



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

# Global Cleantech Innovation Programme for SMEs and Startups

Clean Technology Innovation, Entrepreneurship and Investment  
for Economic Vitality and Environmental Sustainability



## Global Cleantech Innovation Programme

Today's clean technology innovations will fuel the next industrial revolution, unlocking business opportunities for prosperity, while protecting the planet.

“The GCIP seeks to foster a clean technology innovation and entrepreneurship ecosystem in our partner countries. We recognize the power of transformative technologies in accelerating the transition to an economically and environmentally sustainable future. Our vision is to identify and support technologies that have this catalytic potential.”



United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization, and environmental sustainability. With the unique mandate to promote and accelerate inclusive and sustainable industrial development (ISID) in developing countries and economies in transition, UNIDO contributes to the three pillars of sustainable development, as recognized by the recently adopted 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs), and in particular SDG-9 which calls to “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”. Within this context UNIDO supports the transition to a sustainable energy path as a key solution to a climate resilient and economically sustainable growth. UNIDO also accords high priority to technology transfer and capacity building of industries including small and medium

sized enterprises, and supports projects and programmes that leverage the power of innovation and entrepreneurship to address the energy, environmental and economic challenges of today by empowering emerging cleantech startups and bolstering the local entrepreneurial ecosystem and policy frameworks.

The Global Environment Facility (GEF) is a catalyst for action on the environment, and through its strategic investments the GEF works with partners to tackle the planet's biggest environmental issues. GEF funding helps reduce poverty, strengthen governance and achieve greater equality between women and men. As such, GEF occupies a unique space in the global partnership for a more sustainable planet. The GEF aims to expand private sector investment and commitment to environmental solutions across GEF's focal areas and initiatives, and to identify potential opportunities to enhance private sector engagement.

*The views expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations Industrial Development Organization (UNIDO). UNIDO does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained in the publication.*



# The Global Cleantech Innovation Programme for SMEs and Startups

Promoting innovation in clean technologies through a **cross-sectoral** and **multi-stakeholder** approach to build sustainable innovation ecosystems for small and medium-scale enterprises and startups.

The **Sustainable Development Goals** and the **Paris Agreement** highlight global commitment to **safeguarding the global commons**. The United Nations Industrial Development Organization (UNIDO), with its unique mandate to support inclusive and sustainable industrial development, has partnered with the Global Environment Facility (GEF) to address the most pressing global environmental challenges of our time. Through fostering **innovation and entrepreneurship ecosystems**, UNIDO and GEF seek to promote affordable and scalable solutions enabling our partner countries to leapfrog to cleaner, more resilient economies while protecting our global commons.

In today's economic landscape where resource constraints and climate concerns are no longer externalities but rather opportunities for new and sustainable business models, technology innovation has emerged as a key driver of economic growth. The GCIP seeks to harness the catalytic potential of innovation and entrepreneurship spirit in SMES and startups to support sustainable economic development.



## ➤ Innovation

Technology innovation is key to finding transformative solutions to both economic and environmental challenges. The GCIP supports creation of a robust innovation ecosystem in partner countries.

## ➤ Entrepreneurship

The GCIP leverages the power of entrepreneurship to address the economic and environmental challenges of today by empowering emerging cleantech startups and bolstering the local entrepreneurial ecosystem and policy frameworks.

## ➤ Global SME Innovation Value Chain

Today's clean technology innovations will fuel the next industrial revolution that will shape tomorrow's global economy and job market. Recognizing the vital role that SMEs play in catalyzing technology innovations, the GCIP is unique in its approach of fostering the expansion of SMEs into cleantech products and markets, thus strengthening the entrepreneurial innovation ecosystem in emerging economies and developing countries. From identification of technology innovations to their commercialization and application, the GCIP supports entrepreneurs across the innovation value chain to develop demand-driven and investment-ready climate solutions.

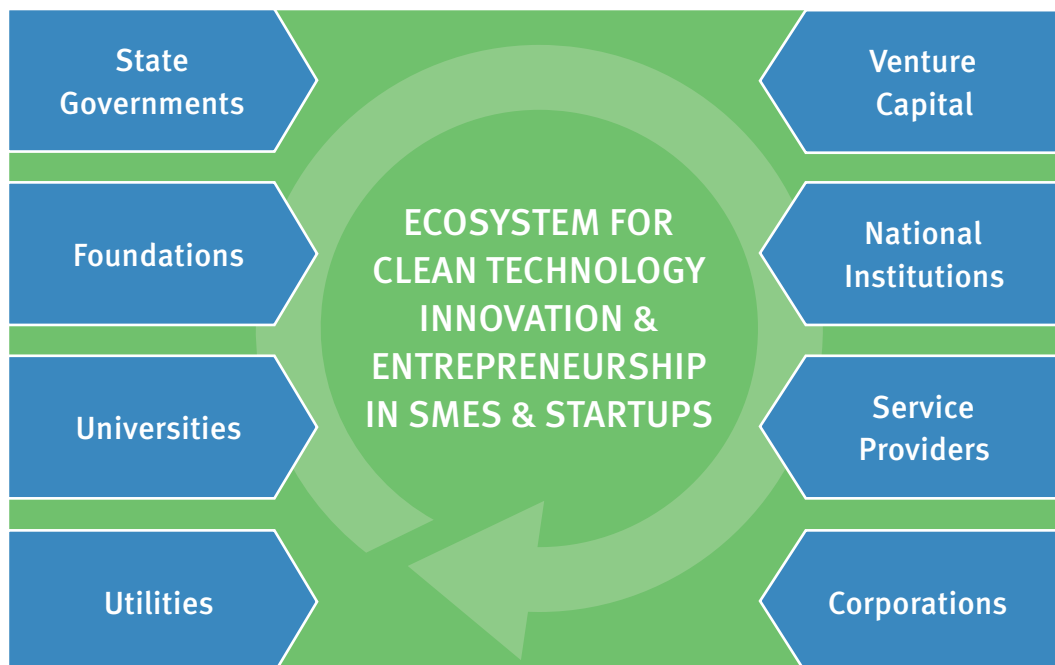
**By supporting emerging cleantech startups, and bolstering the local entrepreneurial ecosystem and policy framework, the programme delivers both environmental benefits and economic vitality.**

# The Clean Technology Innovation and Entrepreneurship Ecosystem

The GCIP promotes an innovation and entrepreneurship ecosystem by identifying and nurturing cleantech innovators and entrepreneurs; by building capacity within national institutions and partner organizations for the sustainable implementation of the cleantech ecosystem and accelerator approach; and by supporting and working with national policy makers to strengthen the supportive policy framework for SMEs and entrepreneurs.

Through this cleantech ecosystems and accelerator approach, the GCIP catalyzes investment to support and accelerate startup entrepreneurs towards the development and commercialization of their innovative ideas.

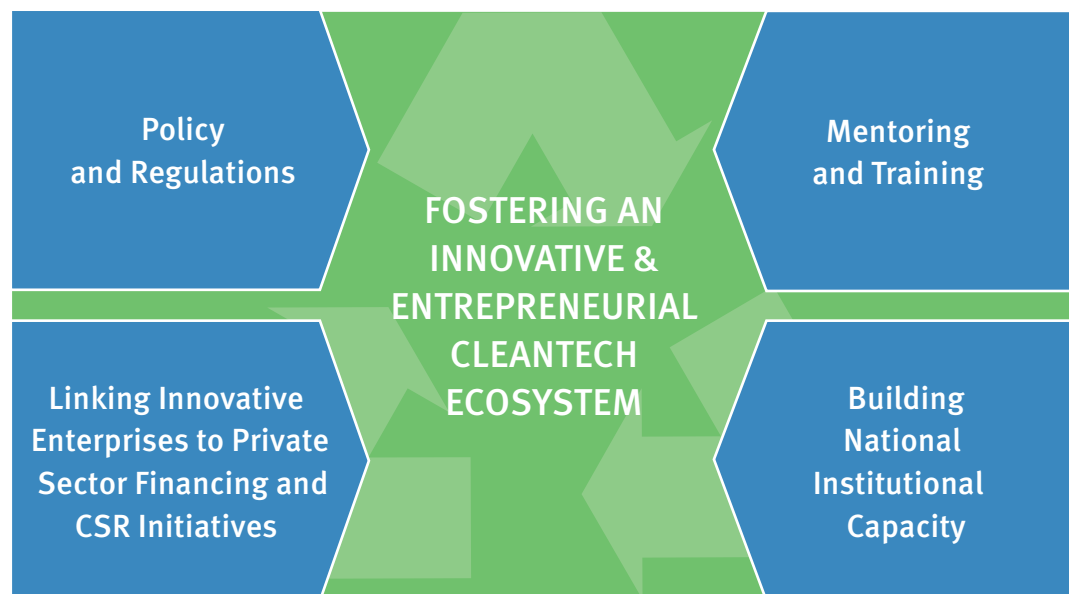
Partnerships and close consultations with all national stakeholders are critical to maximize synergies and share knowledge and best practices that can help in enhancing the contribution of cleantech startups towards climate change mitigation, while increasing productivity and generating growth and wealth.



# Innovation and Entrepreneurship Policy Frameworks

An integral part of GCIP is the development of an enabling environment for cleantech innovation and entrepreneurship, and GCIP employs a cross-sectoral and multi-tiered approach with a view to building a sustainable “ecosystem” for innovative entrepreneurship in small businesses. This entails supporting national partners to strengthen the institutional capacities of government agencies focused on small and medium-sized enterprises (SMEs) development, clean technology and innovation.

Through review of existing policies, regulations and guidelines relating to the promotion of clean technologies, innovation and entrepreneurship, GCIP also advises governments to focus on high-impact areas, especially from the perspective of encouraging and supporting increased engagement and participation of SMEs. Awareness raising and capacity building activities are also supported through regional stakeholder meetings and developing partnerships with leading institutions, agencies and universities.



## Innovative Technology Solutions

The GCIP started with four technology categories namely Energy Efficiency, Renewable Energy, Waste Beneficiation, and Water Efficiency; in 2016, the Green Building category was added to expand the scope of environmental challenges addressed. The 2017 Accelerator has expanded to include two new categories, Transportation as well as Advanced Materials and Chemicals.

GCIP is planning a transition to an **impact-focused accelerator** in order to leverage innovation and entrepreneurship to provide solutions to protect our global commons. Existing technology categories will evolve in to impact categories to accelerate **transformative clean technology solutions** and integrated approaches for **energy systems, sustainable cities, healthy oceans and sustainable fisheries, food systems, and landscape restoration**.

GCIP also supports identification and development of demand-driven solutions that can address the most pressing environmental challenges at the national levels. Through National Innovation Challenges, innovators are invited to propose technology innovations that can address a particular problem with high-impact potential. This approach allows direct market access for the technologies, and ensuring efficiency and effectiveness in impact scaling.



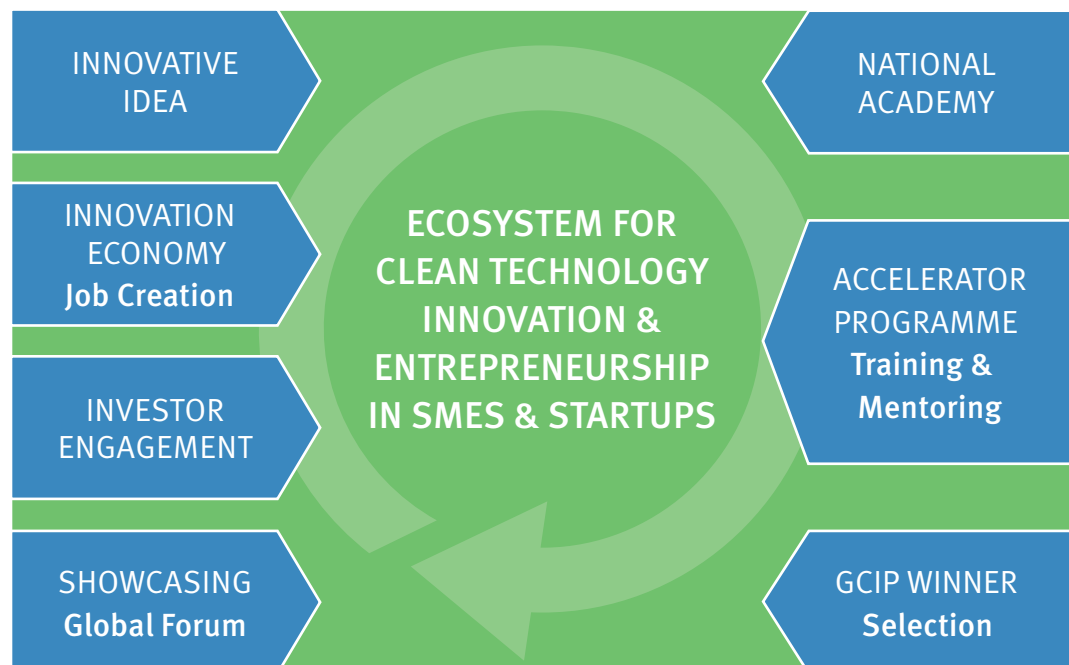
**INNOVATIVE  
TECHNOLOGY  
SOLUTIONS**

## The GCIP Accelerator

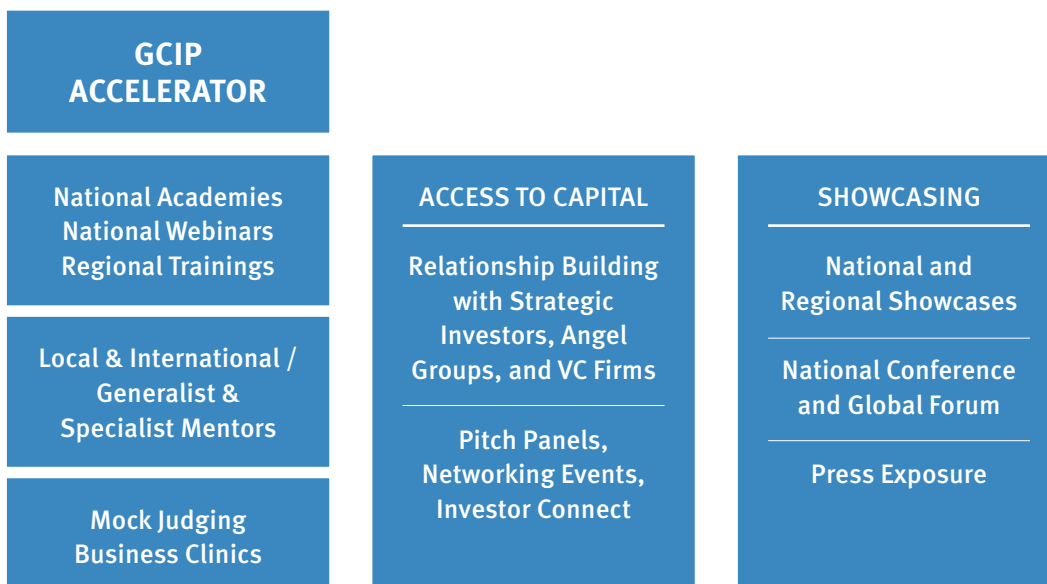
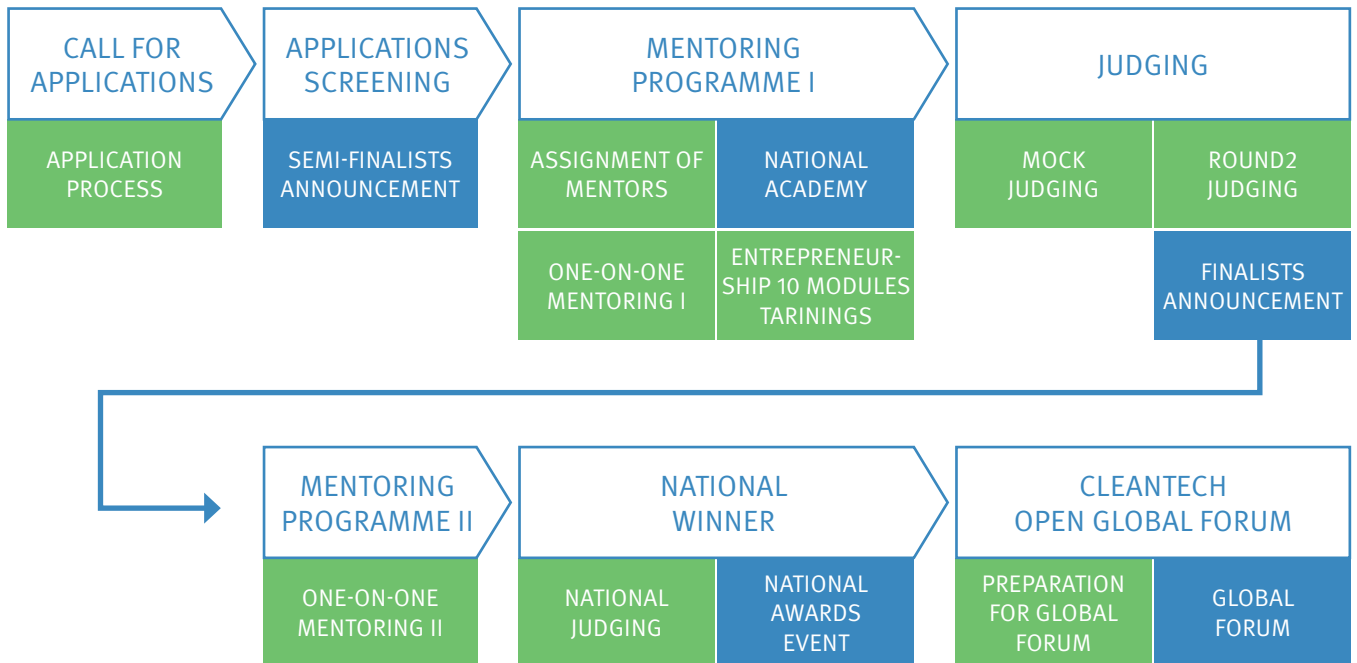
A key component of the GCIP is the annual competition-based **Accelerator**, which identifies the most promising innovators and entrepreneurs across a country. A selected number of startups in a GCIP country participate in a rigorous, competitive national acceleration programme that trains, mentors, promotes, and connects them to potential investors, customers and partners. As the best cleantech companies progress, they are continuously developed and assessed.

The Accelerator consists of an Official Launch, Investor Connect, National Academy, Business Clinic, and Mock Judging. In addition, the selected startups are continuously mentored and trained and access to capital and showcasing opportunities are facilitated on a regular basis in order to enhance their business skills and to connect them to potential business partners, financiers and investors.

A tailored mentoring programme is provided through an elite group of general and specialist mentors and trainers drawn from industries, universities, and professional institutions, as well as business leaders from within the country and abroad.







## Investor Connect

In bridging the gap between the startups with technology innovations and investors that can support market based dissemination of the solutions, Investor Connect events are organized at national and global levels. Through this networking opportunity, GCIP teams introduce their innovations to the investment community, and investors gain exclusive access to credible cleantech solutions with high-impact potential. GCIP will continue to engage with impact investors and cleantech targeted financial mechanisms to further support the commercialization and market-based scale-up of the cleantech solutions.

## GCIP Global Forum & Cleantech Week

The national winners are invited to the annual GCIP Global Forum & Cleantech Week, a confluence of the cleantech industry and the climate movement hosted by the Cleantech Open (CTO) in California, USA. It aims to create new business opportunities, highlight solutions, engage citizens, cultivate partnerships, and spur investment in clean technologies to address climate change.

The GCIP national winners gain exposure to dynamic venture culture of Silicon Valley, and are connected with a community of cleantech innovators and entrepreneurs from all over the world. The GCIP national winner also meet with the national winners of the other GCIP countries, compete for the Global Prize.



## The Impact







The GCIP has been transforming the way we address the most pressing environmental challenges of our time, and is now a global programme making impact in 8 countries around the world.

Between 2014 and 2016, cumulative the GCIP received almost 3000 applications in the 8 countries of operation, and over 580 startup companies were selected as semi-finalists and benefited from the Accelerator's training and mentoring programme, as well as the exposure to investors and the media. In 2016, the GCIP was conducted in 7 countries with 1385 applications received, of which 235 startup ventures were selected as semi-finalists. The number of applications in 2015 increased by 62.5% compared to 2014, and again in 2016 a 33% increase in applications was recorded compared to 2015. This shows the growing visibility and interest in the GCIP.

In addition to contributing to greenhouse gas emissions reductions, the technology innovations fostered under GCIP also reap positive impacts for the environment including improved water efficiency, soil protection, and waste beneficiation. Through growth of the cleantech industry, employment opportunities are created, both leading to poverty reduction through income generation.

To demonstrate the current and potential impact of GCIP, an assessment exercise is currently taking place. From the preliminary data collected, 14 GCIP alumni companies have been selected through sampling of available data. The impact to date of these 14 companies showed 624 ktons of CO<sub>2</sub>e reduced, USD 23 mil of revenue generated, and 329 new cleantech jobs created. The growth and expansion potential of these 10 alumni companies by year 2020 are projected to be 4.8 Mtons of CO<sub>2</sub>e reduced, USD 263 mil of revenue generated, and 1,219 new cleantech jobs created. While the accuracy of the preliminary data and calculation methods leave room for error, these projections show the exponential potential of the GCIP taking into account that there are over 580 companies that have graduated from the GCIP. Upon completion of the impact assessment exercise, a more accurate compilation of the impact achieved and impact projections will be available.



Date extracted from selected case studies (14)			
GHG EMISSIONS SAVINGS	GROWTH OF CLEANTECH INDUSTRY	CREATED JOBS	2017
 624 ktons of CO2	 US \$23 M of generated revenue	 329 new jobs in Cleantech	
 4.8 Mtons of CO2	 US \$263 M of generated revenue	 1,219 new jobs in Cleantech	BY 2020

## Global Connectivity

As our world continues to globalize, the synergetic value of collaboration among developing countries and advanced economies is quickly leading to innovation linkages, and receiving recognition as a catalyst for game changing solutions at the global level.

Starting with the pilot in South Africa in 2011, the GCIP has been implemented in a total of eight countries including, Armenia, India, Malaysia, Pakistan, Thailand and Turkey, with the most recent launch in Morocco in 2016. Ukraine is expected to join in 2018 expanding the geographic reach of GCIP to nine countries. Between 2014 and 2016, more than 600 startups have been mentored, trained and supported across the participating GCIP countries, selected from thousands of applicants. Following the success of GCIP thus far, there has been growing interest in joining the programme under future GEF funding cycles, including, Myanmar, China, Brazil, and Russia.

The innovations identified and developed in GCIP partner countries also have the potential to address challenges in other parts of the world. GCIP provides opportunities for the locally grown solutions to reap global impacts by providing mentoring and market access across borders.



## Global Cleantech Innovation Index

The Global Cleantech Innovation Index (GCII), a biennial index and report, was first created in 2012 to investigate the question: which countries currently have the greatest potential to produce entrepreneurial cleantech startup companies and which will commercialize clean technology innovations over the next 10 years?

The World Wide Fund for Nature (WWF) and the Cleantech Group (CTG) has produced the 3rd edition of the GCII for 2017, and UNIDO has partnered with WWF and CTG to produce a special addendum to the GCII focusing on cleantech innovation ecosystem of the eight GCIP countries. Under its policy component, GCIP seeks to enhance the enabling environment in partner countries through supporting national policies that promote innovation in clean technologies. The GCII-GCIP Country Profiles will serve as a valuable policy tool to stimulate a broader economic action plan including strategic support for cleantech solution providers.



## Empowering Women and Engaging Youth

Mainstreamed within the vision of GCIP is promotion of gender equality and women's empowerment in the technology innovation and entrepreneurship space. As part of the awareness raising and communication activities of the GCIP, special focus is paid to ensuring that women innovators and entrepreneurs are fully informed of the opportunities of the GCIP. Targeted outreach activities for women-led startups and women engineering students are some examples that aim to encourage and increase women's participation in the GCIP. Particular efforts are also made to recruit women judges and mentors, so that gender balance is achieved at all levels of the GCIP cycle. In addition, all training materials, resources, and documents are gender mainstreamed to ensure that both men and women are informed of the gender dimensions of the GCIP, and the gender dimensions relevant to technology innovation and entrepreneurship in general. In some GCIP partner countries, specific prizes and follow-up support for women-led startups are also being considered. All these efforts combined, GCIP is expected to contribute to ensuring that all men and women are given equal access and information to succeed as cleantech innovators and entrepreneurs.

The GCIP also engages extensively with young cleantech leaders of tomorrow. The youth unemployment crisis has led many highly educated young minds to consider entrepreneurial initiatives, and the GCIP can provide strong guidance and mentoring needed by the young entrepreneurs. GCIP continues work with youth organizations as well as government partners to raise awareness among youths of the opportunities and trends in the cleantech innovation field.

## Our Partners



The **Cleantech Open (CTO)** is the world's oldest and largest cleantech startup accelerator. Over the last 11 years of programming, CTO has established key cleantech innovation hubs in the U.S. and globally to find, fund, and foster the most promising cleantech startups on the planet. Since the beginning of the GCIP journey, CTO has been our knowledge partner and based on the proven accelerator model original created in Silicon Valley, the GCIP has adopted and customized the GCIP Accelerator and Global Platform. The GCIP countries benefit from CTO events, training, materials, as well as CTO's extensive network of mentors, investors and experts.



The **World Wildlife Fund for Nature (WWF)** is one of the world's largest and most experienced independent conservation organizations with the mission to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption. The Global Climate and Energy Practice (CEP) is WWF's global program addressing climate change and a move to 100 percent renewable energy through engagement with business, promoting renewable and sustainable energy, scaling green finance and working nationally and internationally on low carbon frameworks.



Founded in 2002, the mission of **Cleantech Group (CTG)** is to accelerate sustainable innovation. Our subscriptions, events and programs are all designed to help corporates, investors, and all players in the innovation ecosystem discover and connect with the key companies, trends, and people in the market. Our coverage is global, spans the entire clean technology theme and is relevant to the future of all industries.



## National Counterparts



### ARMENIA

The key objectives of the Enterprise Incubator Foundation (EIF) are to improve competitiveness of the Armenian IT/High-Tech sector in the global marketplace, build linkages with international entities, provide assistance in investment attraction, export promotion and establishment of a venture capital institutes, startup acceleration, as well as to stimulate formation of the Armenian IT industry development infrastructure, capacity building, IT/High-Tech industry development in the regions and formation of e-society in the country.

[www.eif.am](http://www.eif.am)



### INDIA

The **Ministry of Micro, Small & Medium Enterprises (MoMSME)** promotes a vibrant micro, small and medium-enterprise (MSME) sector through designing and implementation of policies, and facilitation and monitoring of programmes, projects and schemes, with a view to assisting MSMEs and for scaling-up. MoMSME encourages entrepreneurship, employment and livelihood opportunities and enhance the competitiveness of MSMEs in the changed economic scenario.

[www.msme.gov.in](http://www.msme.gov.in)



### MALAYSIA

**Malaysian Industry-Government Group for High Technology (MiGHT)** is a partnership between the industry and the public sector in Malaysia, working together to prospect for business and technology at the domestic and international market-place. It is an independent and non-profit organisation driven by a membership drawn from both the public and private sectors. It acts as a think tank that underlines the key strategies that must be taken in order to develop the country's high technology industry and to further position Malaysia as a globally competitive player. MiGHT constructs these strategies based on the combined input from the high technology industry, governmental and nongovernmental organizations, and academic institutions.

[www.might.org.my](http://www.might.org.my)



### MOROCCO

The **State Secretariat of Sustainable Development** is the ministerial department in charge of the development of the national sustainable development strategy and monitoring of its implementation and evaluation, in coordination and collaboration with the relevant ministerial departments. The State Secretariat also promotes cooperation with public bodies, local and regional authorities, the private sector and non-governmental organizations in the field of environment and sustainable development. It also works on the integration of the environmental dimension into development, education, training and scientific research programs and development of green entrepreneurship and friendly initiatives.

<http://www.environnement.gov.ma/fr/>



## PAKISTAN

The **Pakistan Council for Science and Technology (PCST)** is mandated to advise the Government on the development of Science and Technology (S&T) at the national level. The Council is involved in (S&T) and Innovation Policy making, planning, implementation and carrying out policy studies. The PCST is also the secretariat of the National Commission of Science and Technology (NCST), headed by the Prime Minister (who takes the major decisions for the development of S&T). The PCST works as a 'Think Tank' to identify the priority areas of research and development keeping in view the futuristic developments of science and technology in Pakistan.

[www.pcst.org.pk](http://www.pcst.org.pk)



## SOUTH AFRICA

The **Technology Innovation Agency (TIA)** was established in with the objective of stimulating and intensifying technological innovation in order to improve economic growth and the quality of life of all South Africans by developing and exploiting technological innovations. TIA's core business objective is to support the development and commercialization of competitive technology-based services and products. The Agency primarily uses South Africa's science and technology base to develop new industries, create sustainable jobs and help diversify the economy.

[www.tia.org.za](http://www.tia.org.za)



## THAILAND

The **Department of Industrial Promotion (DIP)**, under supervision of Ministry of Industry, is mandated to support and reinforce small and medium enterprises (SMEs), community-based enterprises, entrepreneurs, and industrial service providers to achieve excellent performances and sustainability. The activities DIP carries out to deliver on its mandate comprise enhancing industrial networking of relevant public and private sectors; recommending policies and measures on development of as well as supporting capacity building of SMEs, community-based enterprises, entrepreneurs, and service providers.

[www.dip.go.th](http://www.dip.go.th)



## TURKEY

The **Scientific and Technological Research Council of Turkey (TÜBİTAK)**, established in 1963, is the leading agency for management, funding and conducting of research in Turkey. TÜBİTAK is responsible for promoting, developing, organizing, conducting and coordinating research and development in line with national targets and priorities. Setting its vision to be an innovative, guiding, participating and cooperating institution in the fields of science and technology, TÜBİTAK not only supports innovation and academic and industrial R&D studies, but in line with national priorities, also develops scientific and technological policies and manages R&D institutes, carrying out research, and technology and development studies.

[www.tubitak.gov.tr](http://www.tubitak.gov.tr)





UNIDO believes in inclusive and sustainable industrial development as a key to poverty reduction, and climate change and clean energy concerns are central to our vision of a sustainable economic growth.

GEF and UNIDO have partnered together for the vision of the GCIP, in the effort to promote sustainable technology solutions for the environment, especially in developing countries and economies in transition, recognizing the high priority accorded to technology transfer and capacity building of SMEs within the overall industrial strategy to address environmental concerns.

## CONTACT US



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**GCIP leverages the power of innovation and entrepreneurship to address the energy, environmental and economic challenges of today. GCIP supports the development of climate solutions as profitable business models, by empowering cleantech startups and strengthening the local entrepreneurial ecosystem and policy frameworks.**



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