



Project: Building the Electric Mobility Ecosystem in Cambodia

Project Timeframe: August 2020 – January 2022

Successful Story

CAMBODIA CLIMATE CHANGE ALLIANCE

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EMPOWERING CAMBODIA'S GREEN FUTURE: ADVANCING THE ELECTRIC MOBILITY ECOSYSTEM FOR SUSTAINABLE TRANSPORTATION

Globally, prominent corporations are hastening the adoption of electric mobility by converting their fleets to electric vehicles (EVs) and deploying charging infrastructure. According to the [International Energy Agency](#), more than 10 million electric cars were on the world's roads in 2020 with battery-electric models driving the expansion. In Cambodia, the number of vehicles is increasing at a rate of 14% annually, with 3.2 million vehicles registered in 2016. [The Cambodia Climate Change Strategic Plan 2014 – 2023](#) acknowledges transportation as a primary energy consumer and consequently, a significant contributor to carbon emissions in the country. Motorbikes are particularly notable contributors to pollution, outnumbering cars on Cambodian roads almost sixfold. EVs produce no direct air emissions and emit significantly less CO₂ than internal combustion engine vehicles.

H.E. Dr. Vann Monyneath, Under Secretary of State, former Secretary General of General Secretariat of the National Council for Sustainable Development, Ministry of Environment, explained the importance of utilizing EVs for climate change resilience in the transport sector to promote electric mobility and climate-friendly transportation:



H.E. Dr. Vann Monyneath, Under Secretary of State, former Secretary General of General Secretariat of the National Council for Sustainable Development, Ministry of Environment

“People often use gasoline-powered vehicles, but they can also switch to electric or battery cars to reduce urban pollution. Otherwise, they can turn to renewable energy such as solar power, H.E. Dr. Vann Monyneath stated in the [interview as of May 2022](#).”



The Ministry of Environment, in collaboration with [the UNDP Cambodia](#), the European Union, and Sweden within the Cambodia Climate Change Alliance - Phase 3 (CCCA3) programme, has been working to assist the nation in developing a strategy for enhancing and expanding its EV infrastructure. Additionally, the CCCA3 is supporting the Ministry of Public Works and Transport in formulating regulatory guidelines to promote the adoption of electric motorbikes and incentivize their utilization by the private sector, such as for delivery services.

Electric Mobility Project Implemented by EnergyLab:

From August 2020 to January 2022, the CCCA3 provided support for the [Electric Mobility Ecosystem Project](#). Implemented by EnergyLab, this project aims to enhance the adoption and usage of electric motorbikes and to mitigate the effects of climate change by reducing greenhouse gas emissions from the motorbikes. Additionally, the project is committed to increasing public awareness and educating individuals on the benefits of EVs through initiatives such as an EV showcase, online promotional campaigns, and targeted events.

EnergyLab, a well-recognized NGO focused on energy efficiency and renewable energy solutions, is the main implementer, in partnership with Oyika Co., Ltd, which has developed an innovative battery swap infrastructure and technology for electric motorbike sharing that has been developed in the past 18 months and deployed in Cambodia since 2019.

Why is Electric Mobility Important in Cambodia?

According to [Cambodia's Long-Term Strategy for Carbon Neutrality \(LTS4CN\)](#), the country aims to penetrate EVs around 70 percent for motorcycles and 40 percent for cars and urban buses by 2050. Shifting towards electric transportation will aid in decreasing greenhouse gas emissions from the transportation industry, given its significant role in reducing air pollution, mitigating climate change, and boosting economic growth.

Reducing Air Pollution: The 2023 [Environmental Performance Index \(EPI\)](#) report places Cambodia at 132 of 180 countries for air quality. The growing number of imported second-hand vehicles and the increasing motorization rate in Cambodia significantly contribute to air pollution. Emissions from outdated and inefficient vehicles lacking pollutant mitigation technology severely compromise the air quality in urban areas, as reported by the Global Green Growth Institute. With vehicle ownership predicted to grow in line with Cambodia's economic growth and development trajectory, adopting EVs and a wider electric mobility ecosystem will help reduce air pollution and improve the quality of life in urban areas.



Climate Change Mitigation: The transportation sector significantly contributes to global greenhouse gas emissions. According to the [Asian Transport Outlook](#), in Cambodia from 2000 to 2015, road transportation accounted for 83.7% of fossil CO2 emissions from the transport sector. Additionally, between 2016 and 2022, road transportation contributed 83.9% to these emissions. In response to climate action to promote EVs in Cambodia, in December 2021, the Royal Government of Cambodia set a goal of achieving a carbon-neutral economy by 2050. [The Roadmap for the Development of an EV Charging Station Network in Cambodia](#) analyses three scenarios for the uptake of EVs in Cambodia spanning from 2022 to 2050. Scenario EV1 is the conservative scenario, EV2 is a more realistic uptake scenario, and EV3 is the aspirational scenario aligned with LTS4CN objectives.

As of December 2023, [the Ministry of Public Works and Transport](#) reported that the number of EVs in Cambodia is 1,489 units, including 683 four-wheeler EVs and 410 three-wheeler EVs. To mitigate climate change caused by transportation, Cambodia aims to adopt important technologies within the transportation sector, including digital systems for Monitoring, Reporting, and Verification of greenhouse gas emissions, spatial planning tools for network management—including traffic control—and emerging technologies for electric mobility, stated in [Cambodia's Updated Nationally Determined Contribution \(NDC\)](#). Unlike traditional vehicles that rely on fossil fuels, EVs do not emit harmful greenhouse gas emissions that contribute to climate change.

Boosting Economic Growth: Importing fossil fuels to Cambodia is expensive. It is also more expensive to run a vehicle on petrol or diesel than electric, and as they have far fewer moving parts, they are also cheaper to maintain. According to the Global Green Growth Institute's report on "[Promoting Green Mobility through Electric Motorbikes in Cambodia](#)" states that driving an electric motorbike for 100 km costs about eight to 10 times less than driving an internal combustion engine motorcycle for the same distance.

As of June 2021, EnergyLab conducted a [public survey on EVs](#) to understand Cambodian people's perception and usage of EVs in the country. The survey results indicate that the market for EVs is growing, and they are becoming more prevalent in Cambodia. However, there appears to be a barrier for them to compete in the Cambodian market because the public does not often hear about EVs. As the result of the survey: "Out of 103 responses, 97% of respondents reported having heard of EVs, but only 12.5% have experienced riding them."

To raise public awareness and foster policy discussions regarding the development of electric mobility, EnergyLab organized the [Electric Mobility Showcase](#), which is an annual event aimed at bolstering Cambodia's electric mobility market growth and facilitating the transition to EV adoption.



Ms Delphine Vann, Country Director, EnergyLab

“The Electric Mobility Showcase stands as the largest event in Cambodia. We have over 15 companies collaborating to gather diverse aspects of crucial stakeholders, including government entities, private sector representatives, and development partners. Together, they engage in various activities such as panel discussions, exhibitions, test driving sessions, and presentations, aimed at shaping the roadmap for electric mobility development in Cambodia,” stated Ms Delphine Vann, Country Director, EnergyLab.

Why Do We Need to Switch to Electric Vehicles?

Mr Prak Chansophearak, Sales Supervisor, BYD Phnom Penh Authorised Dealer as a car enthusiast and environmentalist, explained: “I have spent years researching both petrol and EVs, noticing the harmful effects of gasoline emissions on the atmosphere and human health. Therefore, I decided to switch to an electric car over two months ago. Since then, I found that it not only saves me money but also offers a quiet driving experience without the noise and toxic fumes associated with traditional cars. By choosing the EV, I believe I can make a significant contribution to our city’s environment. I hope that in the future, more Cambodians will opt for electric cars, leading to a cleaner Phnom Penh with no harmful emissions.”

Ms Udom Pisey, EV Manager, Car4you Co Ltd., stated: “I am passionate about EVs, the latest technology offering affordable prices and providing people with the opportunity to own and use new vehicles. This not only helps them save on costs but also reduces maintenance expenses and cuts down on air pollution, thus contributing to a cleaner, greener, and healthier city for all of us.”



Mr Touch Damit, a Food Delivery Agent

Mr Touch Damit, a food delivery agent and an electric motorbike user shared his experience of using an EV: “I use an EV because I want to gain new experiences and, at the same time, contribute to minimizing the use of petroleum. Compared to gas-powered motorcycles, I find electric motorbikes easier to use due to their lightweight and ease of commuting in the city.”

“From my experience riding an EV, I have not encountered any issues while riding in the rain or with running out of battery. I never feel anxious about running out of battery while riding because even if it does happen, the team at Go2 will promptly swap out the batteries for me,” Damit added.

Damit emphasized that after using an EV, he will continue using one for his daily delivery work, noting that operating costs are lower than a gasoline-powered motorcycle.

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Key Milestone of the Electric Mobility Ecosystem Project:

Over the course of the 20-month project, the rideshare of electric bikes led by Oyika resulted in a reduction of 22.7 tCO₂ equivalent in greenhouse gas emissions. However, the number of rideshares alone could not achieve the targeted reduction in greenhouse gas emissions of this project. Oyika has developed strategies to target both Business-to-Business (B2B) and Business-to-Consumers (B2C) sectors, such as food delivery. Through the B2B sale, an additional reduction of 63.5t CO₂ equivalent was achieved in addition to the rideshare. The total greenhouse gas emission reduction resulted from the rideshare of EVs covering a distance of 484,000 kilometers.

EnergyLab collaborated with Oyika Co., Ltd to execute a range of activities. These included modifying 300 e-bikes across three phases to ensure power control and helmet access through the development of a mobile app for ridesharing. Additionally, a motorbike relocation team was created and deployed to optimize vehicle usage, leading to the launch of a motorbike ride-sharing pilot.



EnergyLab also addressed primary barriers by producing educational videos and running online marketing campaigns to increase the visibility of career opportunities related to e-bikes and promote understanding and benefits of EVs. Furthermore, focus group workshops were conducted to validate understanding of barriers to EV adoption, and workshops were held with government officials from the Ministry of Public Work and Transport, the Ministry of Economy and Finance, and the National Council for Sustainable Development.

As a result, EnergyLab has boosted the usage of electric motorbikes, raised public awareness and engagement with electric vehicles, enhanced the visibility of careers in the electric vehicle industry, and conducted capacity-building sessions for relevant officials on the benefits of electric bikes for Cambodia.

For the scale-up plan aims to increase the number of EVs, it is essential to expand the charging infrastructure and refine regulations to promote the EV market in Cambodia. This initiative involves hosting regular discussions and collaborations with relevant ministries such as the Ministry of Public Works and Transport, the Ministry of Economy and Finance, Electricite Du Cambodge, and the Ministry of Environment, and supporting partners like GIZ, the Cambodia Automotive Industry Federation, and the Global Green Growth Institute to develop favourable policies for electric vehicles and charging infrastructure.

Moreover, by focusing on B2B for rapid mass adoption of electric motorbikes and targeting young professionals for individual adoption, Cambodia can accelerate market growth. Additionally, enhancing user experience with EVs requires increasing rideshare services featuring EVs, enabling more people to experience them and facilitating their adoption. Please [click here](#) to learn more about this initiative.

CAMBODIA CLIMATE CHANGE ALLIANCE - PHASE 3 (CCCA 3)

The Cambodia Climate Change Alliance (CCCA)-Phase III builds on the achievements of the first and second phase (2010-2014, 2014-19) and provides a unified engagement point to pool resources for the mainstreaming of climate change in national and sub-national policies and programmes. CCCA is a joint initiative of the Royal Government of Cambodia and a partnership between UNDP, the European Union and the Swedish Government. It is implemented by the National Council for Sustainable Development (NCS) and managed by its Department of Climate Change to address climate change in Cambodia.

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