



# The GEF UNIDO Global Cleantech Programme for SMEs

**Fostering Clean  
Technology Innovation**  
in Emerging and Developing Countries

**“We are creating an innovative, global program supporting small- and medium-sized enterprises by leveraging the Cleantech Open’s global platform with UNIDO’s international network and resources.”**

— Dr. Naoko Ishii, CEO and Chairperson, Global Environment Facility

## **ENTREPRENEURIAL INNOVATION IS THE ANSWER TO OUR MOST PRESSING ENVIRONMENTAL PROBLEMS, AND THE KEY TO ECONOMIC GROWTH**

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- Innovators are developing ingenious solutions to major challenges in energy generation, distribution and storage, air and water pollution, waste management, new forms of transport and construction techniques.
- Entrepreneurship thrives in countries where there's minimal red tape, strong rule of law, ready access to venture capital, and a vibrant support network for entrepreneurs.
- Almost all net new jobs are created by growing small businesses. storage, air and water pollution, waste management, new forms of transport and construction techniques.

## **GEF, UNIDO AND CLEANTECH OPEN BRING PROVEN EXPERIENCE**

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- UNIDO and the Cleantech Open, with the support of the GEF, have joined forces to launch cleantech platforms and competitions in developing and emerging countries, based on the Cleantech Open's proven accelerator model originally created in Silicon Valley.
- UNIDO has been supporting SME's in developing countries for over 20 years.
- The Cleantech Open runs the world's largest cleantech accelerator, supporting innovators and entrepreneurs through extensive training, mentoring, showcases and access to capital:
  - Over 720 startups have completed this process in the United States alone
  - Over 40% of reporting alumni companies have now raised capital totalling over \$800M, creating thousands of jobs
- Participating countries will have access to the UNIDO's in-country resources and to the Cleantech Open's events, training, materials and an online global platform connecting entrepreneurs to a global network of mentors, investors and experts.

# THE GEF UNIDO GLOBAL CLEANTECH PROGRAMME FOR SMEs

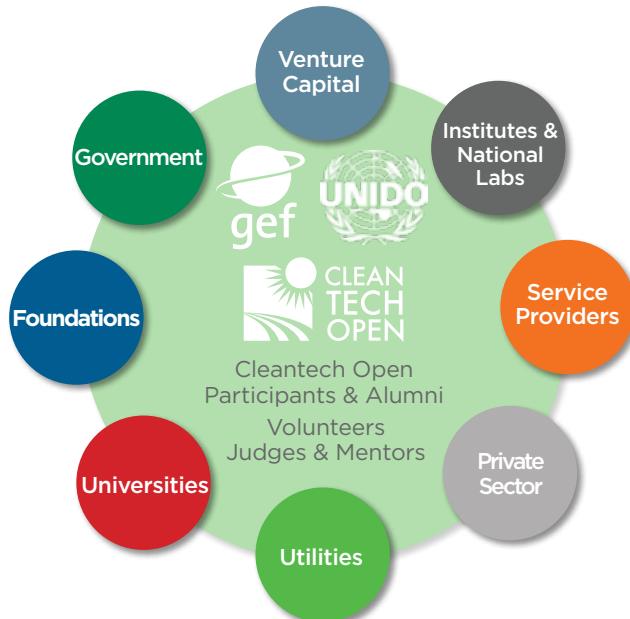
This programme is focused on enhancing both emerging cleantech startups in each country and the local entrepreneurial ecosystem and policy framework. A competition-based approach is used to identify the most promising entrepreneurs across a country, whilst local acceleration programme supports, promotes and "de-risks" the participating companies and connects them to potential investors, customers and partners. As the best cleantech startups progress through the Cleantech Platform, they are continuously trained, mentored and assessed. The very best startups from each country are brought together for the finals of the Global Competition in Silicon Valley, California, where they can both compete for the Global Prize and connect with potential partners, customers and investors from around the world.



Each country will leverage \$1 to 2m in funding from the Global Environment Facility matched by \$2m to \$3m+ in co-financing (including in-kind) from in-country public and private sector partners. The programme in each country is led by a local executing partner, supported by local stakeholders and advisors. An integral part of this programme is the development of the institutional capacity of local implementing partners, which are typically government agencies focused on SME development, clean technology and innovation. Furthermore, this programme seeks to reinforce, strengthen and connect existing in-country initiatives rather than duplicate existing activities. The GEF UNIDO Global Cleantech Programme for SMEs will unite stakeholders to find, fund and foster entrepreneurs with solutions to address today's most urgent energy, environmental and economic challenges.

In most countries, the initial GEF funding will be for 3 years with the intention of holding 2 to 3 cycles of the annual Cleantech Platform. Some countries will have national programs from the start; other countries will start regionally and expand as experience grows. At the end of each 3 year country programme, the aim is for each national cleantech platform to be fully up and running with sustainable support from the public sector and particularly private sector co-sponsors.

## BUILDING AN INNOVATION AND ENTREPRENEURSHIP ECOSYSTEM



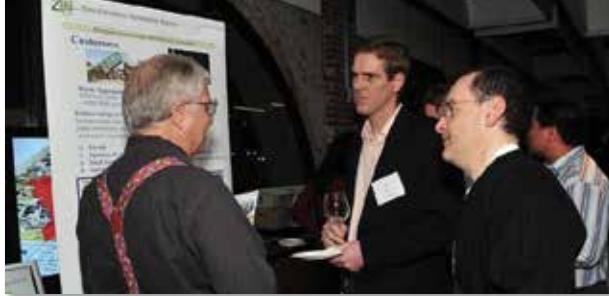
# PARTICIPATING COUNTRY STATUS REPORT | SPRING 2013

After a successful pilot in South Africa in 2011, a growing list of countries is now engaged in the GEF UNIDO Global Cleantech Programme for SMEs. First to receive funding after South Africa included Malaysia, Armenia and India. As part of the GEF-5 cycle (July 2010 - June 2014) several additional countries have already expressed a desire to launch efforts, including Pakistan, Turkey and Russia, and more countries are considering it. The diversity of applicants in size and region will allow a strong foundation for regional collaboration, South-South technology transfer, and expansion. We expect all GEF countries to benefit directly and indirectly from this support for entrepreneurship and innovation of environmental sound technologies.



## KEY ACTIVITIES

The GEF UNIDO Global Cleantech Programme for SMEs is built around four major activities of the Platform:

<b>TRAINING</b> National Academies, National Webinars and Regional Training Practice Judging and Business Clinics	<b>MENTORING</b> Local and international mentors (generalists and specialists) Business Clinics	
<b>ACCESS TO CAPITAL</b> Relationship with Strategic Investors, Angel Groups and VC firms Pitch Panels, Networking Investor Connect		<b>SHOWCASING</b> Regional event and showcases National Conference and Global Forum Press exposure

## CATEGORIES

The Cleantech Programme will focus on eight specific technology categories, with each country covering all or part based on national priorities. Applicants will be encouraged to use climate resiliency as a key design criteria. As the program evolves, additional categories for innovation to protect the global commons will be added.

	<b>ENERGY GENERATION</b>		<b>INFORMATION &amp; COMMUNICATIONS TECHNOLOGIES (ICT)</b>
	<b>ENERGY DISTRIBUTION &amp; STORAGE</b>		<b>GREEN BUILDING</b>
	<b>ENERGY EFFICIENCY</b>		<b>TRANSPORTATION</b>
	<b>CHEMICALS &amp; ADVANCED MATERIALS</b>		<b>AGRICULTURE, WATER &amp; WASTE</b>

## CASE STUDY 1

# FOSTERING CLEAN TECHNOLOGY INNOVATION IN SOUTH AFRICA

In the lead up to the 2011 climate summit in Durban, COP17, UNIDO and the Government of South Africa launched a Clean Technology Innovation Competition, part of the GEF-funded “Greening the COP17” project. The competition was organized by the National Cleaner Production Centre South Africa (NCPC), with support from the Council for Scientific and Industrial Research (CSIR), and coordinated by the Departments of Trade and Industry, Environmental Affairs, and Energy, through UNIDO. Advisory and global support was provided by the Cleantech Open, the world’s largest cleantech accelerator, with funding and support from the GEF.

Applications were invited in three categories: Energy Efficiency, Renewable Energy, and Green Building

Eight finalists were selected, and received a further round of training and mentoring before a final round of judging on the margins of COP17. All eight startups presented their technologies at a Gala Dinner during COP17 on 8 December 2011 attended by 300 high-ranking representatives from local and international government and private sector institutions. Speakers included the Minister of the Department of Trade and Industry, Dr Rob Davies; the Minister of the Department of Energy, Ms Dipuo Peters; the Minister of the Department of Science and Technology, Ms Naledi Pandor, the CEO of the GEF, Mme Monique Barbut; the Director General of UNIDO, Dr Kandeh Yumkella and the Premier of KwaZulu-Natal, Dr Zweli Mkhize.

### 2011 WINNER | ADAPTIVE AND APPROPRIATE INNOVATION PRIZE

#### **Stellenbosch Biomass Technologies (SBMT)**

*Converting industrial paper-industry waste to bio-ethanol*

“Paper sludge” is a waste stream of degraded fibres with high moisture from wood pulping and paper recycling that is presently landfilled. Bio-ethanol production from paper sludge, as biofuel for gasoline replacement, will provide numerous environmental and financial benefits, including a 45% reduction in greenhouse gas emissions.

[www.sbmt.co.za](http://www.sbmt.co.za)

### 2011 WINNER | BREAKTHROUGH INNOVATION TRACK

#### **Eco<sup>2</sup>Partnership SA**

*Green electricity generation from waste tyres*

Eco2's WASTE to ENERGY is a continuous reduction distillation (CRD) Pyrolysis plant running a dual cycle power generation facility based on proven, patented technology and successful operation of pilot pyrolysis plants. The Eco2 breakthrough technology and specialised management processes ensure quality products plus a fully automated carbon neutral, commercial scale, 60 – 500 tonnes per day plant with zero emissions.



## CASE STUDY 2

# ACCELERATING CLEAN TECHNOLOGY VENTURES IN MALAYSIA

In early 2013, the Malaysian Industry-Government for High technology (MiGHT) joined the GEF UNIDO Global Cleantech Programme for SMEs to launch the Cleantech Platform in Malaysia. The first year of the programme will be a pilot, specifically focused on just one region of the country and a sub-set of the cleantech categories (Energy Efficiency, ICT and Agriculture-Water-Waste). The aim of the programme in Malaysia is to develop a platform that will nurture and accelerate the next generation of cleantech entrepreneurs. In doing so, MiGHT will be fulfilling its vision that by 2020, Malaysia will be a major player in the cleantech industry globally, impacting not just the region, but environmental, energy and economic challenges around the world.

On the 20 February 2013, MiGHT, the Cleantech Open and UNIDO, brought together a diverse range of stakeholders from the public and private sectors to discuss the launch of the programme in Malaysia. Importantly, the meeting not only forged new collaborations between many existing initiatives but secured specific commitments from stakeholders.

In early June 2013, the GEF UNIDO Cleantech Programme for SMEs in Malaysia will be publicly launched through an extensive media campaign and outreach partners. The application period will close in early August, with selected entrepreneurs participating in intensive training and mentoring from August to October. On the 10-13 October 2013, the national winner will be announced as part of the 2013 International Greentech and Eco Products Exhibition and Conference Malaysia (IGEM 2013) in Kuala Lumpur with over 60,000 expected attendees. IGEM will also be held in conjunction with the 4th Annual Global Entrepreneurship Summit (GES 2013) with the aim of advancing green growth through global entrepreneurship. In November, the winning team from Malaysia will attend the Cleantech Open Global Forum in Silicon Valley, California to connect with investors, partners and potential customers from all over the world.



## CASE STUDY 3

# PROMOTING CLEAN ENERGY TECHNOLOGY INNOVATIONS AND ENTREPRENEURSHIP IN INDIA

In May 2013, the GEF UNIDO Cleantech Programme for SMEs was publically launched in New Delhi led by the Ministry of Micro, Small and Medium Enterprises (MSME) in India and the national executing agency, the Federation of Indian Chambers of Commerce and Industry (FICCI).

This project aims to promote clean energy technology innovation and entrepreneurship in selected SME clusters across India through a cleantech innovation platform and competition. The MSME (micro, small and medium enterprises) sector in India plays a vital role in the Indian economy, contributing 45% of manufacturing output, 40% of exports and employing more than 69 million people. Tackling climate change and seizing the economic opportunity for green industry, requires increased design, deployment and scaling of innovative clean technologies by SMEs across India.

Through new collaborations across disciplines and sectors, this programme will build the national capacity for clean technologies and develop a supportive local entrepreneurial ecosystem for SMEs developing clean and resource efficient innovations. An important aspect of this cleantech innovation platform is the ability to connect with other synergistic initiatives and entrepreneurs in countries around the world. Through the growing community of national partners in the GEF UNIDO Global Cleantech Programme, selected Indian cleantech entrepreneurs will be connected to potential partners in Malaysia, South Africa and around the world. The most innovative cleantech entrepreneurs identified through the programme in India will have an opportunity to meet potential partners, customers and investors from around the world at the annual Cleantech Open Global Forum in Silicon Valley.



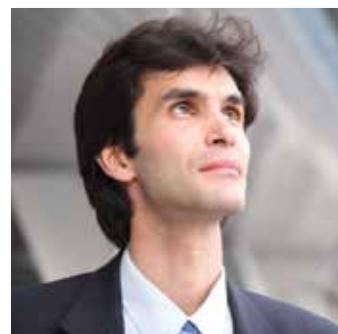
## CASE STUDY 4

### NURTURING EMERGING CLEANTECH ENTREPRENEURS IN ARMENIA

In February 2013, Armenia became one of the first countries in East Europe to join the GEF UNIDO Global Cleantech Programme for SMEs with the support of the Ministries of Nature Protection, Energy & Natural Resources and Agriculture. The cleantech programme in Armenia will be led by the SME Development National Center of Armenia (SMEDNC), an agency created by the government in 2002, which has subsequently supported thousands of SMEs.

Small medium enterprises play a vital role in the Armenian economy, accounting for over 40% of the country's GDP and nearly 20% of its export volume. Increased local innovation and adoption of clean technologies is vital since Armenia faces some key energy and economic challenges. Currently, the country imports nearly two-thirds of its energy, mostly from a limited number of foreign suppliers. Energy costs have risen considerably in recent years, placing greater strain on all businesses, especially SMEs. Greater adoption of clean technology has the potential to not only increase the competitiveness of Armenian SMEs but to create much needed high-value green jobs in a country with widespread poverty and underemployment.

The initial phase of the cleantech programme in Armenia will focus on Yerevan and will expand to include all other provinces in the subsequent years. Selected entrepreneurs will be intensively trained, mentored and connected to potential customers, partners and mentors. The SMEs with the most innovative technologies will be brought to the Cleantech Open Global Forum in Silicon Valley and to key events in the region.



# A PROVEN CLEANTECH PLATFORM

TOGETHER, WE FIND, FUND, AND FOSTER THE MOST PROMISING CLEANTECH STARTUPS

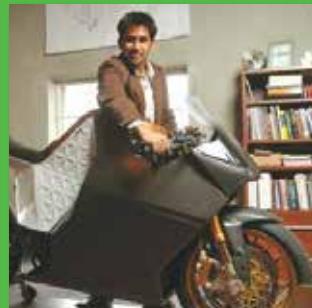
The GEF and UNIDO's global partner, the Cleantech Open, has supported over 720 startups in the United States alone, that have collectively raised over \$800m in external funding. Here are some examples:



**FLODESIGN**  
NORTHEAST REGION  
**\$143 million raised**



**NEW SKY ENERGY**  
ROCKY MOUNTAIN REGION  
**\$4 million raised**



**MISSION MOTORS**  
WESTERN REGION  
**\$14.7 million raised**

COMPANY	FUNDING	COMPANY	FUNDING
Adura Technologies	\$25.5 million	Enervault	\$24.5 million
Aurora Biofuels	\$64 million	7ACTechnologies	\$3.4 million
Power Assure	\$35 million	EcoFactor	\$13.9 million
Hydrovolts	\$1.4 million	Halotechnics	\$7 million
Micromidas	\$3.6 million	Xolve	\$6 million
Alphabet Energy	\$29 million	Indow Windows	\$1 million
Rivertop Renewables	\$2.1 million	Resolute Marine Energy	\$1.6 million



**EARTHCLEAN**  
MIDWEST REGION  
**\$4 million raised**



**FINSIX**  
NORTHEAST REGION  
**\$5.2 million raised**



**PURALYTICS**  
NORTHWEST REGION  
**\$1.2 million raised**

## CLEANTECH OPEN ALUMNI PROFILES

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Cleantech Open alumni companies have developed into some of the industry's most impressive success stories. These eager entrepreneurs started with bright ideas and built strong relationships and business strategies to support their growth into world-class companies. Today, they are leading the way in the cleantech sector, generating green jobs and contributing to a surge of positive environmental impact.



### **ALPHABET ENERGY Thermoelectrics for Waste Recovery**

[www.alphabetenergy.com](http://www.alphabetenergy.com)

**2009 Energy Efficiency Finalist | \$29 Million Funded**

Alphabet Energy is commercializing breakthrough, inexpensive waste-heat recovery products. Alphabet aims to offer the most modular and scalable heat-recovery technology available, and to tap into the potential \$100 billion market for the conversion of medium- and high-grade waste heat into electricity — offsetting as many as 500 million metric tons of carbon per year.



### **BIOFILTRO Cleantech for the Protection of Public Health, Food Safety, and the Environment**

[www.biofiltro.cl](http://www.biofiltro.cl)

**2011 Global Ideas Competition Winner**

BioFiltro is a commercially proven biological reactor technology for the treatment of household sewage and liquid industrial waste of organic origin. The US-patented technology uses 80% less energy, requires no chemicals, and is 1/3 the cost of competing solutions. To date, BioFiltro has close to 100 installations worldwide, providing sewage treatment for communities from 6 to 15,000 people and liquid industrial waste treatment for large-scale industries.



### **HYDROVOLTS In-stream Hydrokinetic Turbines for Clean Energy Generation Around the World**

[www.hydrovolts.com](http://www.hydrovolts.com)

**2009 Pacific Northwest Region | \$1.4 Million Funded**

Hydrovolts' new hydropower technology taps a plentiful but overlooked source of renewable energy from water currents in canals and channels around the world. Hydrovolts turbines generate reliable, local, clean power economically and easily in millions of locations around the world.



### **PURALYTICS An Amazing New Technology for Purifying Water**

[www.puralytics.com](http://www.puralytics.com)

**2010 Grand Prize Winner | \$1.2 Million Funded**

Puralytics has pioneered an entirely new way to purify water using light-activated nanotechnology, enabling pure water in places and applications where it was not possible before. While there are many ways to treat water including chemical, thermal, filtration, and separation technologies, Puralytics has pioneered photochemical purification technologies which have compelling advantages in many applications.



We are focused on supporting the development of strong innovation and entrepreneurship ecosystems around the world at a local, city, state and regional level. The Cleantech Platforms and Competitions that we are building, will not only identify the most promising entrepreneurs in participating countries but will unite a diverse range of local partners for the single goal of accelerating and supporting the very best cleantech ventures. Our vision is a programme that enables an entrepreneur in Kuala Lumpur or Hyderabad to receive mentoring from an expert in Johannesburg or Istanbul, license their technology to a partner in Sao Paulo or Shanghai and secure venture funding from Silicon Valley, Moscow or London.

## JOIN THE NETWORK

If you are a country representative or a potential sponsor or partner, contact us now:

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