



CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA



Discover Laos

- Luang Prabang, Laos
- Tourism
- www.discoverlaos.today
- ★ Analysis period: 2020-2024

Pioneering Renewable Energy and Electric Vehicles in Tourism

Business Spotlight

Discover Laos is a well-established tourism company in Laos, which decided to transition to using electric vehicles (EV) in 2020. Given the limited charging infrastructure and the additional costs, this initiative was motivated mainly by the desire to reduce environmental impact and drive innovation. High fuel costs became an additional factor that incentivised the company to further invest in renewable energy. In 2023, Discover Laos installed 120 solar panels in its MyBanLao hotel property in Luang Prabang. In 2024, charging stations were installed to service the entire fleet of 160 EVs for tourists and hotel operations, ranging from motorbikes to hotel buggies. In parallel, Discover Laos continues to pursue energy efficiency, including through the use of LED lighting and the adoption of passive solar cooling techniques.

Discover Laos is inspiring an industry transition and encouraging other establishments to switch to renewable energy and electric mobility. Laotian businesses may be incentivised by unreliable fuel supply and its high costs to switch to electric vehicles. However, greater open-mindedness towards EVs is needed, especially to surpass 'range anxiety' as charging infrastructure is at present only nascent.

In addition, and on a small scale, Discover Laos is putting into place an internal workshop to repair faulty batteries. The company is also envisaging end-of-life scenarios for the vehicle batteries, with the intent of giving them a second use for energy storage in hotel facilities. Even though renewable energy is still only in early development in Laos, it can already improve the economic circularity and resilience of hospitality businesses.



Keywords

Renewable Energy, sustainable tourism, Electric vehicles, Repair



Innovation

Product/service design, Use and maintenance, Endof-life management, Resource efficiency, Resource substitution

Analysis of Discover Laos

Context and baseline

Laos is a major hydropower exporter in the Mekong region and has become known as 'the battery of Asia', but the government is contracted to export hydropower from its large dams to its main investors, clients and neighbours before serving the national market. The country therefore suffers from energy instability, given that domestic power supply is dependent on seasonally available hydropower from small plants and fossil fuel-based power stations. Fossil fuel is expensive for all end-users and weighs heavily on the country's trade balance. Switching to renewable energy is thus not only a green choice, but is also becoming an economic and resilient choice for both consumers and businesses in Laos. The tourism sector in particular is being squeezed by high fuel prices for back-up power generation along with the desire to keep tourist destinations like Luang Prabang clean and attractive to visitors.

Innovation

Discover Laos, a tour operator and tourism business established in 2008, started offering electric vehicle (EV) rental services in Luang Prabang in 2020, and in 2023 opened its MyBanLao Hotel with 120 solar panels and a 193-kWh battery storage system for its back-up power needs, which was a first for a hotel. The roof-mounted panels cover the main buildings and parking lot. Power is stored and used in the property during power outages. MyBanLao also installed stand-alone solar powered mosquito traps, and outdoor and decorative lamps.



The EV rental business has experienced significant growth over the past five years, with the fleet expanding from 20 to over 160 vehicles, which

include various types of EVs such as E-scooters, E-bikes, E-buggies, golf carts, E-cars, and E-vans. Discover Laos installed a total of six charging stations located close to its properties and offices. It has now expanded operations beyond Luang Prabang to Vang Vieng and Vientiane. At the end of 2023, the country totalled 41 charging stations, with the majority located in the capital, Vientiane.

As the business grew, Discover Laos created a battery repair facility in 2024 to launch its Smart Tech Mall. Importing batteries from China became unreliable and it was not always feasible to send them back for repair because China does not easily allow re-imports. Upon exhausting of the battery life for mobile applications, Discover Laos plans to repurpose these for stationary solar power storage in its hotels.

Discover Laos has pioneered the scale up of solar power and electric vehicles in Laos. It is now developing circular solutions to keep the operational control of this high-investment venture through an in-house battery repair and maintenance workshop.

Circular Economy impact

Discover Laos contributes to the circular economy primarily through the substitution of non-renewable energy by renewable (solar) energy, i.e. resource substitution. It also advances the more efficient use of energy and other resources, i.e. resource efficiency.

The 120 solar panels at MyBanLao generated a total of 59,777 kWh during 2024, which reduced CO_2 emissions by 22 tonnes compared to using diesel for back-up power generation. Solar power now provides on average 25% of total electricity use by the company. Additionally, solar power is being used in stand-alone solar powered outdoor lights, mosquito traps and other small devices around the hotel; however, their energy use is not being monitored separately.



The majority of the investments at Discover Laos is directed towards imported equipment, such as EVs, solar panels, and batteries, with a total investment of approximately USD 3 million for both EVs and solar power. Using solar power yields a 20% reduction in power costs, and these annual returns amount to 8%-10% of the total investment, resulting in an estimated payback period of 10-12 years.

The back-up power for the hotel operations is produced entirely from green energy. Solar-charged batteries have replaced diesel generators, which offset greenhouse-gas emissions from back-up power generation and the grid. Moreover, as pioneers in the green energy and EV sectors in Laos, the company is poised to capture a substantial market share, and this is driving market growth.



Since its inception in 2020, Discover Laos has been embarking on a five-year journey towards green energy and sustainability. Future plans include establishing a Smart Tech Mall in Vientiane, which will feature comprehensive EV services and a Green Energy Centre.





Implementation

In recent years, the government in Laos has expanded solar, wind and biomass energy as part of the strategy to diversify energy sources and ensure energy security. Legislation to support the nationwide implementation of the feed-in-tariff rate is now needed to make solar and wind energy more attractive and competitive with low-cost grid power.

The Lao Government has thus set a goal for electric vehicles to make up at least 1% of the total number of vehicles in 2025 and reach at least 30% by 2030. To realise this goal, Laos has adopted preferential policies to prioritise the use of electric vehicles, such as not restricting EV imports, and reducing the road tax by 30% for electric vehicles compared to fossil-fuel vehicles. At the same time, the charging infrastructure needs to expand to reduce the phenomenon of 'range anxiety' that prevents many drivers from adopting electric vehicles.

Takeaways

As a pioneer in EV rentals and solar power generation and use, Discover Laos has learned that adopting sustainable practices can lead to innovative and profitable products and services that benefit visiting tourists, the community, and the environment - along with the company itself. Another valuable lesson learned is that investing in training and education for employees and community members is vital for the success of circular economy initiatives. Though the path to success seemed challenging at the outset, it is now clear to Discover Laos that circular businesses can drive sustainable progress.







Acknowledgements

This business case study was prepared for the ASEAN Circular Economy Business Alliance (ACEBA) within the framework of the Technical Advisory project: Mobilising Business Action for Circular Economy in the ASEAN countries under the EU SWITCH-Asia Policy Support Component for the sole purpose of documenting and analysing business experiences with circular economy. ACEBA is an ASEAN-centric and business-led initiative that fosters business leadership and action on circular economy in Southeast Asia. ACEBA is an initiative of ARAIBA Sdn Bhd, a not-for-profit business organization that promotes responsible and inclusive business, in collaboration with national business membership organizations and with technical advisory of the EU SWITCH-Asia Policy Support Component.

The business case was produced by Elodie Maria-Sube (key expert) and reviewed by Rene Van Berkel and Thomas Thomas (regional experts and ACEBA co-convenors) on the basis of information provided and validated by Discover Laos, Lao People's Democratic Republic.

Disclaimer

The content of this publication is the joint responsibility of Discover Laos, Lao People's Democratic Republic and the expert team. This publication does not constitute an endorsement of Discover Laos, Lao People's Democratic Republic by the European Union nor any of the partners of the SWITCH-Asia Policy Support Component, nor necessarily reflect their views.



https://www.aceba.co/



info@aceba.co



www.switch-asia.eu



EU SWITCH-Asia Programme @EUSWITCHAsia



SWITCH-Asia @SWITCHAsia



SWITCH-Asia Official @switch-asia-official