FIELD	Warehouses and intra-logistics
SUB-FIELD	Solutions for decarbonization
CATEGORY	Electric vehicles charging
SOLUTION NAME	IKEA case: charging stations for heavy-duty vehicles
APPLICATION	DEWA (Dubai Electricity and Water Authority); INTER-IKEA Group
DESCRIPTION	IKEA, a Swedish multinational specialized in the sale of furniture, furnishings and household goods, has installed a series of charging stations for its fleet of Battery Electric Vehicle (BEV) at its central warehouse (DC) in Dubai. These vehicles move incoming goods from the port and make deliveries from the Dubai DC to two shops (the first nearby 15 km away, the second 30 km away, both in Dubai). The vehicles also return to the port to serve other countries such as Saudi Arabia, Kuwait and Qatar and to deliver unloaded containers. For these flows and types of electric vehicles, the Dubai DC had to be equipped with adequate charging infrastructure, so a detailed design analysis had to be carried out. First the infrastructure capacity of the warehouse was analysed, calculating the number of transformers and distribution panels, the average consumption for each distribution panel, and whether the balance between photovoltaic production and building consumption was positive. Then, a study of the physical work was conducted to determine the types of trenches and connections to use for linking photovoltaic production to the power plants and to the heavy charger locations. Finally, the most important part was the analysis of the photovoltaic panel production: how much electricity is produced by the photovoltaic panels, the measurement and trend of consumption and production peaks, and the simulation to evaluate whether, during the peak due to charging the electric forklifts inside the warehouse, the trucks could also be connected while remaining at 100% of photovoltaic production. After all these analyses and obtaining authorization from DEWA, the electricity authority working in Dubai, IKEA considered the project feasible and calculated that the electricity production can meet the electrical needs of the depot along with those of the charging stations. Therefore, IKEA has implemented, since June 2024, charging stations in the Dubai DC to power the BEVs dedicated to the previously described handling. The installation of charging systems is an essential part of the use of electric vehicles. Following a detailed study of the feasibility of using electric vehicles for short distances between 100 - 200 km, the availability of the vehicles is there with the only limitation being the 3.5 times higher price compared to diesel. In addition to the need for charging infrastructures within the distribution sites and along the network covered

	by the vehicles, planning within the supply chain is essential because electric vehicles require an overhaul of the entire supply chain and working methods at the level of transport, warehouse and shop as the final receiver.
OBJECTIVES	- Reducing emissions; - Reducing operating and maintenance costs; - Reducing noise pollution; - Reducing dependence on fossil fuels; - Improving the energy efficiency of vehicles
BENEFITS	The installation of charging stations at the Dubai DC contributes to a 15% reduction in total CO2 emissions from transportation, in absolute terms, for the fiscal year 2030 compared to the reference year of 2017. Achieving this goal is part of the "People and Planet Positive" sustainability strategy of the INTER-IKEA Group and the INGKA Group.
SECTOR	GDO (Large Organized Distribution)
YEAR OF IMPLEMENTATION	2024
FIND OUT MORE	https://www.ikea.com/global/en/images/IKEA_SUSTAINABILITY_Report_FY_23_20240125_1b190c008f.pdf https://www.ikea.com/global/en/images/IKEA_Supply_Chain_Operations_Decarb_Catalogue_0babe5a7f0.pdf