

**KINGDOM OF CAMBODIA**  
**Nation Religion King**

**Kick-off Ceremony on**  
**Global Cleantech Innovation Programme: Accelerating cleantech innovation and**  
**entrepreneurship in startups and SMEs in Cambodia (GCIP Cambodia)**  
**UNIDO Project No.: SAP 190057**

**Project Title:** Global Cleantech Innovation Programme: Accelerating cleantech innovation and entrepreneurship in start-ups and SMEs in Cambodia (GCIP Cambodia)

**I. Attendees:**

No.	Name	Position	Remark
1	H.E. Tin Ponlok	Secretary of State, and Deputy Chairman of Project Steering Committee (PSC)	VVIP
2	H.E. Dr. Hul Seingheng	Director General, and Member of PSC	VIP
3	H.E. Dr. Seng Sopheap	President of CADT, and Member of PSC	VIP
4	Mr. Sok Narin	Country Representative, UNIDO Cambodia	VIP
5	H.E. Dr. Taing Nguonly	Executive Director of Techo Startup Center (TSC), and Secretary of PSC	VIP

- 4 presenters who delivered a presentation during the ceremony as follows:

No.	Name	Position	Topic
1	Mr. Chong Vathinh	Project Coordinator of GCIP Cambodia	GCIP Cambodia Overview and GCIP Accelerator Guideline Overview
2	Mr. Lay Vathna	Research Development Coordinator from CADT	Internet of Things and Cleantech: Smart Agriculture
3	Ms. Chin Sonita	Startup Program Manager from EnergyLab	Cleantech Industry in Cambodia
4	Mr. Sok Seyla	Deputy Director of Department of Science and Technology, General Directorate of Policy and Strategy, Ministry of Environment	Policy Instrument to Support Clean Technology in Cambodia

- 2 sharing sessions from two cleantech startups during the ceremony as follows:

No.	Name	Position	Topic
1	Ms. Chin Ol	Project Manager from SOGE Cambodia	SOGE Cambodia
2	Ms. Neak Sokhim	Chief Executive Officer/Co-Founder from CAM-SCIENCE	CAM-SCIENCE

- 2 GCIP Global Team who attended the ceremony via Zoom during the ceremony as follows:

No.	Name	Position	Remark
1	Mr. Naoki Torii	Project Manager, UNIDO, Vienna, Austria	
2	Ms. Julia Oberreiter	Project Management & Resource Mobilization Specialist, UNIDO, Vienna, Austria	

- 82 general participants as listed in the **List of Confirmed Participants** as attached herewith, various cluster groups including representatives from Startup Cambodia Program such as relevant Ministries, Development Partners, Corporates, Investors, Incubators, NGOs, Service Providers, Universities, Journalists, and Startups attended the ceremony.

## II. Agenda:

Time	Activities	Presenter(s)
1:30 – 2:00 PM	Registration & Arrival of VIP Guests	
2:00 - 2:05 PM	Opening Ceremony and National Anthem	
2:05 - 2:15 PM	Reporting Speech	<b>H.E. Dr. TAING Nguonly</b> Executive Director of Techo Startup Center, Secretary of the Project Steering Committee
2:15 - 2:25 PM	Welcome Remarks	<b>Mr. SOK Narin</b> Country Representative, United Nations Industrial Development Organization in Cambodia

2:25 - 2:40 PM	Opening Remarks	<b>H.E. TIN Ponlok</b> Secretary of State, Ministry of Environment, and Deputy Chairman of the Project Steering Committee
2:40 – 3:00 PM	<b>Photo Session, Coffee Break and Networking (20mins)</b>	
3:00 - 3:30 PM	GCIP Cambodia Overview and GCIP Accelerator Guideline Overview	<b>Mr. CHONG Vathinh</b> Programme Coordinator, Techo Startup Center
3:30 - 3:50 PM	Internet of Things and Cleantech: Smart Agriculture	<b>Mr. Lay Vathna,</b> Research Development Coordinator, Cambodia Academy Digital Technology (CADT)
3:50 – 4:10 PM	Clean Tech Industry in Cambodia	<b>Ms. Chin Sonita,</b> Startup Program Manager, EnergyLab
4:10 – 4:30 PM	Policy Instrument to Support Clean Technology in Cambodia	<b>Mr. Sok Seyla,</b> Deputy Director of Department of Science and Technology, General Directorate of Policy and Strategy, Ministry of Environment
4:30 - 4:50 PM	Sharing Session: Two Cleantech Innovations in Cambodia	<b>Ms. Chin Oi</b> Project Manager of SOGE Cambodia <b>Ms. Neak Sokkim</b> Chief Executive Officer/Co-founder of CAM-SCIENCE
4:50 - 5:00 PM	Closing Remarks	<b>H.E. Dr. TAING Nguonly</b> Executive Director of Techo Startup Center, Secretary of the Project Steering Committee

## 1. Reporting Speech by H.E. Dr. Taing Nguonly, Executive Director of Techo Startup Center (TSC), and Secretary of the Project Steering Committee (PSC):

**H.E. Dr. Taing Nguonly**, provided the reporting speech and extended a warm welcome to the presence of all excellencies, distinguished guests, ladies, and gentlemen. In his speech, **H.E. Dr. Taing Nguonly** highlighted the background of the project thoroughly, including the preparation of the project proposal, due diligence, project approval, and selection of the project executing entity, and emphasized the project objectives and four priority sectors that the project will be focusing on including agriculture, hospitality, manufacturing/creative, and industry-specific technologies such as renewable energy, energy efficiency, technologies that support a circular economy, innovations for green buildings, green manufacturing/industrial practices, and innovations in green logistics and transportation.

## 2. Welcome Remarks by Mr. Sok Narin, Country Representative, UNIDO Cambodia:

**Mr. Sok Narin**, provided the welcome remarks to all participants of the ceremony in which he highlighted the potential opportunity for startups and SMEs, especially the Cleantech Innovation Ecosystem through leveraging and linkage between all 15 countries who are also a part of the

Global Cleantech Innovation Programme (GCIP) including Cambodia, Indonesia, Kazakhstan, Moldova, Mongolia, Morocco, Namibia, Nigeria, Turkey, Ukraine, Uruguay, Pakistan, South Africa, Senegal, and Vietnam. Lastly, he expressed his gratitude toward all relevant stakeholders for their presence in the ceremony, and to TSC for making this ceremony possible.

### **3. Opening Remarks by H.E. Tin Ponlok, Secretary of State, Ministry of Environment, and Deputy Chairman of the PSC:**

This ceremony was presided over by **H.E. Tin Ponlok**. In the opening remarks, **H.E. Tin Ponlok** noted that this project will contribute to the reduction in greenhouse gas emissions and fossil fuel consumption, leading to an increase in green jobs, national capacity, and market developments that will incentivize and enable Cambodia to pursue a low-emission development trajectory, the screening project or solution are strengthened to improve the quality of the project or solution to get the fund, the enhancement of startup ecosystem as a whole and he also believes that cleantech innovation should have equal opportunities to realize their potential in every endeavor and every competitive opportunity.

### **4. Presentation on “GCIP Cambodia Overview and GCIP Accelerator Guideline Overview” by Mr. Chong Vathinh, Programme Coordinator, TSC:**

**Mr. Chong Vathinh**, delivered a presentation to elaborate in detail on the project background, its institutional arrangement, project structure, project timeline in 5 years, stakeholders, way forward in 2023, GCIP Mentors, and the GCIP Accelerator Guideline. In his presentation, he emphasized that there will be three cycles of the GCIP Cambodia Accelerator Programme in which TSC will work collaboratively with a partner to conduct each cycle of the programme. In addition, he added that a generic version of the GCIP Accelerator Guideline that was provided by the Network for Global Innovation (NGIN) will be modified and adapted with TSC's Techo Accelerator Programme Guideline to produce the GCIP Cambodia Accelerator Programme Guideline to ensure that it is fit for Cambodia context.

### **5. Presentation on “Internet of Things (IoT) and Cleantech: Smart Agriculture” by Mr. Lay Vathna, Research Development Coordinator, CADT:**

**Mr. Lay Vathna**, delivered a presentation to illustrate the context of Smart Agriculture, the advantages and disadvantages of IoTs and cleantech, and other initiative programs that are available in Cambodia including the Strategic Program for Climate Resilience (SPCR) supported by ADB, and Climate-Smart Agriculture.

**6. Presentation on “Cleantech Industry in Cambodia” by Ms. Chin Sonita, Startup Program Manager, EnergyLab:**

**Ms. Chin Sonita**, provided a presentation to highlight an overview of cleantech industry in Cambodia, existing cleantech startups/companies, the role of EnergyLab in supporting the growth of clean energy markets, and their initiatives including Clean Energy Week, SWITCH to Solar Startup Program, Electric Mobility Showcase, and Clean Energy Internship Program. Furthermore, she addressed the existing startups’ financial opportunities and challenges based on her experience through EnergyLab programs and hoped that future programs would build based on these challenges. In the end, she hopes to work collaboratively with the GCIP Cambodia program in the future to realize common goals including, promoting coordination and connectivity within the cleantech Ecosystem, and supporting the growth of cleantech innovation solutions.

**7. Presentation on “Policy Instrument to Support Clean Technology in Cambodia” by Mr. Sok Seyla, Deputy Director of the Department of Science and Technology, General Directorate of Policy and Strategy, Ministry of Environment:**

**Mr. Sok Seyla**, demonstrated during his presentation of the existing Royal Government of Cambodia’s strategic policies in pursuing carbon neutrality and low-emission, research ethic, and agenda in providing a guideline for the ethical conduct of the research to ensure that it is efficiently conducted and contributed to sustainable development. Additionally, he introduced the concept of Cambodia’s Guidelines and Certification for Green Buildings (CamGCGB) which would assess the building’s life cycle, sustainability factors including environmental, economical, and sociocultural, and overall performance. Besides this, he further emphasized other ongoing pilot demonstrations, including Technology Need Assessment in Sihanoukville’s Special Economic Zones, Promote Green Mobility through Electric Motorcycle in Cambodia, and others. In the future, the Ministry of Environment will be supporting and cooperating with all relevant stakeholders in implementing GCIP Cambodia as well as providing policy direction to GCIP Global as well.

**8. Sharing sessions from cleantech startups/SMEs “SOGE Cambodia and CAM-SCIENCE”:**

Both of the companies shared their respective company profiles and demonstrated the vision and mission, products, market validation, business model, achievements, team, and customer testimonials. Both companies expressed their excitement on the newly kick-started GCIP Cambodia and recognized this support as crucial to further develop and scale their business by

leveraging the network and partnership in the cleantech ecosystem both nationally and internationally.

**9. Closing remarks by H.E. Dr. Taing Nguonly, Executive Director of TSC, and Secretary of the PSC:**

**H.E. Dr. Taing Nguonly**, expressed his gratitude towards the Global Environmental Facility (GEF) and UNIDO for granting their utmost support and collaboration in organizing this ceremony, and his profound thanks to all relevant stakeholders for participating in the Kick-off Ceremony. Moreover, He highlighted the context of GCIP Cambodia, Startup Cambodia, and the importance of creating a healthy, robust, and vibrant ecosystem. And, he urged representatives from all relevant stakeholders to continue their efforts and collaboration in providing support and building a healthy, and vibrant startup ecosystem in Cambodia. In this regard, **H.E. Dr. Taing Nguonly** has concluded the Kick-off Ceremony which has proceeded smoothly and achieved the expected outcomes with informative presentations and experience sharing of cleantech startups among participants.

Phnom Penh, 26 January 2023

Prepared by



**Chong Vathinh**

Project Technical Expert and Coordinator



Reviewed by

**Dr. Taing Nguonly**

Secretary of the Project Steering Committee


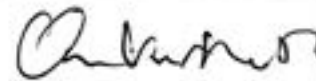
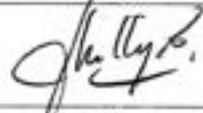







Seen and Approved by

**Dr. Kong Marry**

Under Secretary of State  
Ministry of Economy and Finance and  
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List of confirmed participants  
 Kick-off Ceremony on  
 Global Cleantech Innovation Programme: Accelerating cleantech innovation and entrepreneurship in start-ups and SMEs in Cambodia (GCIP Cambodia)  
 Project Reference: UNIDO Project No.: SAP 190057  
 Tuesday, January 24, 2023  
 2:00 PM (Cambodia Time) At Hyatt Regency Phnom Penh  
 (Last Updated at 23 January, 2023, 15:00pm: 88 participants )

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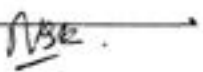








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98	Pann Bichhna	Khmer Times			
99	<del>Phak Sokkin</del>	<del>CAM-Science</del>			<del></del>
100	Tim Sokuntarath	CamEd Business School			
101	Chheng Channita	Fresh News			
102	Vorn Chanrakong	EGE Cambodia			
103	Heng Sovann	AMS			
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112	SOK SEYLA		MOE			
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**Global Cleantech Innovation Programme: Accelerating cleantech innovation and entrepreneurship in startups and SMEs in Cambodia (GCIP Cambodia)**

UNIDO Project No. SAP 190057  
GCIP Cambodia Overview and GCIP Accelerator Guideline Overview

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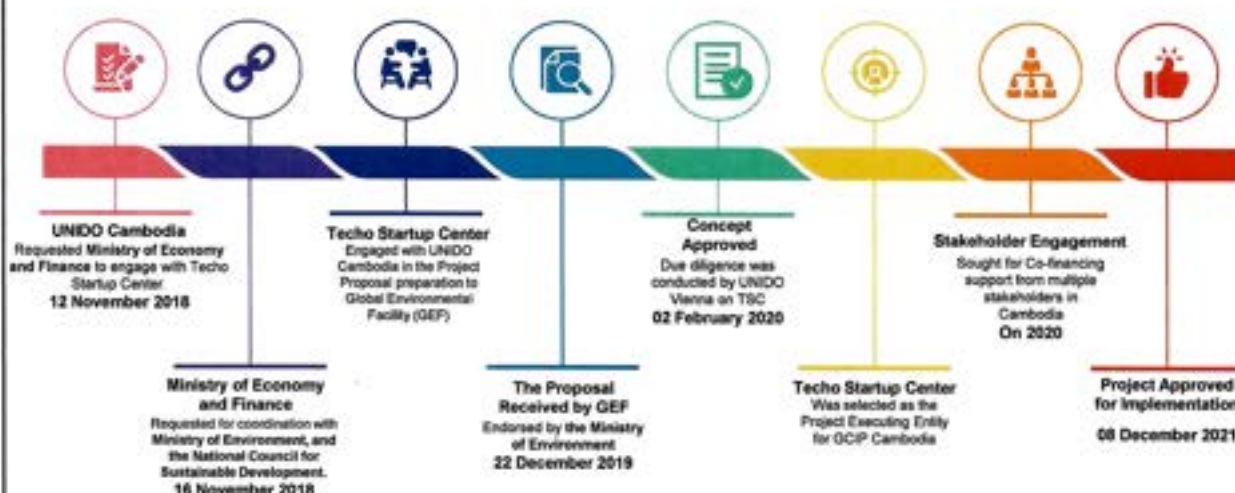
GCIP Accelerator Guideline

## 1. Project Background



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## 1. Project Background (Cont')



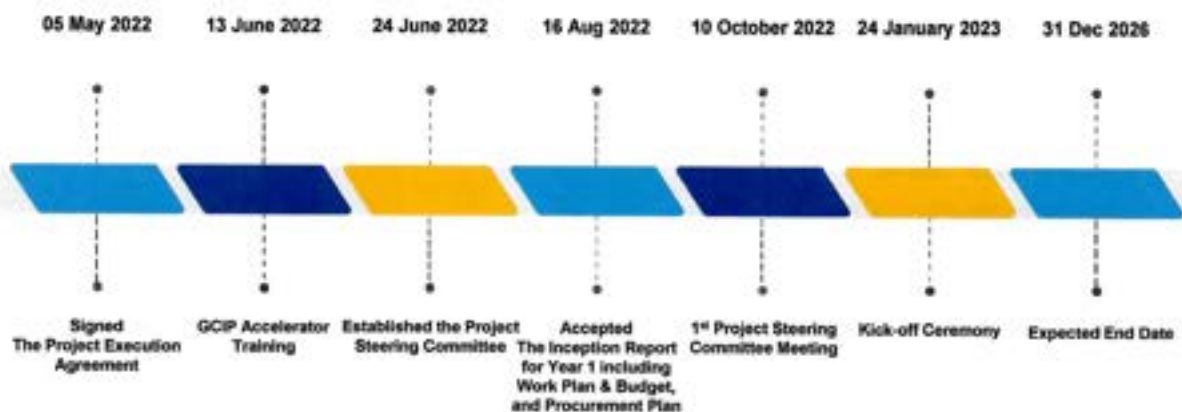
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## 1.1 Project Overview



## 1.1 Project Overview (Cont')

### Timeline



*Note: The project was approved for implementation on 08 December 2021 with 60 months duration. However, the Project Execution Agreement was duly countersigned on 05 May 2022.*

## 1.1 Project Overview (Cont')



### Objective

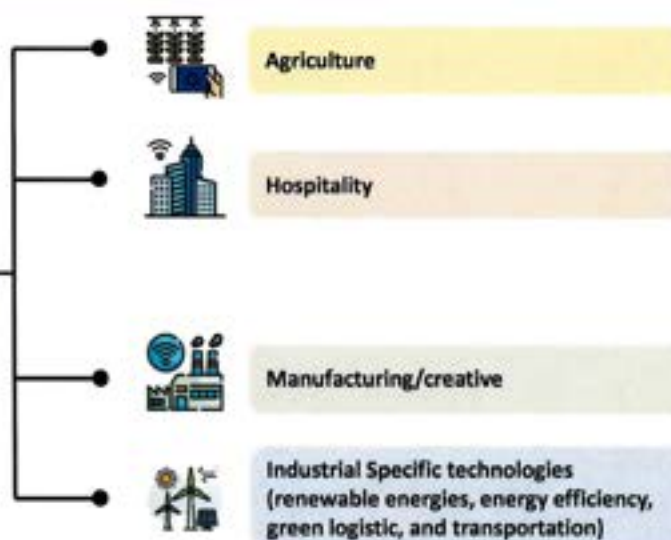
To accelerate the uptake and investments in cleantech innovations and promote coordination and ecosystems connectivity under the Global Cleantech Innovation Programme.

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## 1.1 Project Overview (Cont')

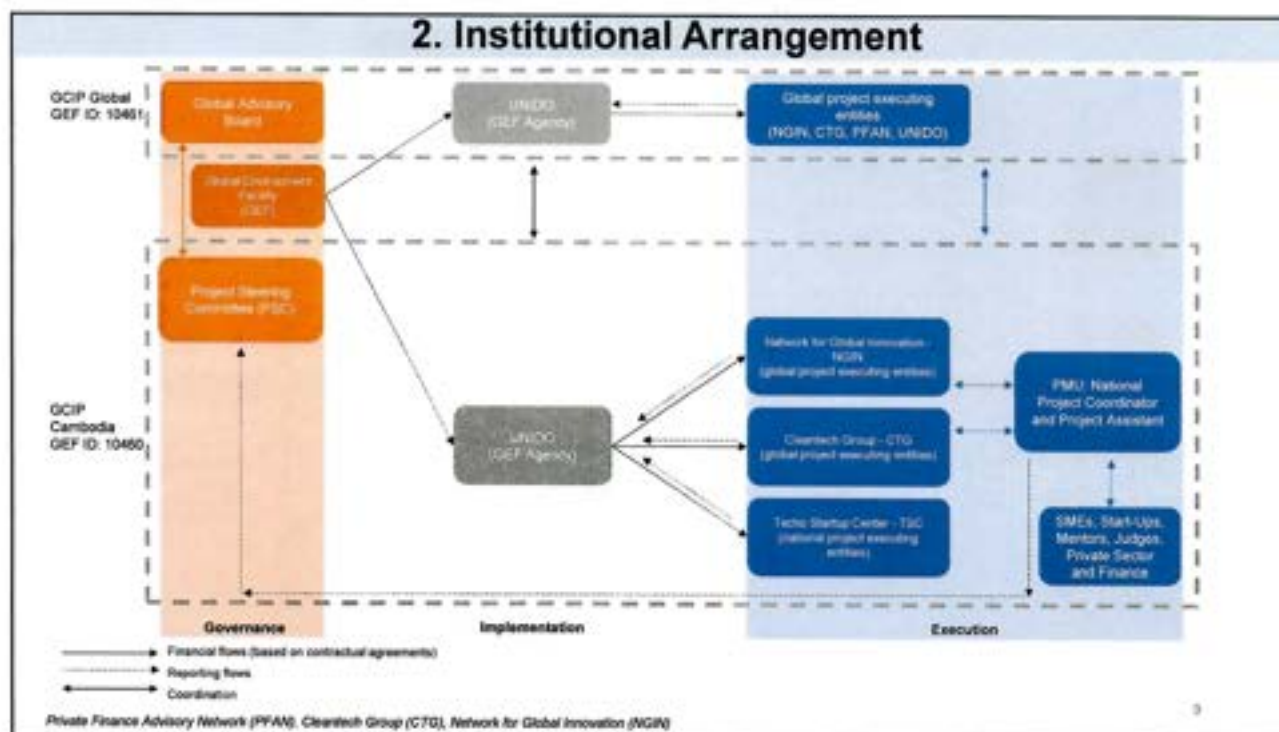


The project will focus on four key sectors:

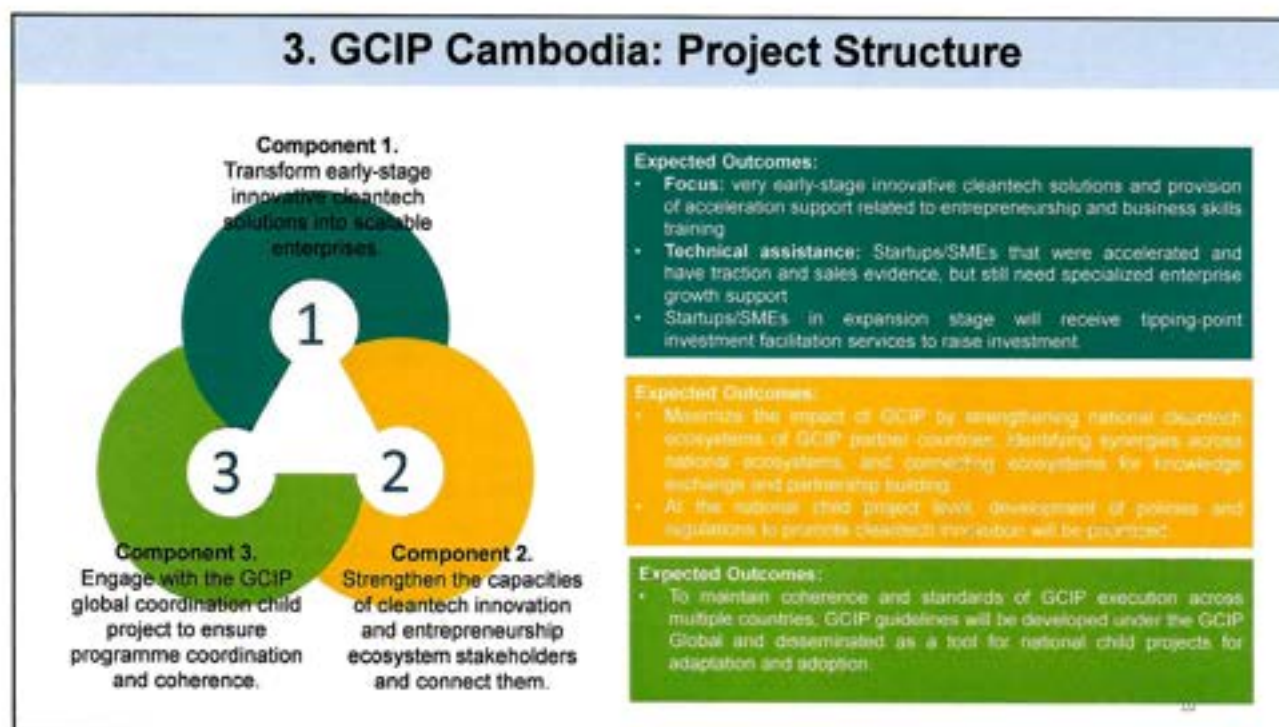


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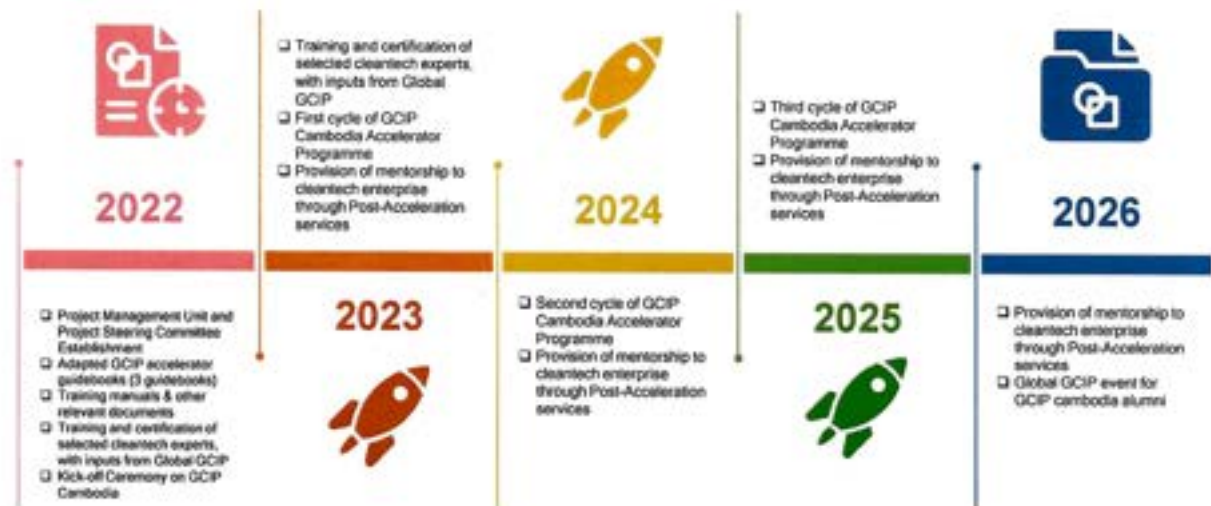
## 2. Institutional Arrangement



## 3. GCIP Cambodia: Project Structure



## 4. Project Overview in 5 Years



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## 5. Stakeholders



\*\*\*Stakeholders identified during project design phase

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## 6. Way forward in 2023



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## 7. Identifying GCIP Mentors



### A Sense of Impact:

Joint hand in addressing energy and environmental issues

### Personal Learning

Gain additional knowledge from international curriculum

### Future Opportunities

Widen your horizon which could potentially lead to unknown opportunities

### Networking and Connections

Connect with experts, mentors, and businesses from various areas.

### Recognition

Opportunity for a mentor who had participated extensively to engage with the programme more deeply

14

## 7. Identifying GCIP Mentors (Cont')



15

## 8. GCIP Accelerator Guideline

### GCIP Generic Accelerator Guideline



### Techo Accelerator Program Guideline



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## 8.1 GCIP Pre-Accelerator Guideline



### Help early-stage entrepreneurs progress

Addressing key gaps that would cause them to be ineligible and unable to complete application process.

### Increase participation from under-represented groups

Increase the proportion of women entrepreneurs, entrepreneurs outside of Phnom Penh

### Support the development of new and innovative clean technology

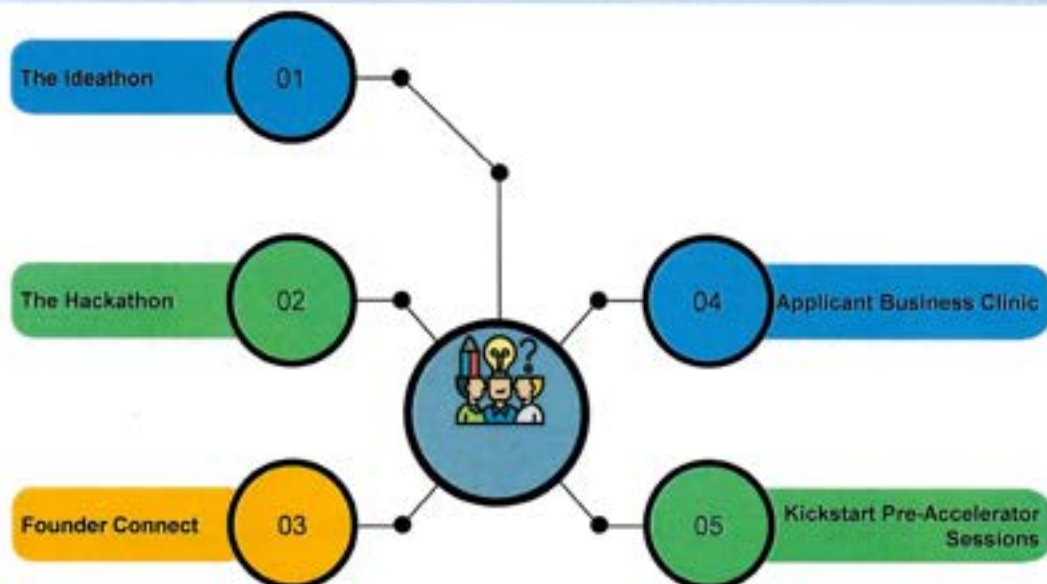
Assisting entrepreneurs in strengthening their products and business model

### Provide support and capacity development

Developing a larger and more diverse group of entrepreneurs

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## 8.1 GCIP Pre-Accelerator Guideline



18

## 8.2 GCIP Accelerator Guideline



Identifying cleantech entrepreneurs

Accelerating cleantech entrepreneurs

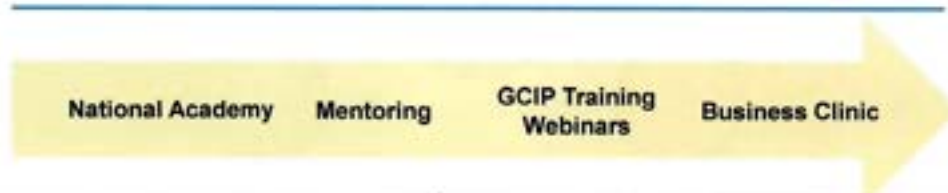
Supporting cleantech entrepreneurs

9 – 12 MONTHS



19

## 8.2 GCIP Accelerator Guideline



20

## 8.2 GCIP Accelerator Guideline



### Requirements

Strong Greenhouse Gas (GHG) emissions reduction

Foster cleaner economic development

Contribute to climate change mitigation

Connect your solutions to global markets

Leverage UNIDO's international network of partners

Refine your business model through training and mentoring

Establish partnerships within the CIEEs both nationally and internationally



### Benefits

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## Conclusion



- GCIP Cambodia will run for 5 years until 2026, and there are three cycles of GCIP Accelerator Program
- Identifying mentors and experts in the upcoming months
- Commencing the first cycle of GCIP Accelerator Program in 2023
- GCIP Cambodia is officially kick-started.

23



## Thank you



099 222 899



Vathinh.chong@techostartup.center

24

**CADT**  
**IDRI** វិទ្យាស្ថានស្រាវជ្រាវ និង ឧត្តមន្ត្រីវិទ្យាស្ថាន  
 Institute of Digital Research & Innovation




**CADT** បណ្ឌិត្យសភាបច្ចេកវិទ្យាជីវចលកម្ពុជា  
 Cambodia Academy of Digital Technology

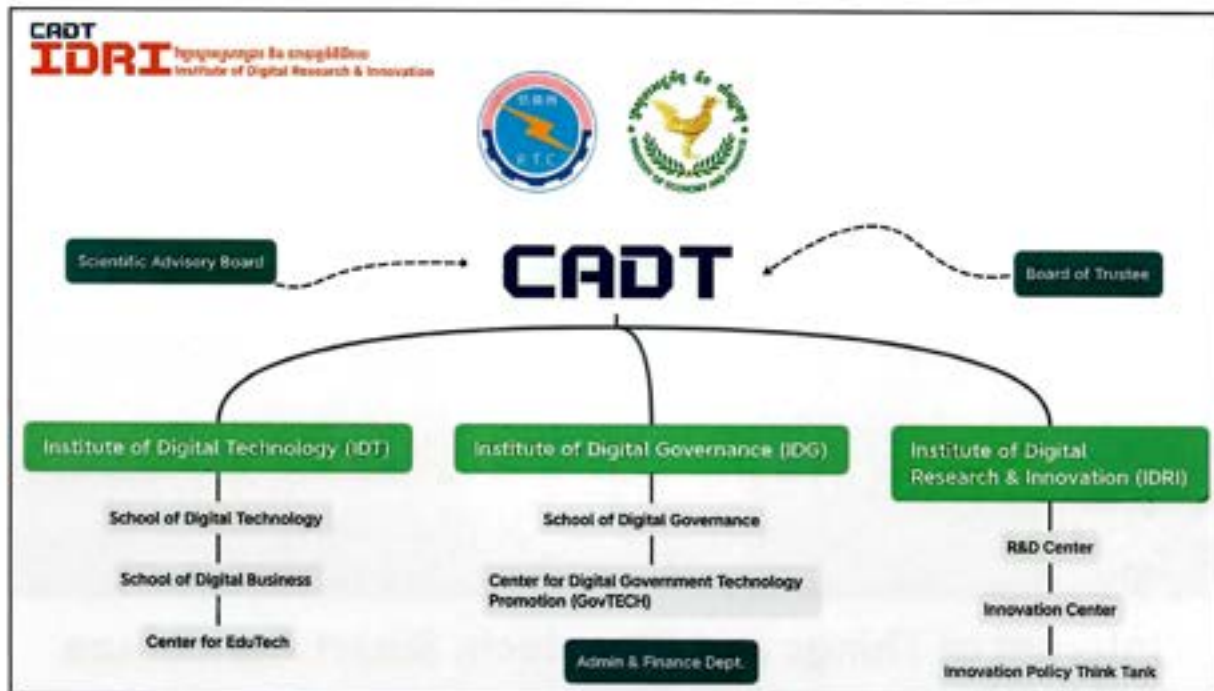
ជំរុញឧត្តមន្ត្រីវិទ្យាស្ថាននៅកម្ពុជា | Driving Digital Innovation in Cambodia

## Internet of Things and Cleantech: Smart Agriculture

### Agenda

1. Introduction about CADT
2. Smart Agriculture
3. Cleantech & Internet of Things
4. Climate-Smart Agriculture in Cambodia
5. Conclusion

 [www.cadt.edu.kh](http://www.cadt.edu.kh)



## About IDRI

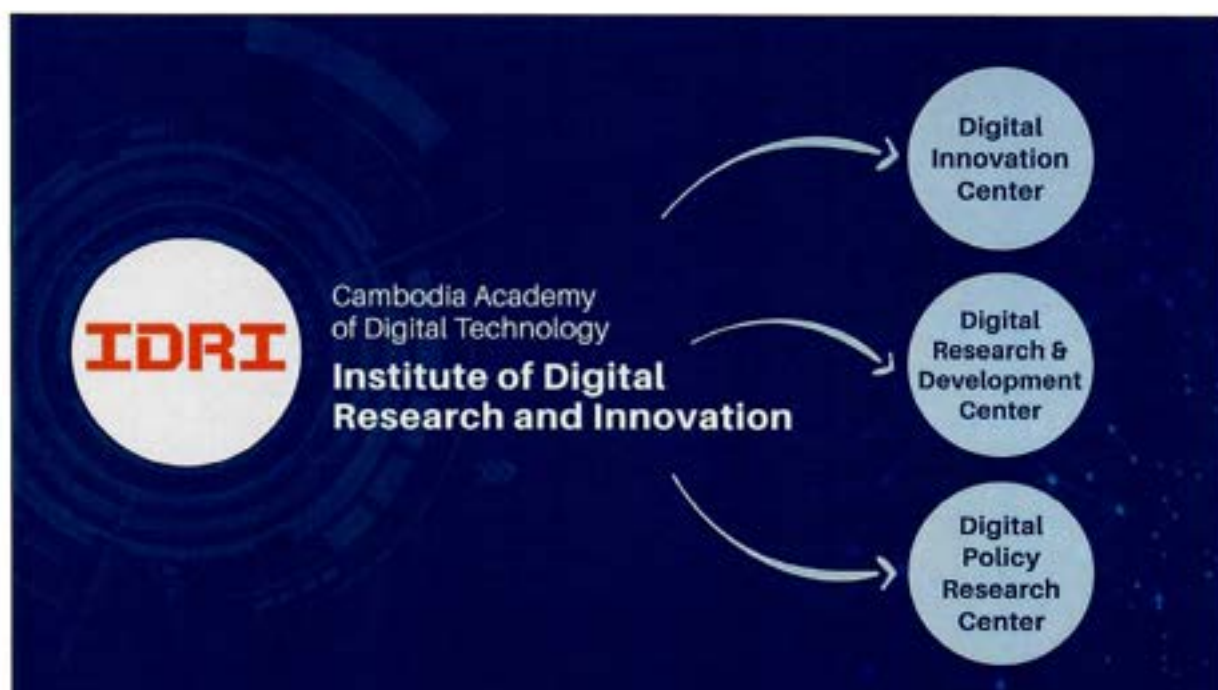
- Established by the sub decree on 15 Nov 2021
- Institute of Digital Research and Innovation is a public research institution under the Cambodia Academy of Digital Technology in charge of research and development in digital technology and digital innovation and entrepreneurship promotion.

## Vision

- To be Cambodia's flagship research and innovation institute with international recognition in digital technology that addresses key social and economic challenges amid a rapid digital transformation.



**CADT**  
**IDRI** វិទ្យាស្ថានស្រាវជ្រាវ និង ឧបទ្វីបនៃវិទ្យាសាស្ត្រ  
 Institute of Digital Research & Innovation



## Digital Research & Development Center



### Intelligent Interactive System

- Human-Computer Interaction
- Computer Vision
- Smart City
- Smart Agriculture



### Data Science

- Data Engineering
- Data Analysis and Visualization
- Data Modelling



### Internet of Things

- Communication Technology
- Smart Application
- IoT Infrastructure



### Technology Transfer

- Convert research outcome to digital product
- Develop digital platforms/systems/applications

 [www.cadt.edu.kh](http://www.cadt.edu.kh)

## Smart Agriculture



## Agriculture



Traditional Agriculture



Smart Agriculture

## Smart Agriculture



- 01 Monitoring of climate condition
- 02 Greenhouse automation (lighting, temperature, soil condition, humidity)
- 03 Weather Sensor
- 04 Cattle monitoring and management
- 05 Smart Irrigation

## Temperature Forecasting in Phnom Penh

The main aim of this research is to use time series forecasting to predict the temperature in Phnom Penh with four years of daily temperature data (2019-2022) collected based on stations.



## Internet of Things

The Internet of Things (IoT) describes the network of physical objects—"things"—embedded with sensors, software, and other technologies to connect and exchange data with other devices and systems over the internet.

**IoT works on batteries.**

With more than 7 billion connected IoT devices today, experts expect this number to grow to 10 billion by 2020 and 22 billion by 2025.



Image courtesy of Shutterstock.com

## Cleantech & IoT



More use-cases



More devices



More Battery Waste

## Cleantech & IoT

### Negative IoT Environmental Impact



- **Internet of Things**

- IoT works on battery
- The more frequently batteries need to be replaced, the more batteries end up in landfills.
- Billions of "things" mean billions of batteries, which can cause a growing problem as our appetite for the IoT grows.

https://www.researchgate.net/publication/354011111\_Negative\_environmental\_impact\_of\_internet\_of\_things\_devices

## Cleantech & IoT

### Internet of Things



- **IEEE Wake-Up Radio** will allow IoT devices to use significantly less power, extending battery life from months to years. This reduces the number of batteries that wind up each year in landfills. And that makes a difference in the IoT environmental impact
- Consume less power
- battery can last around 3-10 years

https://www.researchgate.net/publication/354011111\_Negative\_environmental\_impact\_of\_internet\_of\_things\_devices  
 https://www.researchgate.net/publication/354011111\_Negative\_environmental\_impact\_of\_internet\_of\_things\_devices

## Cleantech & IoT



**Solar Energy**



**Wind Energy**

## Promoting Climate Smart-Agriculture



<https://www.worldbank.org/en/topic/climate-smart-agriculture>  
<https://www.fao.org/climate-smart-agriculture/en/>  
<https://www.sfb.org/news/videos/promoting-climate-smart-agriculture-initiatives-cambodia>



## Climate-Smart Agriculture



### Productivity Increase

Produce more and better food to improve nutrition security and boost incomes



### Enhanced resilience

Reduce vulnerability to drought, pests, diseases and other climate-related risks and shocks.



### Reduced emissions

Pursue lower emissions for each calorie or kilo of food produced, avoid deforestation from agriculture and identify ways to absorb carbon out of the atmosphere.

<https://www.adb.org/en/topics/climate-smart-agriculture>  
<https://www.fao.org/climate-smart-agriculture/en/>

## Climate-Smart Agriculture



ASIAN DEVELOPMENT BANK

### Initiative in Cambodia

The Asian Development Bank, with support from the Pilot Program for Climate Resilience of Climate Investment Funds, assisted the Royal Government of Cambodia to prepare the **Strategic Program for Climate Resilience (SPCR)**.

The **SPCR** for Cambodia consists of **7 investment projects** and one technical assistance project. One of the investment projects related to the agriculture sector demonstrates **climate smart agriculture** techniques such as rehabilitation of irrigation systems to climate-resilient condition, laser land leveling to conserve water and improve irrigation water use efficiency, and weather-indexed crop insurance scheme.

<https://www.adb.org/en/topics/climate-smart-agriculture>  
<https://www.fao.org/climate-smart-agriculture/en/>

## Climate-Smart Agriculture



### Climate-Smart Agriculture in Cambodia

Climate-Smart Agriculture (CSA) was implemented in the **Svay Rieng** and **Tboung Khmum** provinces. The project increased the capacity of farmers, and female farmers in particular, to cope with the adverse effects of climate change, such as drought and flooding. Aside from conducting awareness-raising campaigns on climate change and providing training on farming techniques, the project also introduced climate-smart technology, including raised-bed gardens with sprinkler-drip systems.

<https://www.fao.org/climate-smart-agriculture/>

## Internet of Things and Cleantech: Smart Agriculture

### Conclusion



- Smart Agriculture is the future and essential for Cambodia
- The use of IoT devices will continue to increase
- IoT is essential for cleantech to help environmental issue





(Energy)<sup>Lab</sup>

## Content

---

- Overview of Clean Tech
- EnergyLab's Role within the industry
- Switch to Solar Startup Program
- Financial opportunities and challenges
- Supporting actors



## What is Clean Technology?

A set of technologies that either reduce or optimize the use of natural resources, whilst simultaneously reducing the negative effect that technology has on the planet and its ecosystems.

### Key sectors in clean tech industry:

- Sustainable energy and energy optimization
- Clean water
- Pollution reduction
- Recycling and waste management

Source: AZO CleanTech

## Existing Clean Tech Start-ups/Companies

### Sustainable Energy and Energy Optimization

Solar energy



Clean Cooking



Electric Vehicles



## Existing Clean Tech Start-ups/Companies

### Clean Water, Pollution Reduction, Recycle and waste management



Ruy Reach

Husk

(Energy)<sup>Lab</sup>

## EnergyLab's Role

### Growing the Clean Energy Ecosystem

- Initiate and/or guide CE policies, instruments, and regulations to stimulate RE demands
- Facilitate collaboration between key actors interested to support, fund and grow the CE space and we shadow them on demand.
- Nurture CE startups and entrepreneurs, along with next-gen CE professionals.

### Clean Energy Knowledge and Advocacy

- Raise awareness and develop knowledge related to global, regional and local progress in Clean Energy
- Evidence-based advocacy is targeted to policy-makers, diplomats, development partners, think tanks, universities, businesses and influencers mostly in Cambodia but also regionally.

(Energy)<sup>Lab</sup>

**supports the growth of the clean energy markets.**

## Our works

(Energy)<sup>Lab</sup>





(Energy)<sup>Lab</sup>

# SWITCH TO SOLAR STARTUP PROGRAM

Nurturing the solar tech startup for the green growth of agri-fishery market





(Energy)<sup>Lab</sup>

## Worked with 16 solar tech startups (Energy)<sup>Lab</sup> across incubator and accelerator



## How the program works

(Energy)<sup>Lab</sup>

- Recruit startups through online application and network
- One-year Incubator with USD7.5K from Khmer Enterprise
- Six-month Accelerator for investment readiness
- Work with qualified and experienced business mentors (MIV) and market experts (Sevea Consulting)
- Program and content designed tailored to the needs of the startups
- Financial Intermediaries connections for start-ups

## Financial

### Opportunities

- MFIs' Loan
- Grant/Fund
- Impact Loan
- Impact Investors

### Challenges

- Missing middle financing
- Cash flow availability  
(MFI's high interest rate)

(Energy)<sup>Lab</sup>



## Benefits for Clean Tech Start-ups

(Energy)<sup>Lab</sup>

- Business and technical supports from the ecosystem
- Social and sustainable business
- Financial opportunities

## CT Supporting Actors/Programmes

### Programmes



### Actors



Nexus for Development



Sevea Consulting



(Energy)<sup>Lab</sup>

(Energy)<sup>Lab</sup>

THANK YOU!



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sonita@energylab.asia



## TABLE OF CONTENTS

1. Introduction
2. Policy Instruments
3. Pilot Demonstration
4. Conclusion

## 1. Introduction

- ❖ Overall, Cambodia's policy framework favors and pursues sustainable development, where the environmental protection and the natural resource management are essential components for such development.
- ❖ The works on sustainable development at the Ministry of Environment so far basically cover (at local, national and international levels):
  - The mitigation and adaptation measures to address climate change issues;
  - The pursuit of green economy;
  - The conservation of biodiversity and sustainable management of natural resources;
  - The leverage and use of science and technology.

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## 2. Policy Instruments

### 2.1 Royal Government's Rectangular Strategy (Phase 4) lays out **four priority areas**:

1. Human Resource Development ( ការអភិវឌ្ឍធនធានមនុស្ស )
2. Economic Diversification ( ការធ្វើពិពិធកម្មសេដ្ឋកិច្ច )
3. Private Sector and Job Market Development ( ការអភិវឌ្ឍផ្នែកឯកជន និងការងារ )
4. Sustainable and Inclusive Development ( ការអភិវឌ្ឍដោយចីរភាព និងបរិយាប័ន្ន )

4

## 2. Policy Instruments

### 2.2 National Strategic Development Plan (2019-2023), in relevance to the environment, among others:

1. More policy dialogues and coordination with development partners.
2. More effective management and conservation of natural resources such as forests, wildlife, protected areas, and biodiversity.
3. Higher degree of mitigation efforts and adaptation actions to address the issues of climate change.
4. Promotion of community-based development and eco-tourism.
5. Higher degree of public awareness and participation in environmental protection.



## 2. Policy Instruments

### 2.3 Cambodia's Sustainable Development Goals (2016-2030)

Following the endorsement of the SDGs at the UN in late 2015, the RGC has adapted the UN-SDGs to the national context and has crafted a fully localized framework – the Cambodian SDGs (CSDGs).

#### Cambodia's SDGs:

- ❖ 18 Goals, 88 Targets, 148 Indicators

### SUSTAINABLE DEVELOPMENT GOALS



## 2. Policy Instruments

### 2.4 Some Other Instruments:

- Climate Change Strategic Plan (2014-2023)
- Nation Strategic Plan on Green Growth (2013-2030)
- National Environmental Strategy and Action Plans (2016-2023)
- National Biodiversity Strategy and Action Plans (2016)
- REDD+ Strategy (2017-2026)
- Policy on Urban Solid Waste Management (2021)
- Long Term Strategy for Carbon Neutrality (2021)
- Roadmap on Sustainable Consumption and Production (2022)
- Circular Economy Strategy and Action Plan (2021)



## 2. Policy Instruments

### 2.5 The **Draft** White Paper on the Environment:

#### The Focus of the Strategic Framework:

1. Green Growth & Circular Economy
2. Conservation and Sustainable Use of Natural Resources
3. Scientific Knowledge and Environmental-friendly Alliance
4. Modern, Accountable, Efficient and Active Administration
5. Environmental Diplomacy
6. Innovative Financial Solutions



## 2. Policy Instruments

### 2.5 The **Draft** White Paper on the Environment:

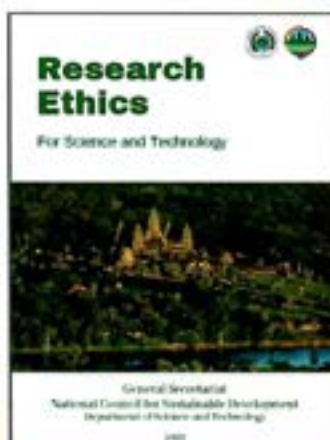
Targets, among many others, include:

- 35% of Energy Sources come from Renewable Sources (12% for solar, at least)
- 40% of Transport consist of Electric Vehicles
- 30% of Transport consist of Public Transport
- 100% of Cities (95% of Rural Areas) Have Full Access to Clean Water
- 35% of Plastic Bag Usage
- 95% of Industry Compliance with Sound Environmental Standards in Industrial Parks and Special Economic Zones
- Etc.



## 2. Policy Instruments

### • 2.6 Research Ethics:

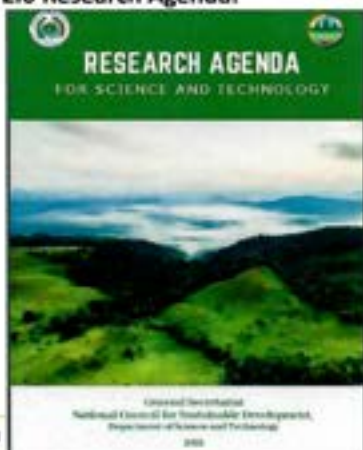


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- Research ethics provides guidelines for the ethical conduct of research in order to reduce potential impacts on human, animal, environment, and society as well as to promote the sustainable development in Cambodia.

## 2. Policy Instruments

- 2.6 Research Agenda:



- Research Agenda contains a country's prioritized themes of research agreed upon to ensure the conduct of research is efficiently implemented contributing to sustainable development.

## 2. Policy Instruments

- 2.7 Circular Economy

## TRANSITION FROM A LINEAR TOWARDS A CIRCULAR ECONOMY



## GOALS



## 5 STRATEGIC OBJECTIVES

**SO1:** Increase Efficient Use of Raw Materials, and Promote Sustainable Design, Production, Remanufacturing and Distribution

**SO2:** Promote Sustainable Consumption and Effective Reuse and Repair

**SO3:** Enhance Waste Collection and Recycling

**SO4:** Ensure Effective Management of Residual Waste

**SO5:** Enhance Crosscutting Stakeholder Engagement, Awareness and Capacity Building



## 2. Policy Instruments

### • 2.8 Green Building

## Future DNA of the CamGCGB System



**Life cycle assessment**  
Audits consider entire life cycle of a building project



**Holistic**  
Equal emphasis on three core sustainability factors: environmental, economical and sociocultural



**Emphasis on performance**  
Focus on overall performance of a development

## Holistic Understanding



## CamGCGB Overview



CamGCGB  
system



- Residential (House, Apartment, Condominium)
- Non-residential (Office, Hotel, Education, Shopping center)
- 6 Sustainability Dimensions: Environment, Economic, Socio-cultural, Technical, Communication, and Site
- 25 Criteria, 113 Indicators, 128 Sub-indicators

- All types of Building
- 3 Sustainability Dimensions: Environmental, Economics, and Socio-cultural
- 9 Criteria, 51 Indicators, 80 Sub-indicators

## 2. Policy Instruments

- 2.8 Sustainable Consumption and Production (SCP)

## GOALS OF SCP

- To promote sustainability in consumption and production of goods and services, thereby protecting the environment and social well-being while increasing business competitiveness and promoting innovation.
- To identify and implement policies and programs, including incentives and regulations, which effectively and efficiently enable business and consumer practices to become more sustainable.
- To strengthen research and development into business models, government services and community consumption behaviours to enhance SCP across the economy.
- To promote SCP leadership across all sectors, including amongst government (national and sub-national), private sector and civil society, especially through advancing women's leadership.
- To raise awareness and build capacity to Cambodian citizens to participate in SCP implementation at all levels of society, and amongst the diverse range of communities within the population, especially the younger generation, women and girls, as well as marginalized groups.

## SCP ALIGNMENT WITH EXISTING POLICIES AND SECTORAL PLANS

This SCP Roadmap is developed in alignment with the RGC's existing policies, regulations, national development plans, strategies, priorities, and sustainable development goals



## CAMBODIA'S SCP ROADMAP 2021-2035– FIVE PILLARS

- establishes a 15-year plan to strengthen the sustainability of Cambodia's consumption and production systems through 5 strategic pillars, 23 practical strategies and 105 actions to be delivered over the short-, medium- and long-term
- The Roadmap recognizes improvements are needed across the entire C&P system – from investment to product design, distribution, marketing and consumption – as well engagement with the values underpinning consumption behaviour and social relations.
- Many of the actions identified in the Roadmap have been already initiated.
- The sector-based actions identified in the SCP Scoping Study were organised under these five pillars of the SCP Roadmap.



Five Pillars of the SCP System

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## 3. Pilot Demonstration

- **3.1 "Promote Green Mobility Through Electric Motorcycle in Cambodia" (2021) recommended as follows:**
  1. Increase charging and battery swapping infrastructure through incentives.
  2. Streamline the registration process.
  3. Reduce the import tax for electric motorcycles
  4. Reduce battery waste export fees.
  5. Develop guidelines for the battery disposal and recycling sector
  6. Establish battery take-back schemes
  7. Establish an EV Association
  8. Establish minimum standards for Ems
  9. Integrate EMs into Government fleets

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## 3. Pilot Demonstration

- **3.2 Technology Need Assessment in Sihanoukville's Special Economic Zones**
- Study area: 03 SEZs in Sihanoukville
- Recommend 10 climate-friendly technologies related to energy efficiency, water efficiency, and solid waste and wastewater management

25

## 3. Pilot Demonstration

- **3.3 On-Going Joint Research**
- 1. Sustainable Community Development Model
- 2. National Pricing Strategy for Waste and Environmental Management
- 3. Parasite management in meat production

26

## 4. Way Forward

- ❖ MOE to cooperate with relevant stakeholders in the implementation of GCIP Cambodia
- ❖ MOE to provide policy direction for the GCIP.
- ❖ MOE to welcome and support cleantech innovations and startup in Cambodia to promote sustainable development

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សូមអរគុណ!

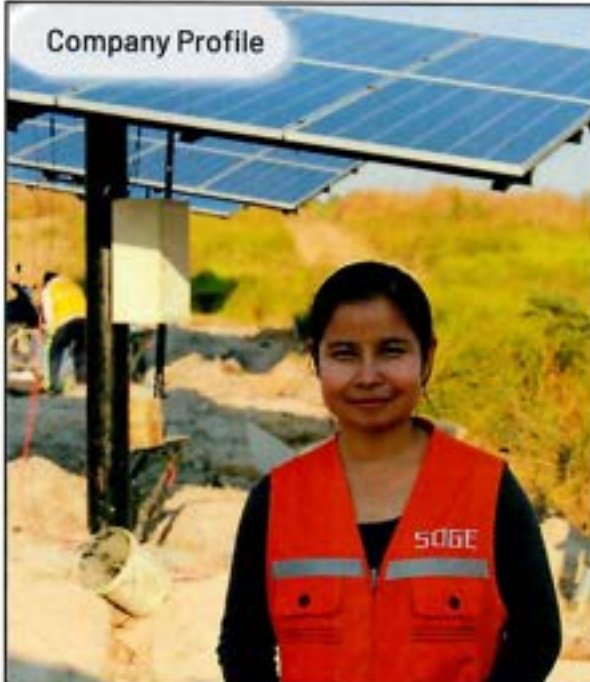
## Solar Green Energy (Cambodia) Co., Ltd



Your Solar Experts for a better life



### Company Profile



- We began as Renewable Energy Development Association (REDA), providing green energy solutions to commercial farms since 2008, up until 2013 we had served (on credit) 1000 households.
- Solar Green Energy (Cambodia) Co. Ltd was officially registered in 2013
  - Since 2013 we have grown to a team of 21 staff members (32 employees now)
  - The company is owned and led by a women entrepreneur

02



## Overview

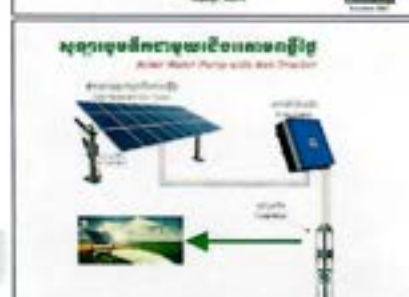
Your Solar Experts for a better life



Vision	To be the number one renewable energy company in Cambodia
Mission	We focus on manufacturing high quality products, providing technical support, maintenance services and innovation of renewable energy technologies in Cambodia
Business Arms	B2B & B2C, Manufacturing, Investment
Products	Solar water pump, Solar hybrid system, Smart irrigation, off grid and back up system
Manufacturing	Sun tracker, battery balancer, Charge controller
Target Customer	High and medium income people, communities (Low income people)

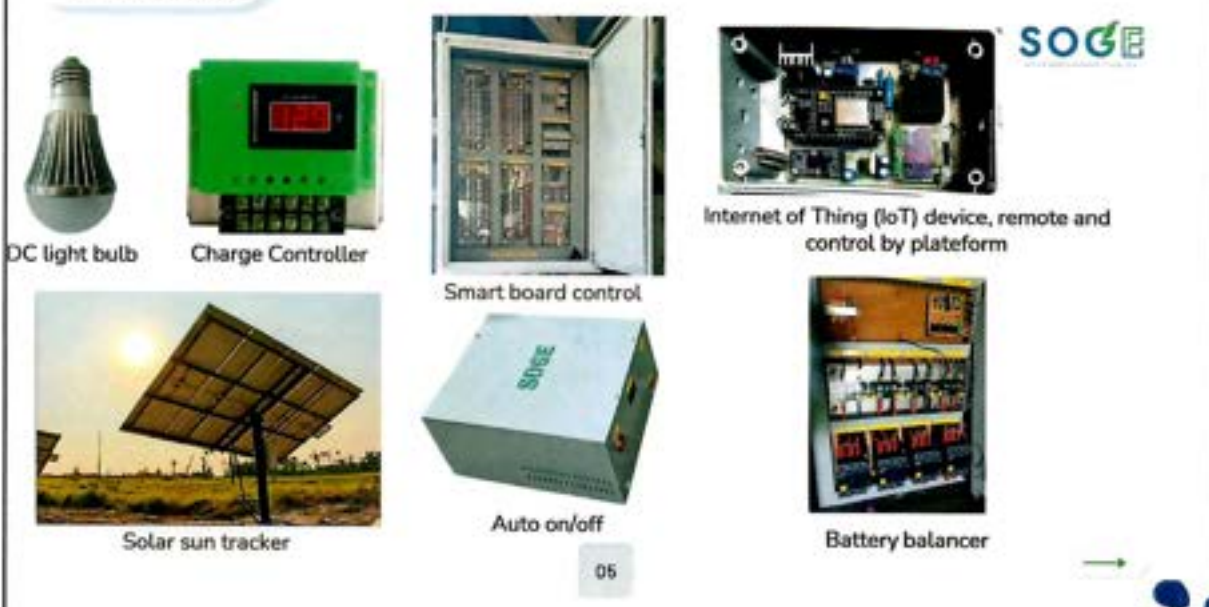
03

## Main Systems



04

### Our Products



DC light bulb

Charge Controller

Smart board control

Internet of Thing (IoT) device, remote and control by platform

Solar sun tracker

Auto on/off

Battery balancer

05

### Activities



**Customers**

- Sell to individual customers
- 3000 systems**
- Provide service to **1500 farmers**

**New Innovation**

- Solar Irrigation as services
- Solar Smart Irrigation system for greenhouse
- Smart cooling system

**Internship**

- Internship opportunity from Cambodia and abroad.

**Research & Development**

- New digital platform for agriculture (SAAMBAT),
- Controlling system
- Smart devices

06



## Achievement



### Award

- 2018-2020: S-RET grant (IFAD funded project (USD 80,000)
- 2021-2023: SNV/IAP grant: (EUR 199,740)
- 2021-2022 : UNDP: Solar Water Pump Innovation Challenge (USD15,000)
- 2021-2024: PIN-Sevea: Switch to Solar project, (USD 5,012)
- 2021-2024: PIN-Sevea: Switch to Solar project (EU funded project) to support at least 30% company sales revenue
- 2021-2022: UN women & NCDD on solar irrigation for 100Ha paddy rice field.
- 2022-2023: Harvest III , USAID (USD 14,9000)
- 2023-2024: SAAMBAT, TSC (IFAD), (USD 40,000)
- 2022-2023: UNDP, Promoting the use of solar technologies for agricultural and rural development in Cambodia and Myanmar (USD110,000)

### Development Partners

- SNV, UNDP, SHE investment, People In Need, Sevea, UN Women-NCDD, Ministry of Agriculture, EnergyLab, RUPP, ITC, NPIC, RUA, TSC, Impact Hub Phnom Penh, ABT




08

### Partners



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### Core Team



<p><b>Ms. CHIN OI</b></p> <p>Position: Project Manager Skill: Electrical Engineering</p>	<p><b>Ms. CHHORY Ouksa</b></p> <p>Position: System Designer Skill: Electrical Engineering</p>	<p><b>Mr. TY POV</b></p> <p>Position: Site Engineer Skill: Electrical Engineer</p>	<p><b>Mr. CHHEAN Rotanak</b></p> <p>Position: Electronic &amp; IoT manager Skill: Industrial &amp; Mechanical Engineering</p>
--	---	--	---

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## Advisor Team





**H. E. VAR Roth San**

Position: Agriculture Advisor



**Ms. KHEAV Thida**

Position: Financing & management advisor



**Mr. SENG Bunchieun**

Position: Technical Advisor



**Dr. SRANG Sarot**

Position: Technical Advisor- App

15





# Thank you!

Website

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Phone Number

+855 96 656 5487

Email Address

[01.sogesales@gmail.com](mailto:01.sogesales@gmail.com)



SUGE Cambodia



SUGE Cambodia



## About Us

- > CAM-Science was founded in August 2021 as a Startup project.
- > CAM-Science promotes R&D in IoT application in Agriculture to help farmer access to more precision farming practice
- > CAM-Science was officially registered as CHALATEX Company in 2022.



## Our Vision

- 01** To innovate, utilize and promote R&D for IoT technology to empower Agri-Tech in Cambodia.
- 02** To help improving yield, efficiency, and profitability of by promoting agriculture technology.



3

## Our Mission

- 01** Help farmers adapt to modern and smart technology to gain productivity.
- 02** Committed to providing quality products and services, competitive pricing, and trustworthy consultant.
- 03** Innovate and develop creative IoT solutions to help farmers who seek to improve efficiency.
- 04** Fostering more collaboration for effective product implement



4

## Problem Overview



Traditional practice of irrigation relies on guesswork and is inefficient which lead to inconsistent production.



Drought caused by Climate change lead to insufficient irrigation and could severely damage crop yield.



Traditional irrigation is expensive, time consuming and not cost-effective due to rising of labor cost & energy price

6

## Our Products



**EWI4**  
(Smart Irrigation Gateway)



**Integrated Sensor**  
(to get Farm Data)



**IoT Mobile application**

7

## Main Functions



ON/OFF

Users can turn on/off water valve and pump through their mobile device.

Schedule

User can schedule irrigation through their mobile device


DATA

Receive farm data such as soil moisture, temperature and humidity in real time.

8

## Achievements

- 1<sup>st</sup> winner of Arduino Challenge 2021
- Shortlisted candidate in Digital SMEs Accelerator Program organized by TSC (2021)
- 1<sup>st</sup> winner of Bandos Digital Startup 2021 organized by National Incubation Center of Cambodia
- Winner of SAAMBAT Digital Agriculture Accelerator Program 2022, organized by Impact Hub Phnom Penh and Techo Startup Center.



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4

## Some Activities



Kompong Thom Field Trip



Site Project Study at Kandal Province



Market Research



Installing product for pilot user



Ou'Dong Site Survey

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## Other Activities



Experience Sharing



Give a talk at CODE-C



SAAMBAT Training at ImpactHUB



Start Up Panel Discussion



Technology trend in doing Business



Interviewed by TV



NICC StartUp Training



SAAMBAT Launching Ceremony

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## User Testimonials

Due to increasing personal workload, it became difficult for me to take care of my crop until I decided to use CAM-Science Smart Irrigation system. It is more convenient, and I can now able to automate my irrigation with schedule and watch its progress in real time. It is really useful and help me a lot in taking care of my farm irrigation.

~Mr.Kuong Somnang

Satisfaction  85%

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## Partners



14

## Core Team



**Mr. Neak Piseth**  
Strategy and Project  
Advisor



**Ms. Neak Sokkim**  
Business & Operating  
Manager



**Mr. Yek Lynter**  
Product Technical  
Manager

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## Our Team



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IoT Developer



**Ms. Mon Sreynith**  
Web/App Developer



**Ms. Kho Sodaneath**  
UI/UX Designer



**Mr. Tan Sophea**  
Graphic Designer



**Ms. Mot Chas**  
Full Stack Developer



**Mr. Ou Menghong**  
Electrical Engineer



**Ms. Yin Lina**  
Marketing Specialist



**Mr. Seng Vutthea**  
Event Management  
Coordinator



**Mr. Bin Sophal**  
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**Thank you for your attention!!!**

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