



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

# Global Cleantech Innovation Programme

Promoting climate and clean energy  
technology innovation and entrepreneurship



Global Cleantech  
Innovation Programme

“In today’s economic landscape, resource constraints and climate concerns are no longer externalities. They are opportunities for technology innovation and new business models, and a major driver of sustainable and inclusive economic growth. The Global Cleantech Innovation Programme (GCIP) supports emerging cleantech SMEs and start-ups to introduce innovative solutions to the market, by strengthening the local entrepreneurial and innovation ecosystems and policy frameworks. The GCIP is transforming the way we address the most pressing environmental challenges of our time.”



The United Nations Industrial Development Organization (UNIDO) has partnered with the Global Environment Facility (GEF) to foster innovation and entrepreneurship ecosystems, promoting affordable and scalable solutions that enable our partner countries to leapfrog to cleaner, more resilient economies while protecting our global commons.



**UNIDO promotes industrial development to reduce poverty, and enable inclusive globalization and environmental sustainability.** UNIDO's work responds to the Sustainable Development Goals (SDGs), and in particular SDG-9 which calls on all to help "build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation". The organization supports the transition to a sustainable energy path as a key solution to a climate that is resilient to and unaffected by economically sustainable growth. It prioritizes technology transfer and capacity building of industries, including small and medium-sized enterprises (SMEs).



**The GEF is a catalyst for action on the environment.** Through its strategic investments, the GEF works with partners to tackle the planet's biggest environmental issues. GEF funding helps reduce poverty, strengthens governance and achieves greater equality between women and men. Thus, GEF occupies a unique space in the global partnership for a more sustainable planet. It aims to expand private sector investment and commitment to environmental solutions across its focal areas and initiatives, while seeking to identify potential opportunities to enhance private sector engagement.



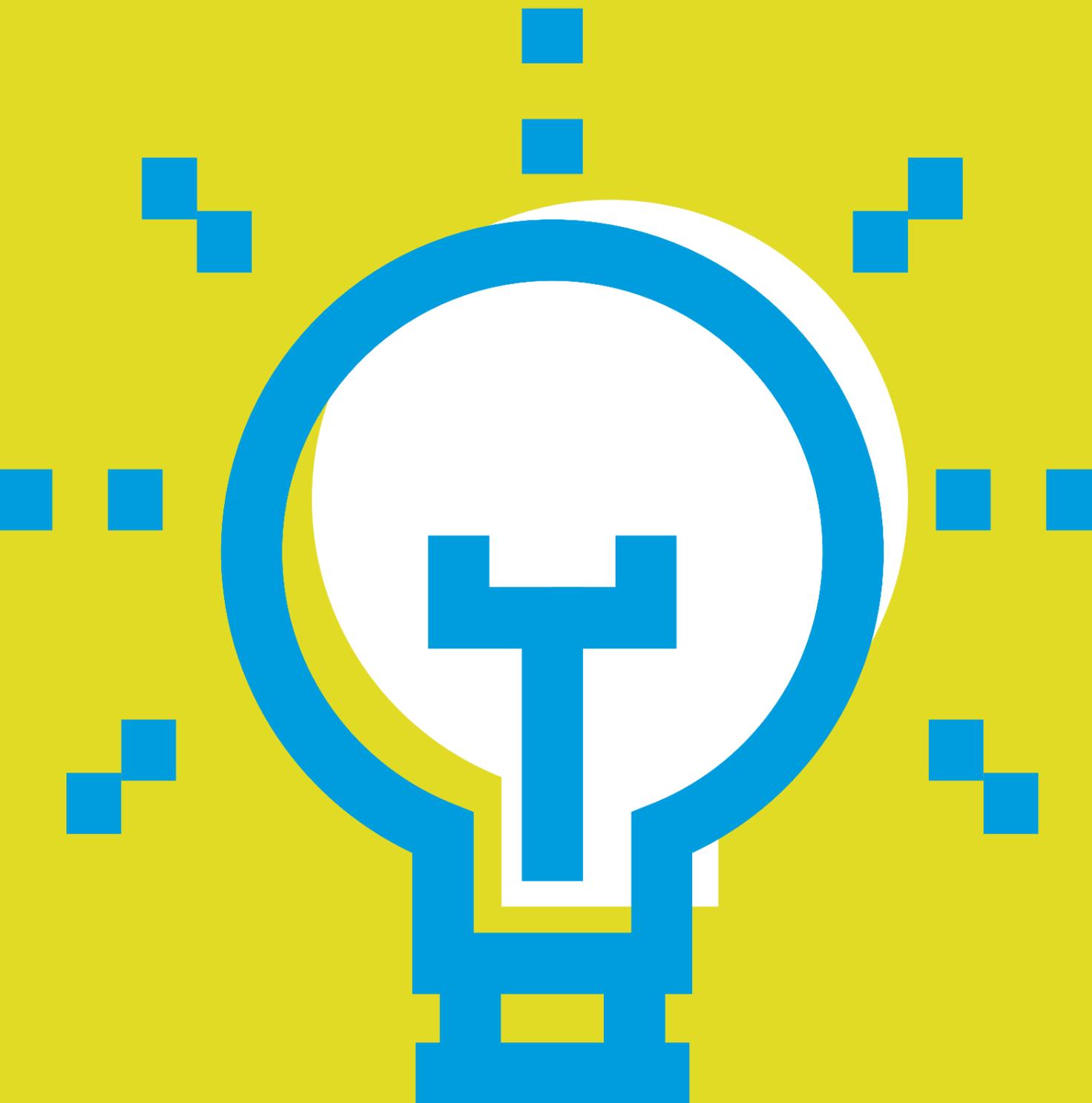
#### What is the 'global commons'?

Resource areas not governed by any nation. These areas include our shared natural resources, for example the high seas, the atmosphere, outer space and Antarctica. The health and sustainability of these resources are critical for our socio-economic development.

## Leveraging Innovation and Entrepreneurship for Transformative Impact

Global trends and experiences have shown the catalytic potential of technology innovation and entrepreneurship in seizing **opportunities for economic growth embedded in environmental challenges**. New industries and business models are emerging in sustainable energy and climate technology sectors. The agility of start-ups and SMEs allows them to be key drivers in this transition to a low-carbon economy.

For developing countries to fully participate in this alternative development trajectory and capture a growing share of the new emerging market, as well as the concomitant employment and industrialization opportunities, they need to **establish effective cleantech ecosystems to support endogenous cleantech innovations**. Such ecosystems would support the transformation of cleantech innovations into sustainable businesses by providing the private sector with the requisite network of expertise, finance and organizational resources.



## The Global Cleantech Innovation Programme

### Supporting cleantech-based start-ups and SMEs

The GCIP supports start-ups and SMEs from around the world to develop cleantech innovations into market-ready products that mitigate the causes of climate change, pollution, and resource depletion, and adapt to its negative consequence. This wave of innovation is followed by the creation of new markets, and with these, a variety of business opportunities.

With the GCIP, the start-ups and SMEs provide cleantech solutions to energy and climate challenges, as well as contribute to the transformation into a low-carbon path of clean energy systems, sustainable cities, healthy oceans and sustainable fisheries, climate resilient food systems, and landscape restoration. At the same time, the start-ups and SMEs are contributing to industrial and economic development of their countries.

**It is well understood that while sustainable energy and climate technologies have the potential to stimulate economic growth, create new job opportunities, and mitigate ecological risks; a parallel thrust is essential to establish enablers to address the innovation chasm between research results and socio-economic outcomes.**

Because global environmental challenges are experienced locally, homegrown solutions are often not only more efficient, but absolutely necessary. The GCIP works directly with start-ups and SMEs that innovate to solve local problems, and help them introduce their cleantech solutions to the local market. When the solutions with global impact potential are identified, the GCIP leverages UNIDO's international network to support scale-up and expansion of these solutions. This is where the GCIP plays an invaluable and enabling role.

### Strengthening cleantech ecosystems

In parallel to working directly with cleantech-based start-ups and SMEs towards commercialization, the GCIP also creates an enabling environment that can systematically support cleantech innovation and entrepreneurship. Our goal is to create, in each partner country, an ecosystem that enables start-ups and SMEs to succeed in developing and commercializing new and innovative cleantech solutions. We do this by strengthening national institutions and developing new policies, and partnering with national agencies to increase their capacity to identify and foster cleantech innovation in a sustainable way. More than that, we advise governments to introduce policies that enable innovations to become economically viable businesses.

**“Entrepreneurial innovation is the answer to the world’s most pressing environmental challenges, and the key to sustainable economic growth.”**

The GCIP seeks to harness the catalytic potential of innovation and entrepreneurship in SMEs and start-ups to be catalysts of sustainable economic development.



#### Innovation for impact

The GCIP promotes innovation in clean technologies through a cross-sectoral and multi-stakeholder approach to build sustainable innovation ecosystems for SMEs and start-ups.

#### A cleantech ecosystem

A cleantech ecosystem is an interconnected network of individuals, institutions, policy and regulatory frameworks, soft and hard infrastructure, market forces, social norms and values, that interact as a system to influence the cleantech innovation and entrepreneurial value chain of a country.

### Impact

Partner countries

Armenia, India, Malaysia, Morocco, Pakistan, South Africa, Thailand, Turkey, Ukraine.<sup>1</sup>

Between 2014 and 2019, more than 900 cleantech-based enterprises in eight partner countries have been trained, mentored and supported towards commercialization of their cleantech innovations, and benefited from exposure to investors, policy makers, and the media.

In addition to contributing to reductions in greenhouse gas emissions, the technology innovations fostered under the GCIP also reap positive impacts for the environment, including improved water efficiency, soil protection and waste beneficiation.

**The growth of the cleantech industry creates employment opportunities, leading to poverty reduction through income generation.**

An initial assessment of a few participating companies to demonstrate the current and potential impact of the GCIP, highlighted the following:

**Early projections show the exponential potential of the GCIP, considering that more than 900 companies have graduated from the programme.** Upon completion of the impact assessment exercise, a more precise compilation of the impact achieved, and impact projections will be available.

At the global level, GCIP is projected to have avoided GHG emissions of between 3.8 million and 7.6 million tonnes of CO<sub>2</sub> equivalent.

Building on the success of the GCIP thus far, UNIDO plans to expand the geographic scope of GCIP to 25 countries by 2020 to become a truly global accelerator of cleantech innovations.

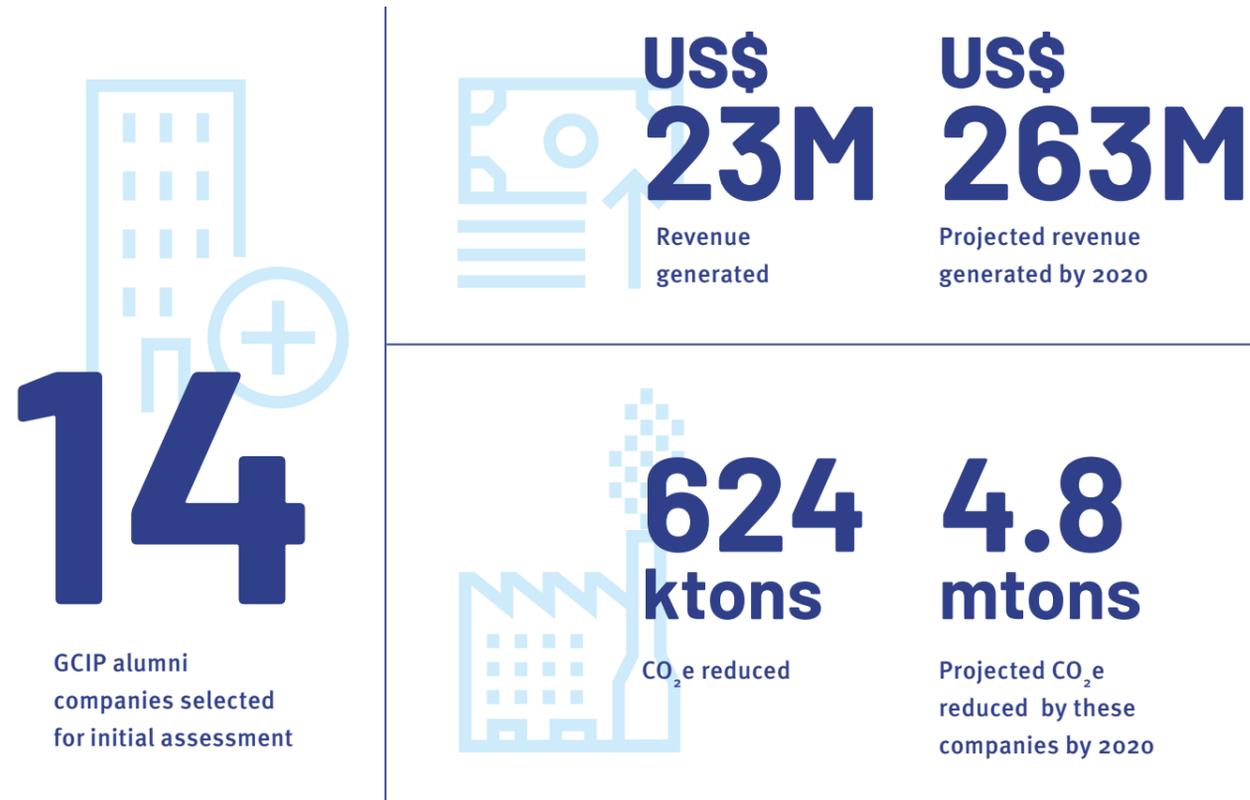
The innovations identified and developed in GCIP partner countries also have the potential to address challenges in other parts of the world.

Country Targets for GHG Emissions Avoided

GCIP Country	Target for GHG Emissions Avoided (approx. 2013-2023, tonnes of CO <sub>2</sub> e)		Unit Abatement Costs (USD/tonnes of CO <sub>2</sub> e)	
	Lower estimate	Upper estimate	Lower estimate	Upper estimate
Malaysia	425,000	849,000	1.18	2.36
Armenia	18,409	36,818	14.88	29.77
India	350,000	700,000	1.43	2.86
Pakistan	452,000	904,000	1.50	3.03
South Africa	815,000	1,630,000	1.22	2.44
Turkey	730,000	1,460,000	0.68	1.36
Thailand	811,500	1,623,000	1.23	2.46
Morocco	200,923	401,845	2.27	4.55
<b>(Total)</b>	<b>(3,802,832)</b>	<b>(7,604,663)</b>		

<sup>1</sup> Ukraine joined GCIP in 2018 and did not participate in the impact survey.

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## GCIP building blocks for success

### An effective cleantech innovation and entrepreneurship ecosystem

A cleantech ecosystem is an interconnected network of individuals, institutions, policy and regulatory frameworks, soft and hard infrastructure, market forces, social norms and values, that interact as a system to influence the cleantech innovation and entrepreneurial value chain of a country.

The GCIP employs a cross-sectoral and multi-tiered approach to build a sustainable ecosystem for cleantech innovation and entrepreneurship in small businesses.

#### Identifying and accelerating cleantech innovations

From identifying technology innovations to commercialization and application, **the GCIP supports entrepreneurs across the innovation value chain to develop demand-driven and investment-ready climate solutions.**

Early-stage cleantech and business model innovations are identified and accelerated through coaching, mentoring, and training so that they become fast-growing, scalable and investible enterprises. For select enterprises with high-impact potential, advanced support is provided for product development, piloting and commercialization of the innovations. The GCIP also supports the identification and development of demand-driven solutions that can address the most pressing environmental challenges at 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, ensuring efficiency and effectiveness in impact scaling.



#### Connecting synergies

The synergetic value of collaboration among developing countries and advanced economies is quickly leading to innovation linkages, and receiving recognition as a catalyst for global game-changing solutions.



### Innovation focus areas

Energy efficiency, renewable energy, waste beneficiation, water efficiency, green buildings, transportation, and advanced materials and chemicals.

### Linking enterprises to financing opportunities

Continued support is provided for enterprises to access early stage financing and risk capital instruments and opportunities. Strategic partnerships are established with venture capital funds, industry associations, banks and angel investors to increase their awareness as well as the likelihood of investments.

### Supporting an enabling policy and regulatory environment

The GCIP assesses the strengths and weaknesses of the national innovation landscape, and determines the set of services required to create an enabling environment for cleantech-based start-ups and SMEs in the partner country. It supports governments and agencies that have policy mandates with advice and tools to enhance the frameworks that create business incentives and obligations that address both the supply and demand side of cleantech markets. This includes assisting in the development of standards, norms and other instruments that facilitate the overall growth of cleantech markets. The GCIP also advises governments to focus on high-impact sectors, especially from the perspective of encouraging and supporting increased engagement and participation of SMEs.

**Innovation and entrepreneurship policy frameworks contribute to an enabling environment where cleantech companies can thrive and nations can benefit.**

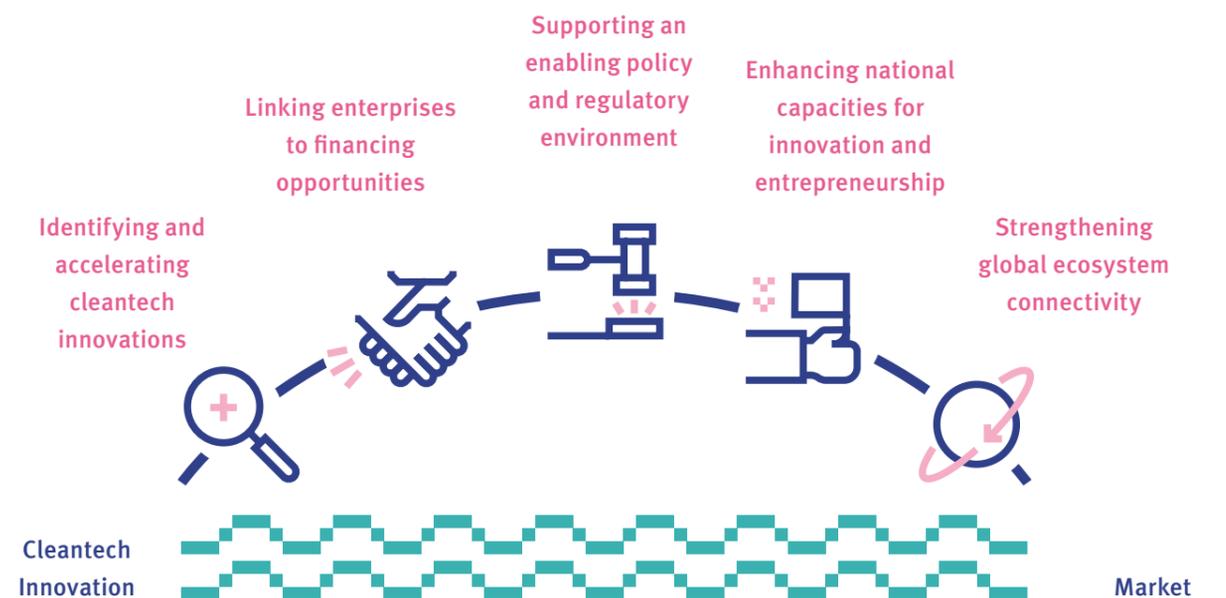
### Enhancing national capacities for innovation and entrepreneurship

### Strengthening global ecosystem connectivity

Leveraging the GCIP's unique strength as a global initiative, the national ecosystems of partner countries are connected at all levels (government agencies, start-ups and SMEs, investors, universities etc.) to facilitate knowledge transfer and sharing, technology collaboration, product co-development, market expansion, and investment facilitation.

**Today's clean technology innovations will more than likely fuel the next industrial revolution that will shape tomorrow's global economy and job market.**

### Bridging the innovation gap



预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_23122](https://www.yunbaogao.cn/report/index/report?reportId=5_23122)

