S&P Global Ratings

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Climate Transition Assessment

Kempower Oyj

Sept. 20, 2024

Location: Finland

Sector: Energy

Climate Transition Summary

Kempower's electric vehicle (EV) charging infrastructure business supports the transportation sector's transition away from fossil fuel use. In our view, mass electrification of transportation is a crucial feature of a low-carbon economy. Kempower designs, manufactures, and sells a range of direct current (DC) fast charging equipment and services for both personal and commercial vehicles. The company's equipment can also charge electric heavy-duty vehicles and marine vessels, although these account for a smaller share of the business. We believe the current global EV charging infrastructure to support the electrification of the transportation sector is inadequate. The growth of Kempower's business therefore supports the mass roll out and operations of an electrified transportation sector. As a result, we assign a Future Shade of Dark Green for the foreseeable future for Kempower.

Though it is nascent, we believe Kempower's value chain decarbonization efforts will further support the contribution of its business toward a low-carbon economy. The company's main climate transition and environmental risks are upstream through the acquisition of emission-intensive materials, such as aluminum, ferrous metals, and plastics, and downstream through the grid that powers its chargers. In terms of upstream operations, Kempower assesses suppliers' performance in reducing GHG emissions through monitoring tools and audits. The company plans to conduct audits of selected suppliers over the coming years, aiming for full supply chain visibility. Downstream, Kempower is developing a systematic process to obtain the carbon intensity of grids serving its chargers via its cloud service (ChargEye software).

Current activity: Revenue 2023 (% of total)

	Dark green		Medium green		🗖 Light green 🛛 📮 Y		Yellow Orange		■ Red	
0	10	20	30	40	50	60	70	80	90	100
Investm	ients: Capit	tal expenditu	ire (cape	x) 2023 (%	of total)					
		■Dark green ■Medium green		Light green Yellow Orange Red				Red		
0	10	20	30	40	50	60	70	80	90	100



For Foreseeable Future

A Climate Transition Assessment shows the expected alignment of a company's activities with a low carbon climate resilient future once its planned transition changes are realized, considering implementation actions and risks.



The company's business model is solely focused on expanding EV infrastructure, which we view as an integral step toward a low carbon, climate resilient (LCCR) future.

Weaknesses

No weaknesses to report.

Areas to watch

As Kempower grows its business, its exposure to carbon-intensive raw materials and grid emissions could increase. Therefore, advancements in the company's value chain management initiatives, including supplier screening policies and the measurement of full scope 3 emissions exposure, are important factors considered in our Dark green future shade opinion.

A Climate Transition Assessment (CTA) provides a point-in-time opinion, reflecting the information provided to us at the time the CTA was created and published, and is not surveilled. We assume no obligation to update or supplement the CTA to reflect any facts or circumstances that may come to our attention in the future. A CTA is not a credit rating and does not consider credit quality or factor into our credit ratings. Most accounting systems do typically not provide a breakdown of revenue and investments by environmental impact, and the analysis may therefore not be directly comparable with annual reporting. See our <u>Analytical Approach: Climate Transition</u> <u>Assessment</u> and our <u>Analytical Approach: Shades of Green</u>.

Strengths

Company Description

Kempower Oyj manufactures and sells electric vehicle (EV) charging equipment and solutions under the Kempower brand name. The company has produced over 20,000 EV charging stations. In 2023, 91% of its revenue came from Europe, with 40% of that share coming from the Nordics. It designs, manufactures, and sells a range of DC fast charging equipment and services tailored for both personal and commercial vehicles as well as marine vessels. The company also offers cloudbased charging management systems supporting charge point operates provision of secure and efficient service. The company was founded in 2017 and is headquartered in Lahti, Finland.

Current Activity

2023 activity by shade (% of total)

	- 60	a (a)	- (-1)
Shade Double group	Revenue (%)	Opex (%)	Capex (%)
Dark green	100	44	100
Activities: Revenues and expenditures related to the manufacture and s charging infrastructure	sale of EV		
Medium green		56	
Activities: Raw materials acquisitions for developing EV charging infrast	ructure		
Light green			
Activities: N/A			
Yellow			
Activities: N/A			
Orange			
Activities: N/A			
Red			
Activities: N/A			
Opexoperational expenditure. CapexCapital expenditure. Opex and Capex shading serve Equity designation alignment opinion. Source: S&P Global Ratings.	to support our Nasdaq Green		

Kempower derives all of its revenue from the sale of charging solutions and related EV charging infrastructure for passenger and commercial vehicles, which we view as Dark green. We view EV charging products and accessories as supporting the decarbonization of the road transportation sector. The current EV infrastructure in Kempower's markets is inadequate to support the transition from passenger and commercial internal combustion engine vehicles to EVs. Inadequate EV charging

infrastructure availability is a persistent concern among potential EV buyers, including individuals considering passenger cars, public transport operators considering electric buses, and logistics companies considering electric trucks. Therefore, the shift to electrified transportation depends on effective roll out and operations of charging infrastructure. Even though Kempower is still exposed to embodied carbon emissions from the acquisition of raw materials, these only represent a fraction of the transportation system's value chain emissions, and we view the company's overall contribution decarbonization as significantly positive.

We note its charging points may be used to power hybrid electric vehicles, which we do not consider as fully in line with an LCCR future due to their use of fossil fuels. In addition, the full lifecycle climate implications depend on the carbon intensity of the grid that is powering the vehicles being charged, as well as the activities served by the charged vehicles, which includes activities with varying degrees of environmental impact.

We assigned a Medium green shade to 56% of Kempower's opex that is related to the costs of goods sold, including raw materials and components, while the rest is Dark green. Kempower sources various pre-assembled components and critical materials that are energy and emission-intensive to produce, such as aluminum, ferrous metals, and plastics. The limited visibility and information on Kempower's various supply chains and activities makes it challenging to fully assess climate and other sustainability risks stemming from its extended value chain. Despite all Kempower's OPEX supporting its Dark green business, we differentiate the shade for opex that goes toward buying environmentally intensive inputs. Kempower doesn't currently fully assess the climate transition and environmental risk of all raw materials suppliers and is still enhancing its supplier screening policies.

We view all of Kempower's capex as Dark green. In 2023, most the company's capex costs were related to improving its Lahti charging infrastructure assemblage facility and building out of its North American facility. The existing facility in Finland has some exposure to emissions from natural gas district heating, but there are no direct emissions from its production lines. Both North American and Finland facilities fully run on renewables. While the facilities do not have any sustainability certification, they support the expansion of Kempower's revenue streams that we consider Dark green. A small fraction of the improvement costs includes the procurement of materials needed for the improvement works. Overall, emissions resulting from facilities expansion and production of materials used for such expansion have a relatively minor impact on the overall emissions lifecycle emissions of Kempower's products. A small share of capex is related to Kempower's R&D program, which we view positively. The R&D program focuses on expanding its product portfolio to include ancillary hardware and software solutions. In our view, Kempower's R&D program can improve the efficiency and reliability of its core DC charging offering.

Climate Transition Plan

Metrics And Targets

Transition targets

Transition metrics	Baseline metric (2022)	2023	2025	2035
Scope 1 and 2 GHG emissions intensity (gCO2e/MEUR)	0.66	0.30		0 (neutral)
Scope 1 and 2 (electricity, location-based, and heat) GHG emissions (tCO2e)	N/A	184		0 (neutral)
Scope 3 GHG emissions (tCO2e)	149	944		
Fossil free heating internal use (tCO2e/MEUR)	0.66	0.30	0	
Fossil free electricity internal use (tC02e/MEUR)	1.80	0	0	
Charging power to end customers (MWh)	390	560	86% less emissions/100km in a passenger car (fully electric compared to ICE)	
Remote maintenance, support and software updates (avoiding travel emissions; %)	100	100	100	
Recyclability rate for chargers (%)	99.61 for Kempower Movable Charger	99.61 for Kempower Movable Charger 99.71 for Kempower Satellite 99.72 for Kempower Power Unit	>99	
Landfill waste intensity (glw/EUR)	0.05	0	0	

 $gCO2e/EUR = grams of CO_2 equivalent per euro. tCO2e/MEUR = tons of CO_2 equivalent per million euros. MW = Megawatts. glw/EUR = grams of landfill waste per euro. ICE = internal combustion engine vehicle. Includes the company's long-term net zero targets for illustrative purposes. Targets beyond the time frame of our analysis do not influence our Climate Transition Assessment outcome because the CTA analyzes more specific actions that the company has planned and the implications of those actions. Source: Company Reporting and S&P Global Sustainable1.$

Kempower has a comprehensive set of climate transition targets, but these are limited to its own operations. Furthermore, the company has yet to fully measure its scope 3 emissions exposure. Hence, we view the company's climate transition risk metrics reporting and target setting as nascent. All of the company's emissions stem from its activities that support EV infrastructure expansion, which is an integral part of the global energy transition. However, a significant proportion of its emissions are dependent on downstream grid emissions that are the result of customers using its charging equipment—the pace at which these emissions abate is dependent on country and utility level actions and investments.

Kempower's carbon neutrality target is limited to its own operations. Although reducing production emissions is important in terms of the value chain of battery-powered vehicles, Kempower has yet to set a target that covers its up- and down-stream emissions, especially from raw materials such as steel, printed circuit boards, and plastics. In addition, the company has yet to publicly disclose the full inventory of scope 3 emissions, which limits our ability to determine and quantify the climate benefits of its 2035 neutrality target. The company reports zero scope 1 process emissions as its charging infrastructure is manually assembled without the use of fossil fueled machinery. It has a target for fossil free energy that supports the elimination of its market-based scope 2 emissions. However, because Kempower only discloses scope 3 emissions from

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waste management and business travel, it is difficult to determine how it will fully decarbonize its actual carbon footprint.

Kempower's commitment to using fossil-fuel free energy by 2025 aligns with their goal of climate neutrality by 2035. Kempower's target is to procure 100% fossil-fuel free energy by 2025, effectively eliminating their market-based scope 2 emissions, which currently account for 10% of their total reported emissions. We believe Kempower is in a good position to achieve this target, as they have already achieved 100% fossil-free electricity use in 2023 through the purchase of renewable energy certificates (RECs). While this has reduced market-based scope 2 emissions, RECs do not directly affect emissions from electricity production, which explains why Kempower's reported electricity location-based scope 2 emissions are still existent (REC procurement may not influence actual emissions from electricity production).

Kempower is improving its ability to source value chain emissions data, which we believe is central to achieving its target of 86% fewer emissions per 100 kilometers driven in a fully electric passenger vehicle relative to an ICE equivalent by 2025. This will necessitate, in particular, further scope 3 accounting measures for emissions from raw materials sourcing and the energy grids that power its chargers. For upstream emissions, the company is improving its supplier auditing and GHG reporting requirements but has yet to disclose its total exposure to supplier's emissions. Downstream emissions will be dependent on factors such as charging location, grid intensities and vehicle types. Although it does not yet track the intensity of the grids that power its chargers, Kempower can estimate these emissions using the energy mix and usage data in the countries where it operates. In this sense, Kempower is developing a process to obtain such data via its cloud service (ChargEye software), which tracks information of Kempower's charging stations. Fossil fuels may currently be used in electricity grids in the company's core markets, but national and regional renewable energy targets, such as the EU's 42.5% ambition by 2030, may mitigate this exposure as they come to fruition.

Actions And Investments

In our view, Kempower has material exposure to emissions in its value chain, but its effort to track these emissions are nascent. Nevertheless, its capex supports both the decarbonization of its own operations and growth of the business. As a result, we believe Kempower's transition actions and investments have yet to effectively tackle its most material emission sources, even though we recognize that the company is making advancements on that front.

Kempower's transition actions focus on its supplier and client decarbonization initiatives. Its recent investments focused on facilities expansion mainly, but also included the development of Kempower ChargEye cloud service. Kempower expects to obtain energy grid data via its cloud service. The service also allows charging station operators to optimize how they power the products, which could also result in more energy efficient charging. Regarding suppliers, Kempower currently utilizes supplier audits to evaluate suppliers' GHG emissions reduction performance, aiming for full supply chain visibility over the coming years.

The company's capital expenditures support the decarbonization of its own operations. Kempower plans to eliminate heating related emissions in its existing factories by replacing its natural gas heating system with an electrified heating system. Additionally, Kempower is working with the local district heating operator to transition from natural gas to sustainable certified biomass sourcing. However, they may face challenges during rapid drops in external temperature in its Finland sites, which could require use of natural gas.

Kempower's business growth should support the decarbonization of the transportation sector. An important barrier in the expansion of EVs is inadequate supply of charging points. According to the International Energy Agency transportation decarbonization scenarios, for EVs to meet a projection of two-thirds of light-duty vehicle and 40% two- and three-wheeler sales by 2035, the number of public charging points globally will need to increase by six times (25 million points) relative to 2023 numbers. To this end, Kempower is leveraging its capex to expand manufacturing capacity to keep pace with order volumes, as well as expand its physical footprint into new geographies. We expect the company to focus future expansions on its two core markets: Europe and North America. For example, at the end of 2023, the company opened a production facility in the U.S., from which it expects to increase manufacturing for Canadian and U.S.-based orders. In 2024, the company will open a new factory in Lahti, where its first facility was installed. The new factory was constructed on an existing property and will operate using heat from sustainable certified biomass sources and renewable electricity. The new Lahti facility will double Kempower's production capacity in Europe. Finally, Kempower considers the EV industry in emerging markets to be in the business development stage. Although there is no investment outlook for such regions, Kempower monitors their EV adoption rates and market trends.

Kempower focuses its R&D spending on developing a wider portfolio of products to better serve existing customers and new applications for its products for emerging EV user types including hard-to-abate heavy-duty vehicles. The electrification of such vehicles has been challenging due to cargo weight, volume considerations, and journey lengths In 2023, Kempower launched its Megawatt Charging Program for electric trucks and large vehicles with battery capacities above 1 megawatt (MW). The company also collaborates on e-mobility research. For example, in 2023, it established its Electric Mobility Research Centre (EMRC) in partnership with the LAB University of Applied Sciences, among others, in the Lahti (Finland) Green Electrification of Mobility Cluster (GEM).

Implementation Drivers

Kempower's governance structure provides adequate support for its business growth, which supports the electrification of the transportation sector. The executive team, specifically the COO, supervises and reports sustainability matters and climate risks to the CEO. We do not see a significant key person risk for the continuity of Kempower's sustainability initiatives due to the reinforcement of sustainability within Kempower's broader administrative structure, which includes a dedicated sustainability team and public targets. However, there is limited evidence of board oversight of climate transition risk, although we do not view such risks as significant to Kempower given our Dark green assessment of its business.

Kempower has financial flexibility to adapt to sluggish market conditions. DC charging installation has continued to demonstrate positive growth in Europe and North America in 2024, which together accounted for 90% of Kempower's revenues for the first half of 2024. As a result, the company executed on its growth plan and invested in the expansion of its EV charging assemblage capacity. That said, the growth of DC charging installation in 2024 has stemmed from customers using their inventories rather than a growth in sales of DC charging equipment manufacturers. If faced with lower-than-expected demand growth or a market downturn, Kempower maintains a comfortable liquidity position with its cash position exceeding its debt obligations. Moreover, facilities maintenance costs are relatively capex light as they mostly concern assembly processes while most of the running operating costs are employee-related, which provides flexibility for adjustments if needed.

As Kempower expands its business, its visibility of supply chain risks could diminish. We do not expect the company will lose advances made in its supplier engagement policy. However, we believe if the business grows faster than expected, the company may face risks in mapping its entire supply chain and implementing its supplier screening and auditing considerations.

Lower EV adoption rates could limit the climate benefits associated with Kempower's business growth. The company primarily focuses on the European and North American markets. While both markets have experienced consistent growth in terms of new EV car sales and the share of EV registrations compared with total new car registrations, changes in manufacturer commitments or government subsidies and regulations could limit the company's growth rate. Moreover, expanding into new geographical markets may be constrained by local regulations and the availability of grid connections. To ensure compliance with market requirements, Kempower products must adhere to relevant regulations and possess the necessary certificates, particularly in areas such as safety and fire prevention. That said, for certain jurisdictions such as the U.S., when analyzing the rate of retired ICE vehicles versus the rate of new EV and hybrid registrations in 2024, we observe a positive substitution trend.

Nasdaq Green Designation

Nasdaq Green Equity Designation

S&P Global Ratings confirms that Kempower meets the requirements for Nasdaq Green Equity Designation set out in the Nasdaq Green Equity Principles.

In 2023, 100% of Kempower's turnover came from assets with some Shade of Green, exceeding the 50% threshold for green activities for company turnover. The sum of opex and capex allocated a Shade of Green is 100%. This exceeds the 50% threshold for investments, defined as the sum of capex and opex. In 2024, Kempower had no turnover derived from fossil fuel activities, meeting the threshold of less than 5% of the company's turnover being derived from fossil fuel activities.

In addition, Kempower meets Nasdaq transparency requirements on EU Taxonomy alignment and environmental targets and key performance indicators (KPIs). The company reports its EU Taxonomy alignment in its 2023 annual report (page 43). It reports on environmental targets and KPIs in its 2023 sustainability report and shares data through the Nasdaq ESG Data Portal. Kempower currently does not publicly report on two vital scope 3 emissions categories: category 1--purchased goods and services and category, that is, emissions from battery manufacturing and other raw materials used in its DC chargers, and category 11--use of sold products, that is, emissions from the grid that powers Kempower's chargers. That said, the company expects to have more data on scope 3 emission sources by the end of 2024. Scope 1 and 2 absolute emissions totaled 184 tons of CO2 equivalent (tCO2e) in 2023 while scope 3 from waste management and business travels totaled 944 tCO2e.



S&P Global Ratings' Shades of Green



Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Related Research

- Analytical Approach: Climate Transition Assessments, July 18, 2024
- Analytical Approach: Shades of Green Assessment, July 27, 2023
- FAQ: Applying Our Integrated Analytical Approach For Climate Transition Assessments, July 18, 2024

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