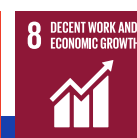


**IMPACT SHEET:** Promotion of Sustainable Energy Practices in the Garment Sector in Cambodia ('EU-Switch Garment')

## Promotion of Sustainable Energy Practices in the Garment Sector in Cambodia



*Increasing the competitiveness and decreasing the environmental impact of the Cambodian garment industry through sustainable production practices such as efficient technologies, renewable energy and good operations management.*



## PROJECT BACKGROUND

Over the two decades, Cambodia experienced a remarkable transition, achieving lower middle-income status in 2015 and aspiring to reach upper middle-income status by 2030. Fueled by garment exports and tourism, the country's economy recorded an average annual growth rate of 5.4 percent in 2023, with projections of 5.8 percent for 2024. The garment sector is one of the four pillars of Cambodia's economy and serves as the largest employer in the industrial sector, contributing 10% of GDP, 56% of total exports, and providing 771,964 jobs—75.9% of which are held by women. Overall, the garment sector supports the livelihoods of at least 2.5 to 3 million people, including both direct and indirect beneficiaries.

However, in 2020, the sector was severely impacted by the COVID-19 pandemic, experiencing supply disruptions and a significant drop in demand, which resulted in a contraction of 6.7%. Garment export value fell by 10% compared to 2019, and approximately 110 garment factories closed, leaving 55,174 workers unemployed. Recovery began in 2021, with the garment sector, including footwear and travel goods, rebounding to a 15.2% growth in exports, reaching USD 11.38 billion. However, the growth of the garment sector has led to substantial natural resource consumption and negative environmental impacts.

## CHALLENGE

The Ministry of Economic and Finance (MEF) emphasizes that the garment sector will remain a priority sector for Cambodia's economy for the next 10 to 20 years (UNIDO webinar, mid 2021). However, competition in the region is intensifying and, from the investors' perspective, Cambodia's competitive edge has weakened compared to Vietnam, Bangladesh and Myanmar. High energy costs, comparatively high minimum wage, lagging infrastructure, low productivity, and logistical challenges impact competitiveness and sustainability of the Cambodia GFT sector. At the same time, the growth of garment sector has resulted in the sizeable use of natural resources and caused a negative impact on the environment. This is mainly due to usage of fossil fuel-based energy sources. Moreover, the factories have limited access to energy efficient technology while lacking awareness and training on energy management. To make the Garment sector more sustainable, there is a need for fundamental changes by mainstreaming resource efficiency and circular economy in Garment manufacturing and processing to minimize/mitigate the detrimental environmental impacts of the Garment industry and bring long-term sustainability.

In the wake of the COVID-19 pandemic, it has become increasingly evident that the Cambodian garment sector must enhance its competitiveness in the global supply chain by prioritizing sustainability, as required by international brands. Identifying energy efficiency measures to reduce energy consumption is critical, as energy is the largest contributor to emissions within the garment industry. By reducing energy consumption and integrating renewable energy at the individual industry level, it is possible to achieve net-zero emissions.

## PROJECT OBJECTIVES

In light of the challenges outlined above, EU-SWITCH Garment, a four-year project titled "Promotion of Sustainable Energy Practices in the Cambodian Garment Sector" supported garment manufacturers with the uptake of energy efficiency and renewable energy interventions to reduce environmental impact and production cost, thus enhancing competitiveness. The project aimed at increasing competitiveness of the Cambodian garment industry through investment in sustainable energy technologies and practices.

The specific objectives included:

- Support the GFT industry in developing regulatory and enforcement measures
- Stimulate demand for sustainable technologies
- Increase the supply of technologies, services and financial solutions

## TARGET GROUPS

- Garment footwears and travel goods factories (small and medium enterprises) and Textile Apparel Footwear Travel Goods Association in Cambodia (TAFTAC)
- Ministry of Environment (MOE) and Ministry of Industrial, Science, Technology & Innovation (MISTI)
- Energy service providers (ESP)
- International Brands
- Local banks

## PROJECT ACTIVITIES

### Regulatory measure

Model Green Factory Program (MGFP), a voluntary guideline for the Textile, Apparel, Footwear & Travel Goods Association in Cambodia (TAFTAC), is designed to be led and implemented by TAFTAC to support its 750 member factories to go green and increase investment in sustainable energy. The project team also contributed to several key national policies including the revised Nationally Determined Contributions (NDC, December 2020), National Energy Efficiency Policy (NEEP) (2022), Cambodia's Roadmap for Sustainable Consumption and Production for the period of 2022-2035.

### MRV tool

Measurement, Reporting and Verification (MRV) tool is developed by researching on global best practices on MRV and then propose a suitable tool for the Cambodian garment industry. The tool aims to enable factories as well as TAFTAC in monitoring and reporting the progress made by factories under MGFP.

## Factory assessment and capacity building

Energy audit activities included factory identification, recruitment meetings, commitment meetings, pre-audit data collection and training, hiring energy audit experts, conducting energy audits, finalising the audit reports and presenting the same to the factories.

50 energy audits were conducted, resulting in a commitment of USD 2.63 million for investments aimed at implementing the recommendations from these energy audits during the project implementation period. Under the capacity building activities, training materials for three short courses were developed and 221 factory employees were trained.

## Finance

The project team has consulted with various development finance institutions (DFIs), banks, energy service providers, and investment firms. All stakeholders expressed interest in a financing scheme to address existing market barriers, such as high interest rates, substantial collateral requirements, and short tenors. After completing the Financial Model and Investment Memorandum, the project team presented the findings to all key stakeholders. Ultimately, the team explored the possibility of establishing a financing scheme with 10 local banks, 9 DFIs, and 10 energy service providers.

## IMPLEMENTATION CHALLENGES

**Early Market Challenges & Nurturing Local Experts:** At the project's inception, the sustainable energy market in Cambodia was underdeveloped, making factory recruitment difficult. Key stakeholders, including factory owners, required substantial awareness-building. The pandemic caused factory shutdowns and delays, impacting international audit teams' work. Efforts to hire local energy auditors were unsuccessful due to a lack of certified auditors, highlighting the need to build a more competent pool of national auditors. However, the project team came up with technical experts from a local institution to help collecting initial data and maintain the momentum that was created through commitment meetings with the factories.

**Employee Turnover:** Garment factories had high employee turnover which created communication gap between new factory employees and project team. Additionally, GGGI and GERES had significant employee turnover in the first two years. However, the project team ensured smooth communication with new factory employees and managed proper handover with well-coordinated replacement of project team members.

## LESSONS LEARNED

Key lessons learned during project implementation are listed below:

- Redesigning the regulatory instrument under TAFTAC's leadership was more effective than establishing national regulations, demonstrating the importance of aligning with

local contexts for policy success and ensuring that the sector remains competitive while minimizing its environmental footprint.

- The sustainability of a garment business is significantly influenced by the terms of the supply contract between the industry and the buyer, which directly impacts long-term sustainable energy investments decisions.
- Another critical factor affecting investment decision is the ownership structure of the industrial buildings; when factory buildings are leased, it becomes challenging to make long-term investment commitments

## PROJECT ACHIEVEMENT

The EU-SWITCH Garment project has made significant strides in promoting sustainable energy practices within Cambodia's GFT sector, laying the groundwork for continued progress toward greener and more efficient manufacturing. The project achievements are included:

**Regulatory Component:** The Model Green Factory Program (MGFP), accompanied by a Monitoring, Reporting, and Verification (MRV) system adopted by TAFTAC and recognized by both MoE and MISTI.

**Energy Audits & Capacity Building:** Conducted energy audits for all 50 participating factories, from which 22 factories (exceeding the target of 20) had invested USD 2.63 million (target: USD 2 million) to implement energy audit recommendations. 221 factory employees (26% female) were trained through a series of sessions on sustainable energy practices.

**Pilot Projects:** Switch garment supported the scale up of Wood AI and a Sustainable Biomass pilot project was developed in collaboration with 7 global brands to identify authorised wood species and promote more sustainable biomass sourcing.

**Finance Component:** Developed and shared a financial model and investment memo with local financial institutions to encourage sustainable energy investment. The project also helped establishing an ESCO Forum in partnership with EuroCham and UNDP to raise awareness about the Energy Services Company (ESCO) model.





**Mahfuzur Rahman**  
GGGI Cambodia



The EU-Switch Garment Project began with challenges in recruiting factories for complimentary energy audits. However, by the end of the project 22 factories were convinced to invest \$2.63 million in implementing the audit recommendations. This heightened awareness, combined with the launch of the Model Green Factory Program, building capacity of 221 factory employees will provide an excellent platform for the RGC to effectively implement the National Energy Efficiency Policy (NEEP).



“According to Switch Garment’s energy audit recommendation, we now reuse the remaining steam by putting it back into the water tank. In the past, our water tank temperature was only 31 degrees Celsius, but now it goes up to 59 degrees Celsius, which reduces our firewood consumption by almost 20 percent.”

**Mr. Pen Sovatthana**  
HR & Compliance Manager, Evergreen Garment Co., Ltd.



“Our factory joined capacity training workshops. Our core staffs joined and learned how to save energy. They then installed auto drain valve which helped us save energy. They also installed capacitor which reduces the inconvenience when operating electrical equipment. It also saves electricity. We would like to thank the project. Our factory got a chance to improve energy saving.”

**Ms. Chan Veasna**  
Office Manager, Raytech Co., Limited



## Long-term project sustainability

Ensuring the long-term sustainability of project activities has always been a central focus of the project's implementation strategy. Building on the strong partnerships and sense of ownership cultivated with TAFTAC and CGTI, the project has proposed that these local institutions lead the operationalization of the MGFP and deliver training programs aimed at developing sustainability officers within the GFT sector. Additionally, brands have committed to furthering their sustainable biomass initiatives, while local banks will oversee the financing scheme developed by the project team, offering tailored financial packages to support the adoption of sustainable energy solutions. To ensure the ongoing sustainability of the MGFP, government endorsement is sought to establish it as an industry-led program, thereby securing formal recognition for green factories by relevant ministries.

## Project contributions to Climate Change Mitigation and SDGs

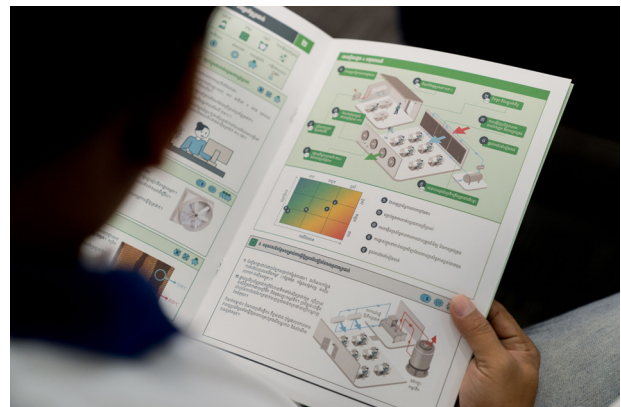
The project directly contributed to achieving SDG 7&12. The project promoted the implementation of sustainable energy measures recommended in the energy audit reports. The energy audits conducted by the project demonstrated an overall energy saving potential of 6.31% in garment industries. The energy profile data and recommended measures would help RGC in identifying Designated Energy Consumers as well as implementing the action plans as stated in the NEEP. On the other hand, the PDP has a target to generate 17.9% from solar while the energy audit reported the potential of the same in garment industries in Cambodia.

The overall objective of the project was to reduce greenhouse gas emission as well as reducing energy costs. By May 2024, the project contributed to total emission reduction of 5,733 tCO<sub>2</sub>e, thanks to the implementation of energy efficiency and renewable energy measures in 22 factories. Additionally, 221 factory employees (26% female) were trained on sustainable energy practices.

The project contributed to **SDG 3** (Good health and well-being) by improving the well-being of workers. This included the adoption of better ventilation, adequate lighting, and energy-efficient equipment, which are often more modern and incorporate enhanced safety features. The **SDG 5** (Gender equity) was considered by ensuring 30% of female employees to participate the training on sustainable energy practices and organizing 2 female-led pilot factory visits. The implementation of sustainable energy measures reduced energy cost for producing the same amount of garment product contributing to **SDG 8** (decent work and economic growth).

# Impacts at a Glance

<b>Economic Impact</b>	<ul style="list-style-type: none"> <li>• The project introduced new energy-efficient technologies, such as BLDC fans, to replace the conventional systems used in industry.</li> <li>• The project delivered capacity-building training on the ESCO business model and established an ESCO ecosystem. The market has more awareness on ESCO business model than before.</li> <li>• Savings from electricity: USD 288,580 (based on grid tariff). Wood savings: USD 7,120.</li> </ul>
<b>Social Impact</b>	<ul style="list-style-type: none"> <li>• 79 full-time equivalent new jobs created.</li> <li>• The project identified a significant underrepresentation of women in decision-making positions, particularly in the middle management roles within factories. The project aimed to involve a high percentage of women. Out of four pilot factories, two female-led factories were selected.</li> </ul>
<b>Climate Benefits</b>	<ul style="list-style-type: none"> <li>• 2,106,427 kWh reduction in electricity.</li> <li>• 5,773.44 tonnes of CO<sub>2</sub>e reduction in GHG emissions.</li> <li>• Used 5,257,473 kWh of renewable energy (rooftop solar and solar streetlight).</li> <li>• 1,219 tonnes reduction in wood consumption.</li> </ul>
<b>Green Finance</b>	<ul style="list-style-type: none"> <li>• A concessionary financing scheme comprising of loan, technical assistance is being discussed.</li> </ul>
<b>Target Group Engagement</b>	<ul style="list-style-type: none"> <li>• 50 GFT manufacturing units engaged.</li> <li>• 300+ factory employees took part in seminar, workshop and training.</li> <li>• 10+ energy service providers took part in trainings and workshops.</li> <li>• 10+ local banks took part in trainings, workshops and consultation meetings with development financial institutions.</li> <li>• Matchmaking event to connect factories, energy service providers and financial institutions.</li> <li>• Three short courses on sustainable energy practices.</li> <li>• Training on ESCO business model.</li> <li>• Visits to demonstration sites, exposure visit to Vietnam.</li> </ul>
<b>Policy Development</b>	<ul style="list-style-type: none"> <li>• Types of policy processes engaged in: Updated Nationally Determined Contributions, National Energy Efficiency Policy (NEEP) (2022), Cambodia's Roadmap for Sustainable Consumption and Production for the period of 2022-2035</li> <li>• Policy recommendation put forward: Model Green Factory Program, a guiding tool for industry-led sustainable energy program</li> <li>• More than 20 contacts/events with policymakers</li> </ul>





## FUNDING

EUR 3,445,633  
(EU Contribution: € 2,995,748)



## DURATION

2020 - 2024



## PARTNERS



Global Green Growth Institute (GGGI)



Textile, Apparel, Footwear & Travel Goods Association in Cambodia

Textile Apparel Footwear Travel and  
Goods Association of Cambodia  
(TAFTAC)



Geres



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