9.5 km of cycling and walking paths. It has also financed infrastructure to increase safety, such as special lighting, walking trails for school children and bicycle crossing.

Sustainable water and wastewater management

The first steps of preparation and development of a new wastewater treatment plant in Geitanes has begun and been financed with Árborg's sustainable bond proceeds. It will serve around 14,000 citizens and is expected to reduce dry matter emissions by 90%, nitrogen emissions by 38%, phosphorus emissions by 29%, E-coli emissions by 90% and other oxygen-consuming substances, BOD emissions, by 80%.

Like the use of hot water, it was needed to establish new water source to fulfil the increased demand. The municipality have started water collection at Ingólfssjall where it has been able to provide close to 315 thousand m³ of water annually. It has also expanded the water supply distribution systems at Austurbyggð, Víkurheiði and Holtsvegur where the annual water use was increased by 1,221 thousand m³. In total the increase is estimated to be 1,536 thousand m³ annually. On the other hand, actions have been taken to update and fix older distribution supply systems which have resulted in 97.7% decrease (equivalent to 247 thousand m³ reduction annually) in relevant systems.

Access to essential services

Along with the rapid growth of the municipality, it has placed great emphasis on strengthening all its infrastructure. Both new kindergarten and a school have been under construction, along with the construction of

a new healthcare facility (Móberg) for 60 residents. The first stage of Stekkjaskóli is completed and stage two is currently under construction. The third and final stage will be constructed and is scheduled to be finished in 2024. When finished Stekkjaskóli will have capacity for up to 650 students and be around 11,000 m². While it is constructed the municipality funds temporary portable classrooms for students.

Goðheimar is a kindergarten for children between the ages of 1.5 to 6 years old and has a capacity for approximately 120 students and is roughly 1,100 m². It was partially taken into operation in 2021 when it was able to invite half of the total student's capacity. In addition to Móberg, the new healthcare facility, 18 new spaces for elderlies were added in 2021 previously established healthcare facility at Vallholt 19.

Numerous other projects have been funded under the Árborg's sustainable bond proceeds; preparations of a new multi-functional building to accommodate the many different educational work in Árborg (estimated increase of 120 new students' capacity), interior equipment for primary schools, increased accessibility for people/children with physical disabilities, improved work facilities in kindergarten and increased capacity of 18 in care of elderly persons.

Socioeconomic advancement and empowerment

Construction of a new multipurpose sports hall began in 2019 and was opened in autumn 2021. Further instalment and development of the building continued until 2022 when it was given its formal name Selfosshöllin. The sports hall has a base area of approximately 6,500 m² which consists of half an artificial grass field, facilities for athletics and gym. It is possible to either walk or run around the field on a rubber surface. The building is also used by senior citizens, day care providers, the mental health team at the Healthcare institution of South Iceland and students of kindergartens and elementary schools. Selfosshöllin is also suitable for exhibitions and concerts and is estimated to serve around 1,150 individuals practicing sports.

The municipality operates various types of public sporting facilities in multiple locations which serve in total around 12,000 individuals. The sporting facilities that are funded within the 2022 allocations consist of:

- Selfoss: three sports halls, two sports fields and a swimming hall.
- Stokkseyri: a sports hall, a sports field and a swimming pool.
- Eyrarbakki: a sports field.

Table 3. Overview of the impact of allocated funding under Årborg's sustainability bond framework.

Project category	Impact metric	2021 impact	2022 impact	Total accumulative impact	Ex-ante impact
Renewable energy	tCO2e avoided annually	Under construction	2,526.3	2,526.3	-
Energy efficiency	tCO2e avoided annually	18.6	3,366.5	3,385.1	-
Pollution prevention and control	Tonnes of annual absolute amount of waste separated and/or collected, and treated or disposed of	-	300	300	-
Terrestrial and aquatic biodiversity conservation	Hectares of new land purchased for conservation and public access	-	17.2	17.2	-
Clean transportation	Total kilometres of walking/cycling paths	4.80	4.74	9.54	Increased safety
Sustainable water and wastewater management	Annual absolute million m ³ of new water usage	Under construction	1.54	1.54	-
Sustainable water and wastewater management	Reduction of m ³ water use at project level	Under construction	97.7%	97.7%	-
Sustainable water and wastewater management	Population with improved wastewater treatment facilities	-	Under construction	-	14,000
Access to essential services	Number of new students reached	260	60	320	570
Access to essential services	Improved kindergarten and/or school facilities; number of students	142	59	201	-
Access to essential services	Improved capacity in healthcare and elderly	18	60	78	-
Socioeconomic advancement and empowerment	Increased participation in sports and other social activities by individuals	Under construction	1,150	1,150	-
Socioeconomic advancement and empowerment	Maintenance and improved sporting and/or social facilities; number of participants	-	12,000	12,000	-

Methodology

Some impact factors are more difficult to put in numbers than others. Impact factors for projects that result in increased safety of pedestrians and accessibility for people with physical disadvantages have not been directly accounted for. Only project categories for renewable energy and energy efficiency have been calculated for avoided emissions. The impact calculations for avoided emissions due to decreased electricity use is estimated based on Iceland's electricity grid carbon factor published by the Environment agency of Iceland. The [latest factor](#)³ to be published is 10.3 gCO₂e/kWh for the year 2021. Avoided emissions from renewable energy (geothermal), installation of energy measures in district heating systems and distribution of hot water consider that electricity would be used instead. Emissions from low temperature geothermal (hot water) are negligible.

In table 3, there is only provided information for the impacted amount of waste, but the avoided emissions are calculated in the text. Those calculations are based on if the waste would have been landfilled instead. The [factor](#)³ used is also from the Environment agency of Iceland – 0.88 tCO₂e per tonne of waste. As with the electricity grid carbon factor, the latest publication is for the year 2021.

³ Accessed in August 2023.

Figures

- Front page - Norris Niman
- Page 2 - Vladimir Riabinin
- Page 4 - Vivek Kumar