



Electrolux

Green Bond Second Opinion

March 11, 2019

Electrolux Group is a global company headquartered in Stockholm specialized in the production of household appliances and appliances for professional use. These include appliances such as refrigerators, cookers, hobs, ovens, professional kitchens as well as washing machines, dryers, vacuum cleaners, air-conditioners, water heaters and heat pumps. Electrolux operates globally with 80% of 2018 sales in the core markets of Western Europe, North America, Australia and Brazil. According to the issuer, as of 2018, Electrolux has reduced energy used per manufactured standard product by 44% and absolute CO₂ emissions by 66% compared to 2005. The IEA's Innovation Tracking Framework that identifies key long-term innovation gaps lists Electrolux as one of the key R&D initiatives to improve efficiency within appliances

Overall, Electrolux's Green Bond Framework from March, 2019 provides a clear and sound framework for investments into projects that align with the Green Bond Principles (2018). Eligible project categories include **energy efficiency, eco-efficient and/or circular economy adapted products, production technologies and processes, pollution prevention and control and renewable energy.**

Green bond proceeds can be used to finance both new projects as well as refinance existing eligible projects. The issuer informed us that major part of the use of proceeds from Electrolux's first green bond issuance are aimed to be used for financing of new Eligible Green Assets.

Electrolux has in place a sound management and governance structure, as well as regular and transparent reporting about green bond project achievements to investors and the public. Science Based Targets (SBTs) aim for emissions reductions from operations by 80% (Scope 1 and 2) and reductions from products by 25% (Scope 3) by 2025 (2015 base year). The overall assessment of the governance structure to support the implementation of the Green Bond Framework gives it a rating of **Excellent**. We note that Electrolux has a strong background in sustainability improvements and has ambitious targets and strategies in place.

Efficiency improvements, waste avoidance in manufacturing and for end-user appliances as well as replacement technologies for Hydrofluorocarbons (HFCs) can be financed. In many cases this leads to substantial environmental improvements. However, there are still greenhouse gas emissions that can potentially represent a lock-in of technologies that become obsolete in the long term, e.g., investments in gas powered furnaces. In specific cases proceeds can be used to invest in fossil fuel efficiency improvements.

Based on the overall assessment of the project types that will be financed by the green bonds and governance and transparency considerations, Electrolux's Green Bond Framework receives a **Medium Green** shading.

SHADES OF GREEN

Based on the project category shadings detailed below combined with consideration of Electrolux's governance structure, we rate the Electrolux Green Bond Framework **Medium Green**.

GOVERNANCE

Based on a qualitative assessment of three key governance factors, CICERO Shades of Green finds the governance procedures in this framework to be **Excellent**.



GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.



°CICERO
Medium Green



Contents

1	Terms and methodology	3
	Expressing concerns with 'Shades of Green'	3
2	Brief description of Electrolux's Green Bond Framework and related policies	4
	Environmental Strategies and Policies:	4
	Use of proceeds:	5
	Selection:	5
	Management of proceeds:	6
	Reporting:.....	6
3	Assessment of Electrolux's Green Bond Framework and policies	7
	Overall shading	7
	Eligible projects under the Electrolux Green Bond Framework.....	7
	<i>Background</i>	10
	Governance Assessment.....	10
	Strengths.....	10
	<i>Governance</i>	10
	<i>Project Categories</i>	11
	Pitfalls.....	11
	<i>Governance</i>	11
	<i>Project Categories</i>	11
	<i>Impacts beyond the project boundary</i>	12
	<i>Rebound effects</i>	12
	Appendix 1: Referenced Documents List	13
	Appendix 2: About CICERO Shades of Green	14



1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the Electrolux's Green Bond Framework dated **March, 2019**. This second opinion remains relevant to all green bonds issued under this framework for the duration of three years from publication of this second opinion, as long as the framework remains unchanged. Any amendments or updates to the framework require a revised second opinion. CICERO Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the issuer's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence with the issuer. Second opinions are restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. CICERO Green is not responsible for an institution's implementation of a framework, nor does it guarantee or certify the climate effects of investments in eligible projects.

Expressing concerns with 'Shades of Green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions of the bonds. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green



Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.



Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.



Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.



Brown is allocated to projects and solutions that are in opposition to the long-term vision of a low carbon and climate resilient future.

Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available



New infrastructure for coal

Sound governance and transparency processes facilitate delivery of issuer's climate and environmental ambitions laid out in the framework. Hence, the governance aspects are carefully considered and reflected in the overall shading of the Green Bond Framework. CICERO Green considers four factors in its review of an issuer's governance processes: 1) the policies and goals of relevance to the Green Bond Framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent.



2 Brief description of Electrolux's Green Bond Framework and related policies

Electrolux Group is a global company headquartered in Stockholm specialized in the production of household appliances. These include appliances such as refrigerators, cookers, hobs, ovens, professional kitchens as well as washing machines, dryers, vacuum cleaners, air-conditioners, water heaters and heat pumps. The Group is listed on the Stockholm Stock Exchange, sells approximately 60 million products annually and has 54 000 employees. Electrolux operates globally with 80% of 2018 sales in the core markets of Western Europe, North America, Australia and Brazil.

Environmental Strategies and Policies:

Electrolux has developed a comprehensive set of corporate policies and targets and has a group wide sustainability framework, which is directly overseen by the Group management. The issuer reports annually on progress via its Sustainability report. Electrolux's factories with more than 50 employees are required to be ISO 14001 certified and should also be certified according to ISO 50001 (energy management). Electrolux endorses the United Nations Global Compact (UNGC) and is a signatory of the UNGC Water Mandate and reports in accordance with the United Nations Guiding Principles on Business and Human Rights reporting framework. According to the framework, Electrolux sees the UN Sustainable Development Goals (SDGs) as important for their sustainability efforts and focuses on SDG 12 "Responsible Consumption and Production", SDG 13 "Climate Action" as well as SDG 2 "Zero Hunger" and SDG 8 "Decent Work and Economic Growth".

Electrolux also responds to the CDP Climate Change and Water questionnaires. The group has a good understanding of short-term, medium-term and long-term transitional and physical climate risks and has a strategy in place to evaluate and manage physical risks, such as floods or extreme weather events, for its plants. Electrolux also uses qualitative and quantitative climate-related scenario analysis to inform their business strategy.

In 2013 Electrolux set a target to reduce the total CO₂ emissions by 50% in 2020 relative to 2005 based on a life cycle approach. In addition, Electrolux aims for a 50% share of renewable energy for their operations in 2020 and an improvement in CO₂ efficiency across all modes of transport by 15% in 2020 compared to 2015. The issuer informed us that Electrolux set a 2020-target to improve energy efficiency by 20% compared to 2015 and that an internal certification scheme to systematically identify energy-saving opportunities is in place. This scheme has been a key driver for Electrolux's 44% reduction of absolute energy used per manufactured standard and absolute 66% CO₂ emissions reductions compared to 2005. The issuer has science-based targets in place that are approved by the Science Based Target Initiative. Electrolux commits to reduce greenhouse gas emissions from operations by 80% (Scope 1 and 2) and emissions from products by 25% (Scope 3) by 2025 (2015 base year). According to data reported to CDP, the issuer has a target of reducing water consumption by 5% per year in stressed areas identified with WWF's water risk filter and by 1% per year in other areas. The water targets are followed up on a monthly basis on a plant/sector and global level.

In 2017, Electrolux used approximately 300 000 metric tons of thermoplastics raw materials. The issuer informed us that they currently aim for using 20 000 metric tons per year of recycled plastics by 2020. Electrolux also has a "zero landfill" objective for its operations. This demands that the amount of landfilled materials cannot exceed 1% and the amount that goes to incineration cannot exceed 3%.



Use of proceeds:

According to the Green Bond Framework, proceeds will be used to finance or refinance assets that fall in the environmental areas included in Electrolux's Sustainability Framework – For the Better. The share of financed and re-financed projects will be published annually. The issuer has informed us that the proceeds from the first bond will mainly be used to finance new eligible projects. Eligible projects can also include R&D as well as Manufacturing Engineering. According to the framework, Electrolux defines manufacturing engineering as “to research and to develop tools, processes, machines and equipment; and to integrate the facilities and systems”. Investments in R&D includes development of new products, whereas Manufacturing Engineering includes the development of industrial processes.

Proceeds will be used to fund projects in the five project categories: improving product performance and efficiency; make better use of resources; eliminate harmful materials; achieve more with less; climate targets. These project categories were selected based on four out of nine of Electrolux's promises laid out in its sustainability framework and mostly target the UN Sustainable Development Goals “Climate Action” and “Responsible Consumption”. The framework specifies the relation of Electrolux's project categories to the categories described in the Green Bond Principles.

Electrolux informed us that they foresee the following categories to dominate regarding allocation of proceeds: improving product performance and efficiency; eliminate harmful materials and achieve more with less.

Electrolux does not exclude financing or re-financing of processes using fossil fuel-based energy generation. This is qualified by either of the additional eligibility requirements for assets involving fossil fuel:

- the fossil fuel component of the energy required to run the equipment is marginal (<5%) compared to the production unit's total energy consumption OR
- a technically and economically viable solution for renewable energy does not exist; and the solution contributes to a considerable reduction (>30%) of a production unit's total CO₂ emissions; for example, through lower energy consumption from the production unit.

The issuer informed us that processes using fossil fuel-based energy generation is mainly used for heating and for enameling furnaces as well as small quantities of gas are used for soldering and as fuel for trucks. Potential financing could include investments in furnaces for enameling using natural gas, but the issuer foresees an increasing share of renewable gas in the future. The issuer excludes coal and oil as potential fuels.

Selection:

The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green bond funding. The broader the project categories, the more importance CICERO Green places on the governance process.

The selection process includes a screening and verification of potential eligible assets by business area through Electrolux's regular investment request process. Subsequently, a formal evaluation against the eligibility criteria is conducted by the Green Bond Committee. An established Green Bond Committee, comprised of representatives from Group Sustainability, Group Treasury, Investor Relations and Group Controlling will approve projects that meet the requirements. The decisions are made periodically and in consensus. The decisions will be documented. The issuer informed us that these documents will be available to Electrolux's auditors who will be verifying the process for project evaluation and selection.



Considered projects must align with this framework and must feature a high likelihood that the net, long-term environmental impacts of the asset are positive. Efficiency improvements are quantified via a fixed methodology that provides a standardized approach for calculating eligibility.

Electrolux has informed us that screening of resiliency and impacts of extreme weather events, flooding, snow and wind, have been analyzed for specific cases and that Electrolux commenced the process of conducting analyses according to the TCFD recommendations during 2019.

Management of proceeds:

A dedicated, segregated Green Account will be credited by the issue of the green bonds and managed by the Group Treasury. This ensures monitoring and tracking of the use of proceeds. Funds are periodically deducted from the Green Account equal to disbursements for the financing of eligible assets as long as green bonds are outstanding, and proceeds are available and allocated to a portfolio of eligible assets.

Prior to disbursement, proceeds in the Green Account are placed as part of the liquidity reserve and managed accordingly. The issuer informed us that these investments are limited to money market instruments, mostly overnight deposits and do not include potential investments in fossil fuel related technologies.

Reporting:

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green bond programs. Procedures for reporting and disclosure of green bond investments are also vital to build confidence that green bonds are contributing towards a sustainable and climate-friendly future, both among investors and in society.

Electrolux plans to publish an annual Green Bond Impact Report on their web page. The report will be subject to external auditing and the respective opinion will be published on Electrolux's website as well.

The Green Bond Impact Report will include the total amount of Green Bonds that have been issued by Electrolux which are outstanding; a description of the portfolio of approved Eligible Assets that have been financed using the net proceeds of the Green Bonds (including the amount allocated to each Eligible Category); a description of the Eligible Green Assets including allocated amounts and their main environmental benefits; information about the split of Green Bond proceeds between new assets and re-financing; the total amount of unallocated Green Bond proceeds (if any); where possible, quantitative descriptions of the environmental benefits of the Eligible Green Assets. Electrolux informed us that expected benefits will be reported until actual data is available.

Electrolux has put forward a list of impact metrics for each of the project categories in the Green Bond Framework to quantify environmental benefits. All projects that include fossil fuel will be described in the Green Bond Impact Report and, according to the issuer, use of fossil fuel will be reported as kWh and metric tons of CO₂ and compared with the metrics for the entire production unit.<



3 Assessment of Electrolux’s Green Bond Framework and policies

The framework and procedures for Electrolux green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where issuers should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in Electrolux’s Green Bond Framework, we rate the framework **Medium Green**.

Eligible projects under the Electrolux Green Bond Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed and that the selection process should be “well defined”.

Category	Eligible project types	Green Shading and some concerns
Improve product performance and efficiency (GBP categories: “Energy Efficiency” and “Eco-efficient and/or circular economy adapted products, production technologies and processes”)	<ul style="list-style-type: none"> Investments in manufacturing equipment and tooling which relate to specific products with a view to improving energy and/or water efficiency. Eligible Green Assets should have an energy efficiency (weighted average) that is at least 15% better compared to the average of current products produced for a specific market. R&D of products with improved energy or water efficiency. Eligible R&D projects will aim to improve the energy efficiency (weighted average) at least 15% compared to the average of current products produced for a specific market. 	Medium to Dark Green <ul style="list-style-type: none"> ✓ Focusing on 15% energy efficiency improvement compared to own product average can be seen as ambitious as Electrolux’s products are efficient compared to benchmarks across regions. ✓ There is no water efficiency threshold – according to Electrolux due to varying market requirements ✓ Products will be fossil free, but be aware of potential lock-in through investments in fossil-fuel manufacturing equipment





Make better use of resources

(GBP category: “Pollution Prevention and Control”)



- Investments in manufacturing equipment related to the development and production of recycled materials (e.g. plastics).
- R&D of recycled materials (e.g. plastics). Eligible Green Assets should have the objective to develop material compositions based on recycled plastics, or re-design and qualification of products for recycled plastics.

Medium to Dark Green

- ✓ Waste recycling is an essential activity in a low carbon society and part of the long-term solution
- ✓ As any activity, recycling will entail some emissions (e.g., through energy use, transport, etc.) and discharges to the environment (e.g., plastic pollutants etc.) and should be managed
- ✓ Consider that recycled plastics are still fossil fuel based and that continuous plastic use in end-user products can lead to lock-in of emissions through plastic dependency
- ✓ Sourcing recycled materials can lead to increased emissions (e.g., transport). Electrolux aims at sourcing locally and conducts LCAs to mitigate this risk.

Eliminate harmful materials

(GBP category: “Pollution Prevention and Control”)



- Investments in processing equipment for using refrigerants or foam blowing agents with greenhouse warming potential (GWP) of less than 15 CO₂eq¹
- Investments in research and development with a view to eliminating refrigerants and foam blowing agents with a GWP which is higher than 15 CO₂eq.

Medium to Dark Green

- ✓ Substitution with foam blowing agents and refrigerants of less than 15 CO₂eq is state of the art and cutting edge technology
- ✓ Investments in HFC substitutes substantially reduce climate impact but still involve other greenhouse gases. However, these represent a little share of the overall life cycle impact of products.
- ✓ Applying the EU standard globally can drive global market

¹ According to the limit in the definition of the EU directive 2012/19/EU: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012L0019>



Achieve more with less

(GBP category: “Green Buildings” and “Energy Efficiency”)



- Investments in commercial buildings in: (i) in the case of new buildings energy efficiency that is at least 30% better than applicable building codes and (ii) for renovated buildings at least 30% improvement in energy efficiency;
- Investments in new or renovated factory or warehouse buildings (including Manufacturing Engineering in relation thereto) which results in at least a 20% improvement in energy efficiency;
- Investments in equipment (including Manufacturing Engineering in relation thereto) which results in at least a 20% increase in energy efficiency;
- Investments in equipment (including Manufacturing Engineering in relation thereto) which aims to reduce water consumption;
- Investments in equipment (including Manufacturing Engineering in relation thereto) relating to waste water treatment;
- Investments in equipment (including Manufacturing Engineering in relation thereto) which aims to reduce emissions of harmful substances;
- Investments in equipment (including Manufacturing Engineering in relation thereto) which aims to reduce manufacturing waste;

Medium Green

- ✓ A 30% reduction is in line with the IEA ‘well below 2°C’ target
- ✓ Despite Electrolux having market focus on Western Europe, Australia, North America and Brazil, investments can be global.
- ✓ LEED GOLD criteria have to be met by commercial buildings where no building codes exist
- ✓ Be aware of potential lock-in of emissions through investments in more efficient natural gas manufacturing (e.g., for enameling furnaces) or heating equipment
- ✓ Best practice for investments in commercial office buildings and factories should also focus on broader climate impact requirements (e.g., resilience, transport, buildings materials etc)
- ✓ Note that all construction projects can have negative local environmental impacts and that these should be minimized.

Climate targets

(GBP category: “Renewable Energy”)



- Investments in equipment (including Manufacturing Engineering relating thereto) which relates to the generation of renewable energy
- Investments in equipment (including Manufacturing Engineering relating thereto) which relates to replacement or conversion of equipment that uses fossil fuels to equipment which uses renewable energy.
- E.g., geo-thermal energy, wind power, solid or gas bio-based energy, solar panels (collector) or photovoltaic panels

Dark Green

- ✓ Solar and wind power is key to a low-carbon transition
- ✓ Potential concerns regarding supply-chain emissions of energy generation technology
- ✓ Consider potential emissions and climate resilience for biogas and geothermal projects
- ✓ All construction projects can have adverse local environmental impacts

Table 1. Eligible project categorie



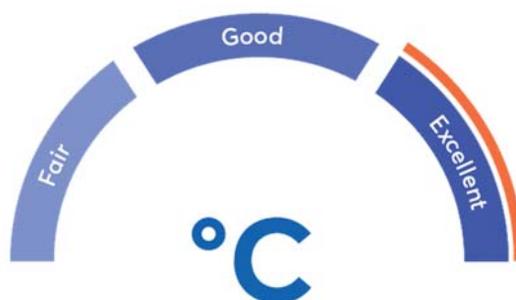
Background

Global electricity use by household appliances and other small plug loads has been growing by nearly 2% a year since 2010. While major household appliances' electricity demand is decreasing slightly due to energy efficiency improvements globally, small plug loads' demand (small AC plug products) cancels out the savings calling for ramped up improvements in energy efficiency.² According to the IEA, the total energy consumption would have been nearly 20% higher today compared to 2000 without the energy efficiency improvements. The IEA's Innovation Tracking Framework that identifies key long-term innovation gaps lists Electrolux as one of the key R&D initiatives to improve efficiency within appliances³. According to the IPCC, in addition to energy efficiency measures, emission efficiency and material use efficiency as well as recycling and product service efficiency in combination with demand reduction measures are required for a successful transition.⁴

Governance Assessment

Four aspects are studied when assessing Electrolux's governance procedures: 1) the policies and goals of relevance to the Green Bond Framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent.

Electrolux has appropriate, relevant and Science Based Targets in place that include Scope 3 emissions. The issuer plans to implement TCFD processes as of 2020, but is currently not conducting any scenario stress testing or general climate resilience screening. Projects are selected in consensus, under involvement of internal environmental experts under broader considerations of project impact and in alignment with the companies' overall climate targets. Expected and actual environmental impacts will be reported based on the published list of impact metrics and will be verified externally. The overall assessment of Electrolux's governance structure and processes gives it a rating of **Excellent**.



Strengths

Governance

Electrolux has a track record of working on continuous sustainability improvements for the last decades and has strong sustainability competence. It is a clear strength that Electrolux has ambitious Science Based Targets (SBTs) in place that cover not only Scope 1 and 2 emissions, but also Scope 3, emissions related to the end-user phase of their appliances and the objective of using 100% renewable electricity by 2025.

Electrolux endorses the United Nations Global Compact (UNGC), UNGC Water Mandate and reports in accordance with the United Nations Guiding Principles on Business and Human Rights reporting framework. In addition, Electrolux has clear focus areas within the Sustainable Development Goals.

² <https://www.iea.org/tcep/buildings/appliances/>

³ <https://www.iea.org/tcep/innovation/>

⁴ https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter10.pdf



Project Categories

Electrolux includes R&D activities in three out of five of its project categories as eligible project types. This is a strength as it contributes to the development of new or better approaches for climate resilient and low-carbon solutions. This is in line with Electrolux's Science Based Targets, which require substantial reductions in emissions and increased recycling. By implementing cutting-edge sustainability solutions, Electrolux contributes to market transitions and innovation.

It is a strength that the proceeds of Electrolux's Green Bond Framework will be used to divert any waste from landfills. Through Electrolux's focus on recycling processes, Electrolux contributes to the development of the circular economy. Efficient utilization of resources is a vital component of the transition to low-carbon and climate resilient growth. The issuer informed us that Life-Cycle-Analyses (LCA) is conducted to analyze the environmental impact of transporting recycled materials (such as plastics) to point of usage.

Weaknesses

We find no material weaknesses in Electrolux's Green Bond Framework.

Pitfalls

Governance

Despite publishing a list of impact metrics and having detailed descriptions of methodologies to measure impacts, Electrolux informed us that they do not intend to make impact assessment methodologies publicly available. However, third-party external reviewers of impacts will be able to assess the impact measurement methodologies for all projects, incl. those with fossil fuel involvement. CICERO Green encourages the issuer to publish the methodology in order to facilitate building a common understanding of impact measurements.

Project Categories

Electrolux does not exclude financing or refinancing of fossil fuel related infrastructure, such as enameling furnaces. Despite limiting investments by additional eligibility criteria as defined in section 2 these project categories bear the risk of locking in emissions. Electrolux should be aware of such lock-in effects and possibly avoid Green Bond funding of projects where the risks of locking in emissions is particularly high. The risk of locking in emissions is mitigated by measuring the extend of fossil fuel involvement and disclosure in Electrolux's impact report as well as Electrolux's environmental competence and approved Science Based Targets.

CICERO Green notes that investments in some categories may include construction of facilities and other supporting infrastructure. Construction materials like cement, and equipment for construction are likely to be fossil fuel intensive. CICERO Green encourages Electrolux to utilize electric fleets of vehicles and equipment, and to consider alternatives to emissions intensive construction materials.

Electrolux plans to invest in manufacturing equipment and tooling related to specific products with improved energy or water efficiency. As eligible assets are required to have an energy efficiency that is at least 15% better compared to the average of current products produced for a specific market, we note that there are no water efficiency thresholds included. According to Electrolux, a similar common water efficiency threshold is not workable to set due to differences in washing technologies in different markets. However, this can manifest as a clear pitfall. The water efficiency targets for Electrolux's production plants show commitment towards the issue, but are not directly linked to water efficiency improvements of the products.



The issuer plans to finance or refinance new or renovated commercial buildings with at least 30% energy efficiency improvements. Where building codes are applicable, the building codes determine the 30% improvement which can lead to varying ambition levels of energy efficiency. The framework requires commercial buildings to meet LEED GOLD criteria, where no buildings codes exist. Factories and warehouses require at least a 20% improvement in energy efficiency. The Green Bond Framework would benefit from clearer requirements that best environmental technology is used in eligible building projects and, e.g., exclude fossil fuel related heating sources. In a low carbon 2050 perspective the energy performance of buildings is expected to be improved with passive house technology becoming mainstream and the energy performance of existing buildings greatly improved through refurbishments. This includes broader environmental considerations and resilience screenings. Electrolux informed us that due to regionally varying conditions, there are no additional general requirements or screening for access to public transportation, physical risk resilience or fossil fuel heating technology of buildings. The issuer pointed out that risk resilience screening will be part of the TCFD implementation and that fossil fuel components will be reported separately. The ambitious overall company targets and the high level of transparency partly mitigate the pitfalls in this category.

Electrolux plans to allocate Green Bond proceeds to R&D as well as processing equipment that is intended to replace harmful HFCs. Substitution with foam blowing agents and refrigerants of less than 15 CO₂eq is state of the art and cutting edge technology. While the replacement of HFCs is urgently needed, a remaining threshold for refrigerants or foam blowing agents with greenhouse warming potential (GWP) of less than 15 CO₂eq can still have environmental impact as greenhouse gases if the gas is not recycled. The issuer informed us that the foam blowing or refrigerant gases only play a minor role compared to the overall greenhouse gas emission of the product and that improvements in efficiency of the gases have a substantial effect on overall product efficiency. The application of EU standard globally is a possibility to drive global markets into a more climate friendly direction.

With regards to the renewable energy project category, CICERO Green notes that Electrolux can also finance or refinance geothermal or bio-based energy production. The framework requires any investment proposal in geothermal and bio-based energy installations to be subject to a due diligence process in order to avoid potential negative environmental aspects, e.g. local water quality, pollutants from geothermal fluids, emissions of non-condensable gases. However, geothermal energy can be a significant source of emissions, with some plants generating higher GHG emissions than fossil fuel equivalents. In order to be considered net environmentally positive, standards call for new and existing geothermal projects to have direct emissions of less than 100g CO₂/kwh⁵. Bio-based energy solutions could require feedstock and local sourcing considerations.

Impacts beyond the project boundary

Due to the complexity of how socio-economic activities impact the climate, a specific project is likely to have interactions with the broader community beyond the project borders. These interactions may or may not be climate-friendly, and, thus, need to be considered with regards to the net impact of climate-related investments.

Rebound effects

Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced there will be incentives to do more of the same activity. From the project categories in Table 1, an example is improved energy efficiency manufacturing equipment, which generally could lead to an overall increase in products sold and Scope 3 emissions. Electrolux is aware of such effects and aims to avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

⁵ <https://www.climatebonds.net/standard/geothermal>



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
0	Electrolux Green Bond Framework March, 2019	Electrolux's Green Bond Framework
1	Electrolux Annual Report 2017 and 2018	https://www.electroluxgroup.com/en/annual-reports-27641/
2	Electrolux Sustainability Report 2017	https://www.electroluxgroup.com/en/category/sustainability/sustainability-reports/
3	Electrolux Sustainability in Brief 2017	Summary of the Sustainability Report 2017 (https://www.electroluxgroup.com/en/electrolux-sustainability-report-2017-24501/)
4	Electrolux Science Based Targets – Target Submission Form	Electrolux's targets submitted to Science Based Targets initiative
5	Calculation methods for Eligible Assets	Methods to calculate eligibility of assets for the project categories “product performance and efficiency improvements” and “achieve more with less”
6	CDP Climate Change and Water Reports for the years 2017 and 2018	Disclosure of climate change and water related information for 2017 and 2018 (https://www.cdp.net/en/responses?utf8=%E2%9C%93&queries%5Bname%5D=electrolux)
7	UN Global Compact Advanced Level of Reporting and Guiding Principles Reporting Framework	Documents detailing Electrolux's additional reporting standards (https://www.electroluxgroup.com/sustainabilityreports/2017/en/reporting-framework/the-un-guiding-principles-reporting-framework/)



Appendix 2: About CICERO Shades of Green

CICERO Shades of Green (CICERO Green) is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).

