

Second-Party Opinion Electron Holding Plc. Hungarian Solar Projects Developer



Scope ESG Analysis has assessed the alignment of the Green Bond Framework (Framework) of Electron Holding Plc. (Electron) with the 2021 Green Bond Principles (GBP) of the International Capital Markets Association. The assessment reveals that Electron’s Framework is fully aligned with the GBP.

This second-party opinion is based on the four GBP components: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting. Our methodology supplements the ‘use of proceeds’ element with an assessment of alignment with the EU Taxonomy’s criteria on climate change mitigation, an impact of proceeds assessment and a review of impact risks. The Framework has received two green leaves, which signals a significant environmental impact contribution.

Issuance assessment

Scope’s criteria	Electron Framework description	Scope ESG Assessment
Use of proceeds	<ul style="list-style-type: none"> Renewable energy 	 ICMA-aligned
Process for project evaluation and selection	<ul style="list-style-type: none"> Establishment of a green committee comprising four key members of the company and chaired by the owner and CEO of the company board. This committee manages the process evaluation and selection of green projects. 	 ICMA-aligned
Management of proceeds	<ul style="list-style-type: none"> Proceeds documented and updated in a sub-account managed by the Finance department Proceeds allocated within six months and audited by an external party on an annual basis 	 ICMA-aligned
Reporting	<ul style="list-style-type: none"> Annual reporting on the allocation of proceeds until full allocation Impact metrics include annual greenhouse gas emissions avoided, renewable energy generation and capacity of renewable energy plants installed in MW 	 ICMA-aligned
Electron’s sustainability strategy	<ul style="list-style-type: none"> Electron’s core business contributes to its sustainability strategy, which relates to its activities and ESG impact as important elements of its business responsibility 	 Significant
EU taxonomy alignment	<ul style="list-style-type: none"> Electron’s activities pertain to three taxonomy sectors related to renewable energy technologies and the use of solar PV technology Electron has confirmed adherence to DNSH criteria for the relevant sectors 	 Taxonomy-aligned
Impact assessment	<ul style="list-style-type: none"> Electron’s projects help to increase the country’s share of renewable energy use Increasing solar energy supports Hungary’s Net-Zero goal 	 Transformative
ESG management risks	<ul style="list-style-type: none"> Electron conducts environmental impact studies before project development, which ranges from site selection to the operation and management of solar parks. 	 Transformative

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Figure 1: Electron’s Environmental Framework Assessment

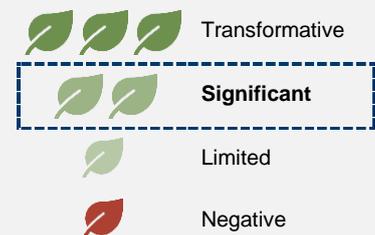


Figure 2: Alignment with United Nations Sustainable Development Goals



Figure 3: Engagement with EU Taxonomy draft regulation



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Bloomberg: RESP SCOP

Methodology

We were commissioned by the issuer to provide a second-party opinion on its Framework. We based our opinion on:

- Electron's internal documents
- Interviews with Electron's relevant stakeholders
- Documents on external market/regulatory research
- Data from our internal database

The leaf score summarises our evaluation and verification of the environmental impact of Electron's Framework. The described targets within each of the green project categories lead to individual leaf scores. In the case of multiple project categories, the aggregate of the scores yields the overall score of our second-party opinion report.

Our minimum requirement for GBP alignment is that each green project category of the Framework has a positive environmental impact, as represented by one green leaf.

Scoring	Description	GBP category	Sector criteria
	Transformative environmental contribution and complete alignment with relevant national and industry standards	Renewable energy	Production complies with highest market standards in sustainable production and power generation during use-phase. Supply chain and end-of-life management process is covered and goes beyond industry practices
	Significant environmental contribution and at least partial alignment with relevant market standards	Renewable energy	Full transparency on supply chain, environmental footprint of production and power generation during use-phase. Reference to waste and/or end-of-life practices in the Framework
	Environmentally friendly but insufficient quantifiable impact metrics and limited alignment with relevant market standards	Renewable energy	Selective information provided on supply chain and environmental footprint of production and end-of-life practices
	No significant or negative environmental impact; lack of alignment with relevant market standards	Renewable energy	Negative impacts from production relative to market practices

Electron provides services from development of solar power plant projects to energy sales

Proceeds to finance solar parks in Hungary

Electron's core business contributes to its sustainability strategy

Introduction

Electron is a Hungarian company that has been operating since 2017 as an integrated renewable energy company. Its activities range from project development and design, construction and operation, to energy production and trading. The company's portfolio consists mainly of photovoltaic (PV) solar power plants in Hungary and developing battery-operated control centres (also known as virtual power plants) and wind turbines in Eastern and Southern Europe. The company is currently conducting market research in several other countries.

The construction of most of the solar power plants is conducted by 100% owned subsidiaries (project companies) as own investments. These include Euronergy SPV, Euronergy Storage Ltd. and other international projects in development phase. In addition, in collaboration with Ewiser Forecast Ltd., one of Hungary's leading timetable service providers, the company operates Ewiser Energy Trade Ltd. (75% share), an electricity wholesaler that purchases electricity from renewable power plants and re-sells it to final users through the stock exchange.

In 2022, Electron sold 21.5 mega-watt (MW) of solar power parks located exclusively in project companies and has PV plants under development totalling 650 MW of capacity. Electron aims to become one of the leading integrated renewable energy companies in Central and Eastern Europe.

The purpose of Electron's activity is to generate and sell electricity from solar power plants. It therefore provides a holistic service including engineering on design, procurement and construction (EPC), undertaking the entire work of a project, from the technical, legal and financial consulting, through to planning and implementation.

Once the project companies have finished construction and the plants are operational, Electron operates and maintains the power plants with the support of a self-developed remote monitoring software. Its services include site maintenance, interim inspection of components, remote monitoring, and reporting to MAVIR Plc., an electricity supply and transmission system operator licensed by the Hungarian Energy and Public Utility Regulatory Authority.

The development of battery control centres is provided by Euronergy Storage Ltd, which will unite the projects that own the control centres and are dedicated to this purpose.

Electron has active project developments in Hungary, Austria, Italy, Croatia, Serbia, Bosnia, Montenegro, Romania, Greece and Kazakhstan.

In 2021, the largest customers were billed for the construction of the solar power plants while small buyers were associated with energy sales. The top four customers are System Integrator Ltd., PannonWatt Plc., Ewiser Energy Trade Ltd., and MAVIR Plc. which together account for 66% of net revenues. However, Electron does not have energy trading customers but sells excess energy through the Hungarian Power Exchange (HUPX).

Electron intends to issue a EUR 20m green bond to finance projects to construct new PV solar power plants and further develop existing solar power plants with the objective to increase the share of renewable energy use across Central and Eastern Europe.

Overall sustainability strategy

Electron's core business contributes to the energy transition by providing renewable energy in alignment with Hungary's efforts to change its energy mix and thereby meet national and EU-wide climate objectives.

While the company does not publish a specific sustainability strategy, it mentions that its sustainability targets relate to its core activities. In addition to providing renewable energy, important elements of its business responsibility include social and corporate governance topics. The company emphasises the mitigation of environmental impacts from land use for its solar parks, including through compensation measures such as tree-planting.

Electron's sustainability policy also includes product design and lifecycle management. Special attention is given to the end-of-life cycle through the management of waste and hazardous materials. In addition, Electron offers integrated solutions for the lifespan of solar plants, including for implementation, operation, maintenance and troubleshooting. This is to assure appropriate operation through the plants' lifecycle and reduce their ecological impact.

Electron's sustainability strategy scores two green leaves

Our assessment: Electron's sustainability strategy scores two green leaves as the issuer commits to a publicly available sustainability strategy, including transparent targets in line with the average industry standard. Electron also complies with relevant environmental standards.

Issuance

Green Bond Principles: assessment of issuance

I. Use of proceeds

Green project category	Fulfilment	Leaf score
Renewable energy	Financing new solar park projects in Hungary	

The renewable energy project category has scored two green leaves, led by Electron's intention to finance three new solar park projects in Hungary with a total electricity generation of 40 GW per year. The three solar parks will be in different Hungarian regions: Paszab with an electricity generation of 4.7 megavolt-ampere (MVA), Gyula with 5 MVA, and Sarkad with 4.2 MVA. While Electron also operates and manages solar parks, the bond proceeds will be specifically used to finance the design and construction of new solar plants. The production of the plants, however, has a negative environmental impact, specifically because the country of Electron's supply chain has an energy mix dominated by non-renewables. We provide further information on the environmental impact and risks on page 7 of this document.

Electron's use of proceeds scores two green leaves

Our assessment: Electron's eligible projects score two green leaves as the project's descriptions are clear, detailed, transparent and comply with the ICMA's GBP. Electron publishes regular updates of the list of green projects.

II. Process for project evaluation and selection

Establishment of a green committee

Electron's management has established a green committee chaired by the owner and CEO of the board. The four-member green committee consists of the member responsible for project development in Hungary, the Head of Design and Engineering, the Chief Financial Officer, and the Chief Business Development Officer. The green committee will i) develop Electron's sustainability approach and implement its objectives across all processes; ii) select eligible projects based on the use of proceeds defined in the Framework; iii) ensure compliance of selected projects with the Framework; iv) identify and manage social and environmental risks associated with the projects; v) prepare audit documents; and vi) monitor and report procedures related to the use of green proceeds.



Second-Party Opinion

Electron Holdings Green Bond Framework

Electron’s process for project evaluation and selection scores three green leaves

Our assessment: Electron’s process for project evaluation and selection scores three green leaves as Electron has a precise project selection process and identifies material ESG objectives associated with the chosen projects. Electron also commits to monitoring selected projects in cases of controversy and to performing necessary adjustments throughout the life of the green bond.

Establishment of green finance register managed by the green committee

III. Management of proceeds

The proceeds from the green bond will be managed by the green committee in a separate green register kept by the Finance department. The Enterprise Resource Planning (ERP) system tracks that an amount equal to the green bond net proceeds is allocated to green projects. The purpose of the green register is to ensure that the proceeds only support green projects. The green committee will monitor and regularly supervise the use of proceeds in alignment with the eligible projects.

Electron intends to allocate the bond proceeds within six months. As long as the green bond is outstanding, the balance of the tracked net proceeds will be periodically adjusted to match allocations to the green project carried out during that period. Before allocation, the issuer commits to communicating the intended types of temporary placement to investors. The management of proceeds will be reviewed yearly by external auditors or another third party.

Electron intends to use 100% of the bond proceeds to finance new projects.

Electron’s management of proceeds scores two green leaves

Our assessment: Electron’s management of proceeds scores two green leaves as there is a well-designed and transparent process to track the net proceeds. Electron commits to transparently disclosing details on liquid temporary investments.

Allocation and impact reports to be published annually

IV. Reporting

Electron is committed to providing an annual report on its website within 12 months of the green bond issuance and then annually until full allocation. These reports will include information on the allocation of the use of proceeds as well as relevant impact metrics. The company will publish an allocation report and an impact report.

The allocation report will include relevant information on the use of proceeds, a breakdown of proceeds according to eligible projects, the amount of unallocated proceeds and a detailed description of the financed activities. In addition, the allocation report will include the metrics as detailed in the table below.

Allocation report indicators
Proportion of green investments in corporate portfolio: green investments to total investments (%)
Green proceeds use: green bond proceeds used to total green bond proceeds (%)
Green proceeds use by environmental purpose: distribution of green proceeds used between categories defined in the Framework
Other relevant indicators

In accordance with the 2021 Harmonised Framework for Impact Reporting, Electron has committed to annually reporting on selected impact indicators to demonstrate the environmental impacts of the projects to which the proceeds have been allocated. The environmental impact will be measured based on energy consumption and greenhouse gas emissions. While monitoring CO₂ reduction is already part of the company’s ERP system, energy consumption will be incorporated as an additional metric. The impact indicators will be measured and monitored regularly.

Where feasible, the company also plans to report on the indicators listed below.

Category	Impact indicators
Renewable energy	Annual greenhouse gas emissions avoided in tonnes of CO ₂ eq.
	Annual renewable energy generation in MWh
	Capacity of renewable energy plant(s) installed in MW

Electron's reporting scores three green leaves

Our assessment: The reporting Electron has proposed scores three green leaves as it is fully aligned with the ICMA's GBP and provides additional information on the allocation of proceeds on environmental benefits at project level and/or regular impact reporting.

Our opinion

Electron's Framework is tied to two relevant UN SDGs

Alignment with UN Sustainable Development Goals (SDGs)

The SDGs adopted by all UN member states in 2015 are a collection of 17 global targets comprising an agenda for achieving sustainable development by 2030. We deem the following SDGs as relevant for Electron:

7. Affordable and clean energy: ensure access to affordable, reliable, sustainable and modern energy for all

13. Climate action: Take urgent action to combat climate change and its impacts.

Appendix III lists the relevant indicators for measuring Electron's contribution to each SDG. The contribution to the SDGs can be quantified in post-issuance impact reporting.

Electron's Framework voluntarily engages with EU taxonomy regulation draft

Alignment with EU taxonomy

The Taxonomy Regulation was published in the Official Journal of the European Union on 22 June 2020, and it entered into force on 12 July 2020. It establishes a basis for the EU Taxonomy by setting out four overarching conditions that a particular economic activity must meet to qualify as environmentally sustainable. The Taxonomy Regulation establishes six environmental objectives: climate change mitigation, climate change adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. A first delegated act on sustainable activities for climate change adaptation and mitigation was approved on 21 April 2021 and formally adopted on 4 June 2021 for scrutiny by co-legislators. A second delegated act for the remaining objectives will be published in 2022.

The project categories of Electron's Framework pertain to the following taxonomy sectors for which the first delegate act on climate change mitigation specifies technical screening criteria:

- Manufacture of renewable energy technologies
- Electricity generation using solar photovoltaic technology sector
- Installation, maintenance and repair of renewable energy technologies

Electron's activity is aligned with the technical screening criteria for the manufacture of renewable energy technologies and for the electricity generation using solar photovoltaic technology sectors as Electron plans to finance solar energy projects in Hungary and contribute to increase the share of renewable energy. For the installation, maintenance and repair of renewable energy technologies, Electron's activity complies with the technical screening criteria.

Electron has confirmed adherence to DNSH criteria

The EU taxonomy defines a 'do not significant harm' (DNSH) assessment. The DNSH assessment ensures that other environmental objectives are not harmed while a substantial contribution is made to one or more environmental objectives.

The taxonomy specifies DNSH criteria for activities relating to the manufacture of renewable energy technologies and the electricity generation using solar photovoltaic technology. Electron has stated its intention to align with these criteria. The taxonomy has no specified DNSH criteria for the installation, maintenance and repair of renewable energy technologies.

An assessment of minimum social safeguards is not included in the analysis.

Electron's alignment with EU taxonomy scores two green leaves

Our assessment: The issuance is partially aligned with the EU taxonomy, providing all documents required to verify alignment with the technical screening criteria and additional documentation to verify partial alignment with the DNSH criteria.

Impact of proceeds

Electron impact: renewable energy

Share of renewable energy in Hungary and the EU

The EU aims to derive at least 32% of energy from renewables by 2023.¹ This target was raised in 2021 to 38%-40% as part of the 'Fit for 55' policy package.² Hungary's energy strategy aims for around 20% of primary energy to be derived from renewables by 2023³. The importance of renewable energy is driven by the significant volume of energy production and consumption. Emissions from electricity production and consumption are the largest source of greenhouse gas emissions in the EU, accounting for more than 75% of the total.⁴ However, figure 4 shows that obtaining a larger share of electricity from renewable sources remains a challenge for Hungary. Although the share has been increasing (13.9% in 2020 to 19.2% in 2021⁵), it remains significantly below the European average of 22.1% in 2020⁶ and 34% in 2021⁷. In the light of EU climate ambitions, Hungary aims to increase the share of renewable energy in final consumption from 21% to 25% in 2030, supported especially by solar PV.⁸

¹ https://ec.europa.eu/clima/policies/strategies/2030_en

² https://ec.europa.eu/info/sites/default/files/amendment-renewable-energy-directive-2030-climate-target-with-annexes_en.pdf

³ <https://www.iea.org/policies/5913-2030-energy-strategy-of-hungary>

⁴ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/energy-and-green-deal_en

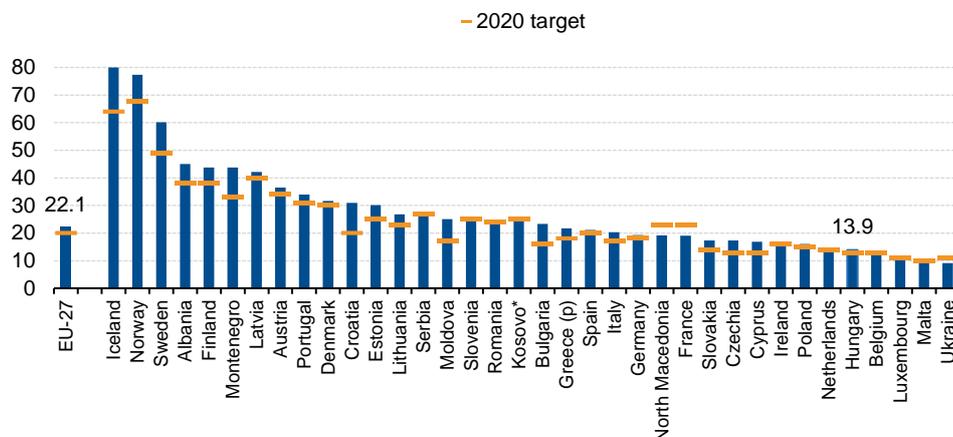
⁵ <https://bbj.hu/economy/energy/green-energy/hungary-reaches-19-2-renewables-share-in-2021>

⁶ <https://www.eea.europa.eu/ims/share-of-energy-consumption-from>

⁷ https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3544

⁸ International Energy Agency. (2022). *Hungary 2022 - Energy Policy Review*.

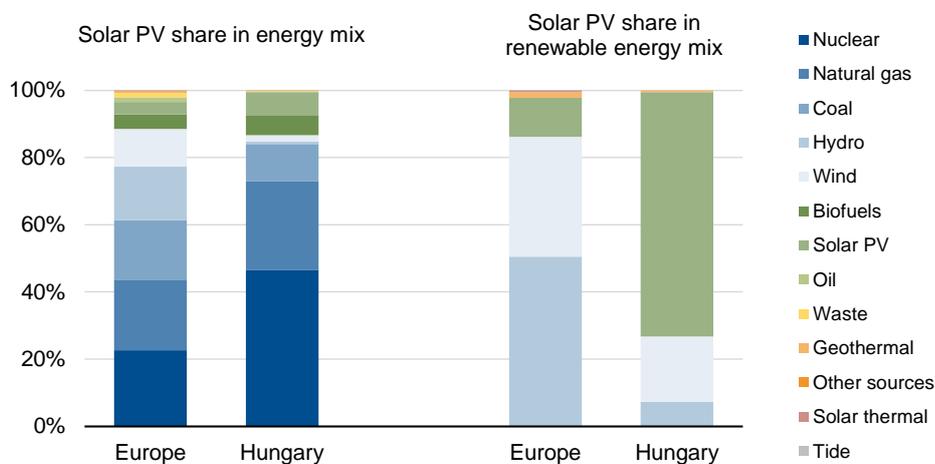
Figure 4: Share of energy from renewable sources, EU countries, 2020



Source : Renewable energy statistics, Eurostat⁹

The EU also attaches great importance to solar power, which already accounts for 12% of the renewable energy mix in 2019¹⁰ and 14% in 2020¹¹. In Hungary, solar power represents 73% of the renewable energy mix¹² and provided 14.7% of its electricity in the summer of 2022, an increase from 7% in 2020¹³.

Figure 5: Solar PV share in electricity generation in total and renewable energy mix, Europe 2019 vs Hungary 2020



Source: Electricity generation, IEA regions Europe and IEA countries Hungary

The total capacity of installed solar PV in Hungary increased from 1,400 MW in 2019 to 3,000 MW in April 2022. The government also aims to increase solar capacity to at least 6.5 GW in 2030 and 12 GW by 2040⁸. A major constraint of a renewable energy such as solar power is its limited capacity to replace fossil fuels: it is a volatile energy source until storage capacity technology becomes more advanced. The increased share of solar PV in Hungary's electricity generation is making the electricity system more decentralised. This can be mitigated by investing into grid infrastructure and storage and flexibility

⁹ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics#Wind_and_water_provide_most_renewable_electricity.3B_solar_is_the_fastest-growing_energy_source

¹⁰ <https://www.iea.org/regions/europe>

¹¹ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics#Share_of_renewable_energy_more_than_doubled_between_2004_and_2020

¹² <https://www.iea.org/countries/hungary>

¹³ <https://www.euractiv.com/section/energy/opinion/hungary-risks-billions-in-eu-funds-if-it-goes-ahead-with-investments-in-coal/>

Chinese origin of PV components dominates upstream impact

solutions⁸. Electron's portfolio consists mainly of PV solar power plants but they can also store energy, which contributes to providing a more stable electricity supply.

Electron's ambitions promote the provision of renewable energies in the country by reducing energy-related greenhouse gas house emissions and mitigating the reliance on energy imports. Hungary imports 90% of oil and natural gas, mainly from Russia¹⁴. In addition to reducing the reliance on Russia, the provision of more renewable sources contributes to the expected growth in solar PV generation by 25% in 2022-30 to align to the Net Zero scenario¹⁵ and Hungary's objective to generate 90% of electricity from low-carbon sources by 2030.¹⁶

Apart from the positive downstream impact from producing renewable energy, Electron's activity may also pose negative impact risks, which are summarised below.

Upstream impact

Globally, solar power is the third major renewable just after hydropower and wind¹⁷ and is the fastest growing renewable source in the EU.⁹ Solar is an important alternative for producing electricity with a significantly lower carbon footprint than fossil-based technologies across the lifecycle. China is the world's largest producer of solar technology, producing 76% of solar cells and 71% of PV modules in the world¹⁸. China's primary source of electricity generation is coal at 64% of total energy production¹⁹. Therefore, PV modules made in China are still predominantly supported by coal-fired power stations. As a result, Chinese-made PV systems have a global warming potential that is 29% higher on average than those made in Europe.²⁰

In 2021, 89% of Electron's materials expenses were linked to five suppliers. The most important is Chinese manufacturer Jolywood Solar Technology Co, Ltd. which supplies the PV modules for Electron's projects. Inverters come from China, while the mounting structure, cables and transformers are from Europe. Electron commits to working with top-quality suppliers as the projects' effectiveness ensures profitability. Although the supply chain is geographically diversified, the major producers in the industry's supply chain are from China.

The main environmental impact of Electron's activity stems from the production of solar PV modules in China, given the country's heavy reliance on fossil fuels. At the same time, Electron's environmental net impact remains positive because it replaces fossil-fuel sources with solar panels in the use phase (downstream impact). While the upstream impact from production and final degradation from using solar amounts to 17-47g per kWh (depending on assumptions such as used materials per frame and transport), the lifecycle impact of brown coal (1140g/kWh) or gas (490g/kWh) remains much higher.²¹ Accordingly, the energy balance of solar power relative to fossil-based electricity remains positive even if its volatile production makes it less efficient in use.

¹⁴ OECD. 2020. *Fossil fuel support country note- Hungary*. s.l. : OECD, 2020.

¹⁵ <https://www.iea.org/reports/solar-pv>

¹⁶ <https://www.iea.org/news/hungary-s-clean-energy-transition-is-the-key-to-reach-energy-independence>

¹⁷ <https://www.iea.org/fuels-and-technologies/renewables>

¹⁸ Rambey, M. F. R. H., Setiawan, E. A., & Madsuha, A. F. (2022, February). PV industry in China and three Southeast Asia countries: A systematic literature review using PRISMA. In *IOP Conference Series: Earth and Environmental Science* (Vol. 997, No. 1, p. 012021). IOP Publishing.

¹⁹ <https://www.iea.org/countries/china>

²⁰ Stamford, L., & Azapagic, A. (2018). Environmental impacts of photovoltaics: the effects of technological improvements and transfer of manufacturing from Europe to China. *Energy technology*, 6(6), 1148-1160.

²¹ German Environmental Agency (2021): Aktualisierung und Bewertung der Ökobilanzen von Windenergie- und Photovoltaikanlagen unter Berücksichtigung aktueller Technologieentwicklungen, 35/2021

Negative downstream impact of PV modules mitigated by high recycling rate

Downstream impact

PV modules are expected to last at least 25 years. After this time, they can still produce more than 80% of their original power²².

Even so, there is still the potential for an exponential increase in end-of-life PV waste in the following years. PV panels are projected to generate around 1.7m tonnes of landfill by 2030 and 60m by 2050²³. However, 95% of PV systems' principal materials and 100% of its energy storage infrastructure can be recycled²⁴.

Electron's solar parks have been operating for a few years. However, they have stored replaced PV modules from maintenance to recycle the principle materials. While Electron is not involved in this service, they are committed to monitoring upcoming recycling technologies.

Electron's impact of proceeds scores three green leaves

Our assessment: We note that the projects are highly relevant to an environmental objective within the sector of the activity. The scope of the impact is significant and goes beyond market practice. The issuer adopts best practices in executing the activity.

Environmental impact studies before project development

Risks

While Electron's Framework will finance green projects with a positive impact, the eligible category entails social and environmental risks. The most material risks relate to biodiversity, waste management, land use, and health and safety.

Electron is aware of these risks and internally conducts environmental impact studies before project development that identify and assess risks at every stage of the process. In addition, Electron provides operation and management services to reduce environmental impacts during the operational phase of the projects.

We note that Electron discloses associated risks related to the projects in the Framework and we recognise the company's transparency on the environmental and social impacts of its business model.

Electron's ESG risks management scores three green leaves

Our assessment: Electron has a risk management strategy in place that addresses direct and indirect risks associated with every project category of the issuance. Electron conducts a full risk assessment before engaging in a project and ensures risks are minimised to the best of its knowledge.

²² <https://www.energy.gov/eere/solar/crystalline-silicon-photovoltaics-research>

²³ Franco, M. A., & Groesser, S. N. (2021). A Systematic Literature Review of the Solar Photovoltaic Value Chain for a Circular Economy. *Sustainability*, 13(17), 9615.

²⁴ <https://www.eea.europa.eu/publications/emerging-waste-streams-opportunities-and>

Associated project risks	Electron's risk mitigation measures
Biodiversity	<p>The EU aims to protect at least 30% of its land area and 30% of its seas through its 2030 Biodiversity Strategy²⁵. The strategy seeks to reduce chemicals use, encourage solar panel farms that can be combined with biodiversity-friendly soil cover and ensure habitats and species do not deteriorate in conservation trend and status.</p> <p>Electron's environmental considerations on site selection and biodiversity protection cover all these key points. These include selecting a site that has no environmental impact on the region by protecting agricultural land, archeology, Natura2000, Ramsar zone, ecological corridor, landscape protection, and other environmental conditions, cleaning PV panels without using chemicals, avoiding the use of herbicides on the soil, and creating a positive effect on local wildlife. In previous projects, Electron developed habitats for insects, bees and birds in the solar parks by installing organic beekeeping. It also replaced grass mowing without chemicals by having sheep perform this function a few times a year.</p>
Waste management	<p>Waste arising from end-of-life clean energy infrastructure is projected to heavily increase over the next 10 years. Waste from solar PV cells is expected to grow from 50,000 tonnes in 2020 to more than 1.5m tonnes by 2030 (+3,000%). Wind energy waste is also expected to grow around 200% and batteries for energy storage by 600%²⁶.</p> <p>We have no information on Electron's procedures or its involvement in the recycling of solar PV cells after the use-phase. Electron's solar parks have been operating for a few years; therefore, this risk is not yet relevant to their operations. However, old PV panels that were replaced during maintenance are stored in warehouses with the opportunity to recycle materials and parts. Electron is also committed to replacing the panels at the end of their life and will monitor developments and technologies on this matter.</p> <p>Accordingly, this second-party opinion cannot assess the degree of Electron's contribution to waste reduction or the recycling of solar PV systems.</p>
Health and safety	<p>Hungary's 1993 Occupational Safety and Health Act regulates health, safety, environmental and fire protection requirements in all workplaces.²⁷ EU-level regulations and minimum standards also apply in the country.²⁸ An additional risk for health and safety stems from purchased PV components, which may rely on forced labour in the region where they were produced.</p> <p>Electron's subcontractors working in the solar plant site must carry out construction in accordance with Hungary's 1993 Occupational Safety and Health Act. Subcontractors must also comply with Decree 4/2002 (II.20.) SzCsM-EüM on occupational safety requirements at construction sites and during processes for the duration of construction.</p> <p>Furthermore, all subcontractors agree to employ only appropriately trained and legally employed workers and to apply all the labour, tax, and social security laws in vigour.</p>

²⁵ https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en#documents

²⁶ <https://www.eea.europa.eu/publications/emerging-waste-streams-opportunities-and>

²⁷ <https://www.ilo.org/dyn/natlex/docs/WEBTEXT/38155/64930/E93HUN01.htm>

²⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31989L0391&from=EN>



Second-Party Opinion

Electron Holdings Green Bond Framework

Appendix I: Documents provided by Electron

Document category	Document description
Market research on sector/regional standards	National Energy and Climate Plan – Hungary
	National Energy Strategy 2030 – Hungary
	Central Bank of Hungary document: Financing the Hungarian Renewable Energy sector
	Waste Framework Directive
	EU progress on climate action – Hungary (Oct 2021)
	Hungary Energy Policy Review 2022 – International Energy Agency
General information provided by Electron	Environmental impact study example of previous solar energy projects
	Calculations of CO ₂ savings for current solar plants
	Calculations on expected electricity generated from the development of solar plants
	Professional background of members of the Green Committee
Green bond-specific documentation provided by Electron	Green Bond Framework
	Information on use of proceeds

Appendix II: SDG alignment

GBP category	SDG alignment	Indicators to be evaluated
<p>Renewable energy</p>	 	<ul style="list-style-type: none"> • Annual greenhouse gas intensity of energy consumption • Annual greenhouse gas emissions • Energy import dependence • Renewable energy sources • Biologically inactive areas



Second-Party Opinion

Electron Holdings Green Bond Framework

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