



Otovo ASA

Green Finance Second Opinion

18 October 2022

Executive Summary

Otovo ASA (Otovo), founded in 2016 and headquartered in Oslo, Norway, is a European marketplace that connects consumers wanting to add batteries or solar panels to their homes with installer companies looking to fill their order book with projects. The solar installations are offered both through direct payment and subscription. Otovo is currently operating in ten countries: Norway, Sweden, France, Spain, Poland, Italy, Germany, Austria, Portugal and the UK. Before year-end 2022, Otovo aims at launching operations in the Netherlands, Belgium, and Switzerland.

Use of proceeds under the framework is for renewable energy and energy services. The eligible assets are defined as investments for the acquisition of solar panels and batteries by European Distributed Energy Assets Midco AS (EDEA) - a wholly owned subsidiary and the financing vehicle of the subscription business - from Otovo for leasing purposes.

We rate the framework **CICERO Dark Green** and give it a governance score of **Good**. Otovo is well aware and working continuously to map and mitigate physical climate risks as well as social risks in its supply chain. However, the company's Sustainability Policy and Code of Conduct for Suppliers are newly adopted and in the process of being implemented. The company will consider reporting in line with the TCFD recommendations in future annual reports.

Strengths

Renewable energy, and solar power in particular, is key to the green transition to a low carbon energy future. By removing barriers to the implementation of solar power for residential house owners, Otovo is contributing substantially to this transition. By focusing exclusively on residential solar, Otovo negates the local environmental harm (biodiversity, landscape etc.) large-scale renewable energy assets may cause.

Pitfalls

In estimating greenhouse gas emissions and CO₂ emissions avoided, Otovo uses a grid factor based on the European Attribute Mix. The European Attribute Mix (EAM) is the European pool of surplus attributes, i.e., all electricity consumption across Europe that is not sold with a guarantee of origin. The European Attribute Mix for 2021 is 9.91 % renewable, 24.37% nuclear and 65.71% fossil. We note that this will differ from real grid factors in several countries and may give a high estimate of emissions avoided by installing solar panels. Otovo argues that EAM is the grid mix that is replaced by the electricity produced by Otovo customers' solar installations. The approach allows for easy accounting and addition of net impact of the solar energy produced in all Otovo markets.

SHADES OF GREEN



°CICERO
Dark Green

GOVERNANCE ASSESSMENT



GREEN BOND AND LOAN PRINCIPLES

Based on this review, this framework is found aligned with the principles.



While solar energy and energy storage systems are considered to have positive climate mitigation and resilience impacts, both solar PV cells and batteries can be energy-intensive to produce, transport and install/remove, and are exposed to social risks. As such, value chain considerations are critical. Such issues are generally well considered in Otovo's Sustainability Policy, which includes considering environmental footprints related to hardware manufacturing, and Code of Conduct for Suppliers, entailing a commitment to follow up with suppliers on compliance.

Specific, quantitative environmental targets, set for various time horizons, allow for an assessment of ambition and easier measurement of progress. We encourage Otovo to set short and medium-term climate targets, noting it would be particularly well served by including Scope 3 emissions in these targets, as well as measurable commitments in respect of other supply chain issues.

EU Taxonomy

CICERO Shades of Green has carried out a full taxonomy assessment, assessing alignment of financed taxonomy activities against the technical screening criteria for mitigation and “Do No Significant Harm”, as well as the minimum social safeguards. The activity most relevant is the taxonomy activity 7.6: Installation, maintenance and repair of renewable energy technologies. We find that Otovo is likely aligned with the technical screening criteria in the EU taxonomy, but we note that Otovo appears to be likely partially aligned with the relevant DNSH-criteria (climate adaptation). While initial screening for physical climate risks has been carried out, it remains that the climate projections and assessment of impacts are based on “best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications, and open source or paying models”. Furthermore, CICERO Shades of Green concludes that Otovo appears to mainly fulfil the minimum social safeguards of the EU taxonomy. The most relevant risks for Otovo are related to sourcing of primary materials and workers' right in countries with varying levels of legislation in place to protect people's rights.



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1 Otovo's environmental management and green finance framework

Company description

Otovo ASA (Otovo), headquartered in Oslo, Norway, is a European marketplace that connects consumers wanting to add batteries or solar panels to their homes with installer companies looking to fill their order book with projects. By entering their home address, customers obtain proposed design and prices for solar installations in real-time, based on automatic and binding offers from Otovo's network of local installers. The solar installations are offered both through direct payment and subscription. The solar installation's lifetime is expected to be 30 years or more.

Founded in 2016, Otovo has rapidly scaled its platform beyond the Nordics, and it is currently operating in ten countries: Norway, Sweden, France, Spain, Poland, Italy, Germany, Austria, Portugal, and the UK. Before year-end 2022, Otovo aims at launching operations also in the Netherlands, Belgium, and Switzerland.

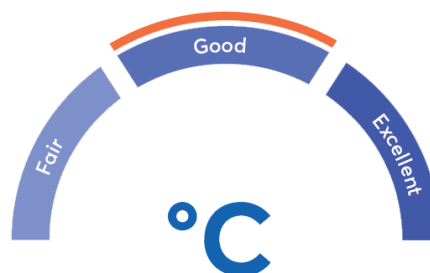
Subscription customers enter into long term contracts with Otovo's wholly owned subsidiary, European Distributed Energy Assets Midco AS (EDEA), which is the financing vehicle of the subscription business. Specifically, EDEA will purchase solar systems and batteries installed at end customers' homes from Otovo and enter subscription agreements with these customers. EDEA is financed through debt and equity and will therefore be the primary issuer of debt tied to the framework.

Governance assessment

Otovo, as a pure play company, does not have quantitative environmental targets, including targets for scope 3 emissions. Nonetheless, it does have a solid focus on supply chain impacts, even though certain aspect could be more concrete. For example, under its newly adopted Sustainability Policy (which is in the process of being implemented) it is stated that Otovo aims to minimize material and energy use in the activities and operations; develop software to eliminate unnecessary resource use and optimize installation transport logistics; contribute to increased circularity in the solar value chain; consider the environmental footprint related to hardware manufacturing and transport when making decisions on what to distribute and promote through their platform; and offset emissions Otovo is not able to reduce.

Climate risks have been assessed and the company will consider reporting in line with the TCFD recommendations in future annual reports. In addition, the company considers engaging external expertise to perform a quantitative analysis of the physical climate risk. Reporting is good and social risk assessment is excellent.

The overall assessment of Otovo's governance structure and processes gives it a rating of **Good**.





Sector risk exposure

Physical climate risks. Some locations in the north may face heavier snow loads during winter. This will reduce the efficiency of roof-top solar panels and can in extreme cases cause damages. Increasing temperatures can also reduce the efficiency of solar panels.

Transition risks. Due to the profound changes needed to limit global warming to 2°C, transition risk affects all sectors. However, stricter climate policies are expected to favour renewable energy in general and solar power in particular.

Environmental risks. Photovoltaic panel production is resource-intensive, requiring substantial amounts of water and industrial materials. Hydrofluoric acid and sodium hydroxides are both used in the solar panel manufacturing process. These both require strict regulations regarding the treatment and disposal of toxic wastewater. Studies show that silicon particles are released into the environment during the production process, causing Silicosis in people that are known to have come in contact with the particles. Solar panels are predominantly made out of glass but contain Cadmium and Lead, which are classified as carcinogenic. To recycle these components, additional costs must be allocated to remove impurities.

(Source: <https://honuaolabioenergy.com/environmental-impact-of-solar-panel-manufacturing/>)

Social risks. There is an ongoing concern regarding breaches of fundamental human rights for workers in the Xinjiang region of China, home to large chemical industries, including the production of polysilicon for use in the global value chain of silicon solar panels, accounting for nearly 50% of the supply globally. Another risk is lack of traceability of product components and raw materials used in the solar power industry. Markets and practices surrounding the extraction and refining of battery inputs, like cobalt, as well as product assembly, are complex and it is difficult to ascertain their origin.

Environmental strategies and policies

Otovo is committed to track, measure and report greenhouse gas (GHG) emissions in scope 1-3 in accordance with the standards of the GHG protocol. Numbers are reported in metric tonnes of CO₂-equivalents (tCO₂e). Otovo's current emissions model was developed in 2019 and is based on the GHG Protocol Corporate Standard. Conversion factors are collected from the UK Government and updated annually. The grid factor used is the European Attribute Mix¹. The issuer states that the approach allows for easy accounting and addition of net impact of the solar energy produced in all Otovo markets.

In 2021, Otovo's entire value chain in Norway, Sweden, France, Spain, Italy and Poland, plus a small contribution from preparations for launch in Germany, resulted in direct and indirect emissions of 22,918 tCO₂e.² There is no time series for these data, nor do Otovo have a quantitative target. Otovo does not own or control own resources with emissions, hence scope 1 is zero. Scope 2 emissions are related to electricity consumption in the offices, while scope 3 covers all indirect emissions related to Otovo's purchases of equipment and tools, manufacturing and shipping of hardware used for solar installations, installation activities, website traffic, and employee activities such as travelling and commuting. 98% of the emissions in Otovo's entire value chain originate from manufacturing and shipping of hardware, of which approximately 80% stems from the solar panels and their precursors. Production of polysilicon and ingots used for silicon solar cells is energy intensive and therefore constitutes the biggest share of indirect carbon emissions. The rest relates to Otovo's own operations and

¹ The European Attribute Mix (EAM) is the European pool of surplus attributes, i.e., all electricity consumption across Europe that is not sold with a guarantee of origin. The European Attribute Mix for 2021 is 9.91 % renewable, 24.37% nuclear and 65.71% fossil according to <https://www.aib-net.org/facts/european-residual-mix>.

² For 2021 the carbon footprint of the entire value chain corresponded to 8.7% of the CO₂ emissions avoided.



transportation among their installer companies. Otovo has request information on life cycle emissions from their suppliers, but few manufacturers have Environmental Product Declarations (EPDs) or disclosed life cycle analyses (LCAs) for their products. Otovo therefore use estimates for panels from China based on the energy consumption related to manufacturing and the Chinese grid mix.

Otovo has decided to offset emissions directly related to Otovo's operations and the employees' activities by purchasing carbon credits. This includes office energy consumption (scope 2) and employee commuting, business travel, website emissions, electronic office supplies and office waste (scope 3). In 2021 Otovo offset 167 tCO₂e through Gold Standard.³

In 2021 Otovo installed 22.5 MWp of solar capacity. Over the expected lifetime (30 years), according to Otovo, these installations yield on average 968 kWh/kWp annually, ranging from 747 kWh/kWp in Norway to 1,388 kWh/kWp in Spain. By replacing grid electricity, these systems will avoid emissions of 263,674 tCO₂e through their lifetime with the *current* grid mix. Net impact is the difference between caused and avoided emissions, which in 2021 amounted to -240,759 tCO₂e. Another way of illustrating the positive impact of solar energy is to consider the carbon payback time. The term refers to the time it takes for the negative environmental impact of deploying the system, from manufacturing to installation, to be offset by the positive environmental impact of clean energy production. For the systems delivered in 2021, the average carbon payback time is 2.6 years, according to Otovo.

Otovo appears well aware of physical and transitional climate risks and also has a clear understanding of mitigating actions towards these risks, see Appendix 2 for details.

Otovo is committed to conduct their business in line with international frameworks and conventions on fundamental principles and rights in working life and other similar guidelines for the environment and climate, including: the Universal Declaration of Human Rights (UDHR), International Labour Organisations' (ILO) conventions, the UN Guiding Principles on Business and Human Rights (UNGPR, 2011) and the UN Sustainability Goals (SDG). Otovo is obliged to fulfil the requirements of the Norwegian Transparency Act by conducting due diligence assessments, and to account for these publicly, in line with OECD Due Diligence Guidance for Responsible Business Conduct. As of February 2022, Otovo is a member of the UN Global Compact. They support the ten principles on human rights, labour, environment and anti-corruption, and are stating that they are committed to make them a part of their strategy, culture and day to day operations.⁴ See Appendix 2 for further details.

Otovo plays a role in ensuring correct collection and handling at the end of life of their product. Importers of panels/hardware to Europe (and manufacturers in Europe) pays a fee to a WEEE compliant company, earmarked for handling and recycling at end of life.⁵

Otovo has completed an initial scoping of risk related to actual and potential breaches to human rights and worker rights, as part of aligning with the Norwegian transparency act, and in accordance with the OECD due diligence guidelines. Such issuers are considered in its new adopted Code of Conduct for Suppliers (which is in the process of being implemented).

³ <https://www.goldstandard.org>

⁴ The environmental principles are:

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

⁵ https://environment.ec.europa.eu/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en



Green finance framework

Based on this review, this framework is found to be aligned with the Green Bond Principles and Green Loan Principles. For details on the issuer's framework, please refer to the green finance framework dated October 2022.

Use of proceeds

For a description of the framework's use of proceeds criteria, and an assessment of the categories' environmental impacts and risks, please refer to section 2.

Selection

A dedicated Green Finance Committee (GFC) has been established to create and oversee compliance with the green financing framework. The committee will also be responsible for the evaluation and selection of green assets as set out in section 2. The committee consists of the Head of Sustainability (chair with environmental competence), the General Counsel and the CFO. As Otovo only has assets that fall within the eligible categories, they have not found the need to define a veto power for selection. The GFC decides on the inclusion of new asset categories.

Management of proceeds

The CFO and Treasury Department are responsible for keeping an updated register of green eligible assets. The proceeds from Otovo's green finance instruments will be managed through a portfolio approach. The net proceeds will be used for financing and refinancing of green eligible assets as defined in section 2.

The Finance Department will endeavour to ensure that the value of green eligible assets at all times exceed the total amount of green finance instruments outstanding. If a green eligible asset already funded by green finance instruments is sold, or for other reasons loses its eligibility in line with the criteria in the framework, Otovo will strive to replace such asset by another qualifying green eligible asset.

Any unallocated proceeds temporarily held by Otovo will be placed in the company's ordinary bank account or short-term money markets until deployed.

Reporting

To enable investors, lenders and other stakeholders to follow the development of the assets funded by green finance instruments, a green finance report will be made available on Otovo's website. The Head of Sustainability has the overall responsibility for the reporting while the Finance Department will provide the necessary data. The green finance report will include an allocation report and an impact report and be published annually as long as there are green finance instruments outstanding with a first report expected in 2023. For the avoidance of doubt, both reports will centre on EDEA.

Allocation of proceeds reporting will cover: summary of main activities; total amount of green finance instruments outstanding and split breakdown per instrument; total value of the ingoing and outgoing portfolio of green eligible assets; and share of unallocated proceeds (if any).

The impact report aims to disclose the environmental impact of the green eligible assets financed under the framework. Impact reporting will, to some extent, be aggregated and depending on data availability, calculations will be made on a best intention basis. The impact assessment may, where applicable, be based on the metrics listed below. Impact reporting covers all assets financed by green finance instruments.

- Number of customers with installed systems
- MW of solar capacity installed
- MW and MWh of energy storage capacity installed



- kWh generated by Otovo's systems and resulting metric tons of CO₂ avoided

Allocation of proceeds will be subject to an annual review by an external party/verifier, whose report will be published on the company's website.

2 Assessment of Otovo's green finance framework

The eligible projects under Otovo's green finance framework are shaded based on their environmental impacts and risks, based on the "Shades of Green" methodology.

Shading of eligible projects under Otovo's green finance framework

- For each green financing under the framework, EDEA intends to allocate an amount at least equal to the net proceeds to finance or refinance, in whole or in part, existing or new assets (each a "green eligible asset") in the form of investments and expenditures by EDEA, and its subsidiaries in accordance with the criteria listed in the table below. The financing will be almost 100% for capital expenditures. The share of refinancing would likely be of the order 10-15% with a look-back period to 1 January 2022.
- The green eligible assets will include assets for which EDEA has commenced operations or placed-in-service prior to the applicable green financing, unless otherwise noted in the respective financing documents.
- The green eligible assets are defined as investments that promote the green energy transition, such as the acquisition of solar panels and batteries by EDEA from Otovo for leasing purposes, as described in the table below.
- Otovo is not involved in fossil fuel energy production, storing or transportation, nuclear generation, weapons and defence industries, potentially harmful resource extraction, gambling, tobacco, or other drugs. Therefore, net proceeds from Otovo's green finance instruments will not be used to finance any of these. Also, expenditures will not go to fossil fuel maintenance or installation vehicles. However, Otovo purchase complete installations, including the cost of transport to the installation site, from our installation partners. Otovo does not directly own or control vehicles.



Category	Eligible project types	Assessment of alignment with EU taxonomy's technical criteria for mitigation and DNSH ⁶	Green Shading and considerations
Renewable energy and energy services 	Expenditures related to the purchase of solar systems at end-customers' houses, with simultaneous conclusion of a subscription agreement with the end-customer. Expenditures related to the batteries in end-customers' houses, with simultaneous conclusion of a subscription agreement with the end-customer.	7.6 Installation, maintenance and repair of renewable energy technologies: Likely aligned with mitigation criteria, likely partly aligned with DNSH.	Dark Green ✓ The issuer states that the main expenditures expected are turnkey solar and battery installations (both hardware and installation work). The vast majority of expenditures will be related to solar systems, but the share of batteries is expected to increase over time. ✓ Renewable energy, and solar power in particular, is key to the green transition to a low carbon energy future. By removing barriers to the implementation of solar power for residential house owners, Otovo is contributing substantially to this transition. ✓ By focusing exclusively on residential solar, Otovo negates the local environmental harm (biodiversity, landscape etc.) large-scale renewable energy assets may cause. ✓ Energy storage solutions can help mitigate the volatility of solar systems, including against climate risks e.g., extreme changes in weather. ✓ We note that production of both solar panels and batteries might entail local environmental and social risks. Also, consideration of circular economy principles become of increased importance.

Table 1. Eligible project categories

⁶ [taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf \(europa.eu\)](https://eur-lex.europa.eu/eli/reg/2021/2800/oj/1)



EU Taxonomy

The EU Taxonomy Regulation⁷ is a classification system setting criteria for economic activities to be defined as environmentally sustainable. The regulation defines six environmental objectives. To be considered sustainable, an activity must substantially contribute to at least one of the six environmental objectives⁸ without harming the other objectives (“Do No Significant Harm”), while complying with minimum social safeguards⁹. So far, the EU has adopted delegated acts under the regulation that set out the technical screening criteria for the climate mitigation and adaptation objectives, respectively. The DNSH-criteria are developed to make sure that progress against some objectives is not made at the expense of others and recognizes the relationships between different environmental objectives.

CICERO Shades of Green has assessed eligible projects for Otovo’s framework against the mitigation thresholds, the DNSH criteria for relevant activities in the delegated act adopted in June 2021 (Annex 1) and the minimum social safeguards. Where sufficient information was not provided by the issuer, and information was not easily accessible through searching other public available sources, CICERO Shades of Green has not been able to assess alignment.

CICERO Shades of Green assesses that the relevant taxonomy activity for Otovo, as listed in table 1 and Appendix 2, are likely aligned with the mitigation criteria in the EU taxonomy.

Otovo appears to be likely partially aligned with the relevant DNSH-criteria. While initial screening for physical climate risks has been carried out it remains that the climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications, and open source or paying models.

Alignment with minimum social safeguards

To qualify as a sustainable activity under the EU regulation certain minimum social safeguards must be complied with. CICERO Shades of Green has assessed the company’s social safeguards with a focus on human and labour rights. We take the sectoral, regional and judicial context into account and focus on the risks likely to be the most material social risks. CICERO Shades of Green concludes that Otovo appears to mainly fulfil the minimum social safeguards. The most relevant risks for Otovo are related to sourcing of primary materials and workers’ right in countries with varying levels of legislation in place to protect people’s rights.

⁷ Regulation EU 2020/852 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852&from=EN>

⁸ The six environmental objectives as defined in the proposed Regulation are: (1) climate change mitigation; (2) climate change adaptation; (3) sustainable use and protection of water and marine resources; (4) transition to a circular economy, waste prevention and recycling; (5) pollution prevention and control; (6) protection of healthy ecosystems.

⁹ Alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organisation’s (‘ILO’) declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights.



3 Terms and methodology

This note provides CICERO Shades of Green's second opinion of the client's framework dated October 2022. This second opinion remains relevant to all green bonds and/or loans 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 Shades of 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 client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

'Shades of Green' methodology

CICERO Shades of 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. 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:

Shading	Examples
 Dark Green is allocated to projects and solutions that correspond to the long-term vision of a low-carbon and climate resilient future.	 Solar power plants
 Medium Green is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	 Energy efficient buildings
 Light Green is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	 Hybrid road vehicles

The "Shades of Green" methodology considers the strengths, weaknesses and pitfalls of the project categories and their criteria. 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, including potential macro-level impacts of investment projects.

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, key governance aspects that can influence the implementation of the green finance are carefully considered and reflected in the overall shading. CICERO Shades of Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green finance 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. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



Assessment of alignment with Green Bond Principles

CICERO Shades of Green assesses alignment with the International Capital Markets' Association's (ICMA) Green Bond Principles. We review whether the framework is in line with the four core components of the GBP (use of proceeds, selection, management of proceeds and reporting). We assess whether project categories have clear environmental benefits with defined eligibility criteria. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed. The selection process is a key governance factor to consider in CICERO Shads of Green's assessment. CICERO Shades of Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Shades of Green places on the selection process. CICERO Shades of Green assesses whether net proceeds or an equivalent amount are tracked by the issuer in an appropriate manner and provides transparency on the intended types of temporary placement for unallocated proceeds. Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs.

EU taxonomy assessment

CICERO Shades of Green has assessed the activities against the EU taxonomy's technical screening criteria, including the do-no-significant-harm (DNSH) criteria. In addition, we have assessed alignment with the minimum social safeguards, as described in article 18 of the EU taxonomy. To assess activities' taxonomy alignment, CICERO Green has reviewed the issuer's green finance framework, other supporting documents provided by the issuer, and written responses to questions on each asset's taxonomy alignment.



Appendix 1:

Referenced Documents List

Document Number	Document Name	Description
1	2022-10-13 - Project Orlando - Green finance framework - v2 (1)	Otovo's Green financing framework, dated October 2022
2	2022-03-24-annual-report-2021	Otovo's Annual report 2021
3	15 - Sustainability Policy (2022-10-17)	Otovo's Sustainability policy
4	3. Otovo Code of Conduct ENG_(final)	Otovo's Code of conduct for suppliers and business partners



Appendix 2: EU Taxonomy criteria and alignment

Complete details of the EU taxonomy criteria are given in [taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf \(europa.eu\)](#)

7.6 Installation, maintenance, and repair of renewable energy technologies

Framework activity	Renewable energy and energy services		
Taxonomy activity	Installation, maintenance, and repair of renewable energy technologies (The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27 or C28)		
	EU Technical mitigation criteria	Comments on alignment	Alignment
Mitigation criteria	- Substantial contribution to climate change mitigation The activity consists in one of the following individual measures, if installed on-site as technical building systems: a) installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment; b) installation, maintenance and repair of solar hot water panels and the ancillary technical equipment; c) installation, maintenance, repair and upgrade of heat pumps contributing to the targets for renewable energy in heat and cool in accordance with Directive (EU) 2018/2001 and the ancillary technical equipment; d) installation, maintenance and repair of wind turbines and the ancillary technical equipment; e) installation, maintenance and repair of solar transpired collectors and the ancillary technical equipment;	<u>Information provided by the issuer</u> This category will mainly support the instalment of on-site roof top solar. Otovo's business model consists in designing and installing solar panels and batteries at private homeowners properties. The fact that Otovo uses subcontractors when conducting the installation work, does, in our view, not disqualify the activity from this category.	Likely aligned.



	f) installation, maintenance and repair of thermal or electric energy storage units and the ancillary technical equipment; g) installation, maintenance and repair of high efficiency micro CHP (combined heat and power) plant; h) installation, maintenance and repair of heat exchanger/recovery systems.		
	EU Taxonomy DNSH-criteria	Comments on alignment	Alignment
Climate change adaptation	The physical climate risks that are material to the activity have been identified (chronic and acute, related to temperature, wind, water, and soil) by performing a robust climate risk and vulnerability assessment with the following steps¹⁰: (a) screening of the activity to identify which physical climate risks from the list in Section II of the taxonomy Appendix may affect the performance of the economic activity during its expected lifetime; (b) where the activity is assessed to be exposed to physical climate risks, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity; (c) an assessment of adaptation solutions that can reduce the identified physical climate risk. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications, and open source or paying models.	<u>Information provided by the issuer</u> An initial screening of physical climate risks material to Otovo's activities has been carried out. We have further considered and initiated a project for using consulting competence (Multiconsult) in carrying out a qualitative analysis in accordance with climate models given in the IPCC reports. Climate risk to Solar System Installations: When assessing the impact of acute and chronic climate hazards on any solar installation, we consider effects on both the electrical system and its power generation abilities and the mechanical system, including the thresholds of mounting equipment and panels to withstand stress. In addition, some installations may be located in areas with risk to the building structure in general, indirectly affecting the installations. <u>Wind-related</u> Increased wind loads (primarily acute) may increase risk of: - failure of mounting system/fixation	Likely partially aligned.

¹⁰ The Taxonomy is referring to Appendix A in the Taxonomy Annex 1.



	For existing activities and new activities using existing physical assets, the economic operator implements physical and non-physical solutions ('adaptation solutions'), over a period of time of up to five years, that reduce the most important identified physical climate risks that are material to that activity. An adaptation plan for the implementation of those solutions is drawn up accordingly. For new activities and existing activities using newly-built physical assets, the economic operator integrates the adaptation solutions that reduce the most important identified physical climate risks that are material to that activity at the time of design and construction and has implemented them before the start of operations. The adaptation solutions implemented do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; are consistent with local, sectoral, regional or national adaptation strategies and plans; and consider the use of nature-based solutions or rely on blue or green infrastructure to the extent possible.	- breakage/cracks in panels (glass) due to moving objects hitting panels <i>Mitigative measures: Mechanical engineering of the mounting system (carried out by our installation partners, supported by software) considers historical climate data on each installation location and includes a significant threshold margin.</i> <u>Water-related</u> Increased snow loads, may increase risk of: failure of mounting systems/fixation breakage/cracks in panels due to increased loads, frost blast in frames etc. reduced energy production due to increased duration of snow covering <i>Mitigative measures: Mechanical engineering of the mounting system (carried out by our installation partners, supported by software) considers historical climate data on each installation location and includes a significant threshold margin.</i> In addition; sea level rise may increase risk to installations on buildings in coastal areas. See considerations under "Temperature-related". <u>Temperature-related:</u> Increased temperatures may increase risk of: Reduced power generation during heat waves (acute)	
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		<i>Mitigative measures/considerations: Panels are mounted with suitable distance/clearing from the roof surface to allow airflow cooling. Inverters are never installed in direct sunlight, rather on shaded outside, or inside with sufficient clearance and air circulation.</i> <u>Solid mass-related:</u> Risks to buildings in areas prone to landslides and coastal erosion may indirectly affect the solar installations. <i>Mitigative measures/considerations: While posing a risk to the individual installations, Otovo considers this a minor risk due to the distributed nature of our assets.</i> Climate risk to Supply of Hardware Most physical climate hazards may affect the supply of solar hardware, where the majority of hardware is currently coming from Asia. In particular, any acute climate hazards may (temporarily) reduce supply by affecting: manufacturing facilities shipping industry transport industry (across Europe) In general, any climate hazard may affect: geopolitical climate - decreased priority or increased cost of supply to Europe <i>Mitigative measures/considerations: Otovo works actively to mitigate risks related to supply of hardware by partnerships with</i>	
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		<i>various hardware distributors/vendors in Europe, having a distributed model with various sources of supply through our installation partner ecosystem, and a diversified hardware whitelist. When available in the market Otovo will promote hardware manufactured in Europe.</i> Climate risk to Installation Activities Acute climate hazards may impact installation ability in affected areas. Chronic climate hazards may reduce installation capacity due to worsened working environments outside. <i>Mitigative measures/considerations: Due to the geographic distribution of Otovo's projects, acute hazards can be mitigated by temporarily carrying out installation activities in other areas.</i>	
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Minimum social safeguards

Minimum social safeguards		
No.	Questions	Answers (to be filled in by the issuer)
1	Does your company have a policy or made a commitment on human rights (workers' rights are here considered included in human rights)? Signed by top management?	Yes, Otovo has made a commitment to protect human rights through our company governance policies and procedures, including our: - Sustainability Policy - Code of Conduct for Suppliers and Business Partners - Otovo's Human Rights and Transparency Policy (internal) In addition, Otovo is a member of the UN Global Compact, with reporting on progress from 2023 and are required to fulfil the Norwegian Transparency Act.
2	Do you integrate the OECD social risk due diligence process? 1. Do you map human rights risks in your business activities and when entering into partnerships or projects? 2. Is someone in your company in charge and responsible for the risk mapping and mitigation of risks related to human rights? 3. Do you evaluate whether identified risks are successfully managed? How? 4. Do you issue an integrated report or CSR-report dealing with human rights risks and how you mitigate these?	Yes, Otovo will conduct due diligence assessments in line with the OECD's Due Diligence Guidelines for Responsible Business Conduct and in accordance with the Norwegian Transparency Act. This process is initiated by an initial scoping of risk and embedding responsibility in our organization. The process is described in our internal Human Rights and Transparency Policy. The report will be made accessible on Otovo's website and published annually within June 30th, starting in 2023, for the reporting year 2022.
3	What do you consider are your most salient human rights risks? Please explain why.	PV Modules: Forced labour practices in the solar supply chain There is an ongoing concern regarding breaches of fundamental human rights for workers in the Xinjiang region of China. Xinjiang is home to large chemical industries, including the production of polysilicon for use in the global value chain of silicon solar panels, accounting nearly 50% of the supply globally. We recognize that there's a risk of potential human rights abuses in our supply chain. The issue of human rights abuses in the supply chain, links with another risk we have identified as salient for Otovo, which is lack of traceability of product



		components and raw materials used in the solar power industry. In a complex supply chain with systemic challenges, we seek to do what we can to avoid such suppliers or manufacturers. Installation Activities: Geopolitical factors affecting worker rights Otovo operates in a large number of countries, with varying levels of legislation in place to protect people's rights. We are aware that geopolitical and societal factors such as the current war in Ukraine, high number of migrants and refugees, inflation, and increased prices of raw materials, on a general basis heightens the risk of deteriorating working conditions through long working hours, unpaid overtime, incidents of forced labour, lack of health and safety measures, and corruption. Because of this complex context, and as we are present in many countries, Otovo follows up our installation partners closely to cease, prevent and mitigate adverse impact throughout our value chain. As the scope can potentially be high, we have this as one of our prioritised areas. Batteries: Conflict minerals Markets and practices surrounding the extraction and refining of battery inputs, like cobalt, as well as product assembly, are complex and it is difficult to ascertain their origin. Lack of traceability is an issue that Otovo considers to be one of our most salient risks and we work continuously with the issues related to this that we can control. We are currently not providing batteries including cobalt, due to a risk of funding conflicts.
4	Do you screen suppliers by using «social» criteria? What are they? Do you include human rights requirements in contracts with suppliers and partners? Do you sometimes include a right for you to do inspections? In what situations?	Yes, Otovo has several criteria and requirements on human rights, including: Contract requirements for installations partners: Framework Agreement includes requirement stating that “<i>The Supplier shall respect international human rights and shall avoid contributing to any form of human rights violation. The Supplier shall adopt the ILO's conventions on employee rights for its operations</i>”. Otovo has a right and procedure in order to do third party inspections on-site of HSE and Q. Screening criteria for whitelisting Hardware Manufacturers: Requirements include holding certifications of management systems on Quality (ISO9001), Environment (ISO14001) and



		HSE (ISO45001). Social Responsibility (ISO26000) is preferred, but currently not strictly required (as few manufacturers currently hold this certification). Supply chain distribution partners/vendors are to work towards the ten principles of the UN Global Compact, through our framework agreement. All suppliers and business partners shall adhere to our Code of Conduct for Suppliers and Business Partners, where the code of conduct states that <i>“Otovo will use this Code of Conduct when selecting Suppliers and will follow-up on the Suppliers’ compliance with the Code of Conduct on a regular basis. Otovo reserves the right to document compliance in the form of follow-up meetings, inspections, audits and/or other means of mapping the working and environmental conditions at production and installation sites.”</i>. The code of conduct is in the process of being implemented.
5	Do you have a whistleblowing mechanism for employees and others? How does this work? Do you require suppliers and others you are in a business relationship with to have such a mechanism? Do you gather the content of complaints from your partners?	We have a whistle-blower mechanism for Otovo employees, documented through our Whistleblowing Policy, and information readily available on our company site on Notion. Employees are encouraged to report to their superior, superiors superior, VP People or to the Board of Directors Chairman. A whistle-blower/grievance mechanism for other stakeholders will be developed.
6	Do you allow your workers to organize? Do you require that your suppliers or partners allow this?	Otovo employees are allowed to organize. We require that our suppliers and business partners allow their employees to organise through our Code of Conduct.



Appendix 3: About CICERO Shades of Green

CICERO Shades of 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 Shades of Green.

CICERO Shades of Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Shades of 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 Shades of 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, the International Institute for Sustainable Development (IISD) and the School for Environment and Sustainability (SEAS) at the University of Michigan.

