

GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip





UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



SUSTAINABLE DEVELOPMENT GOAL 9
INDUSTRY, INNOVATION AND INFRASTRUCTURE

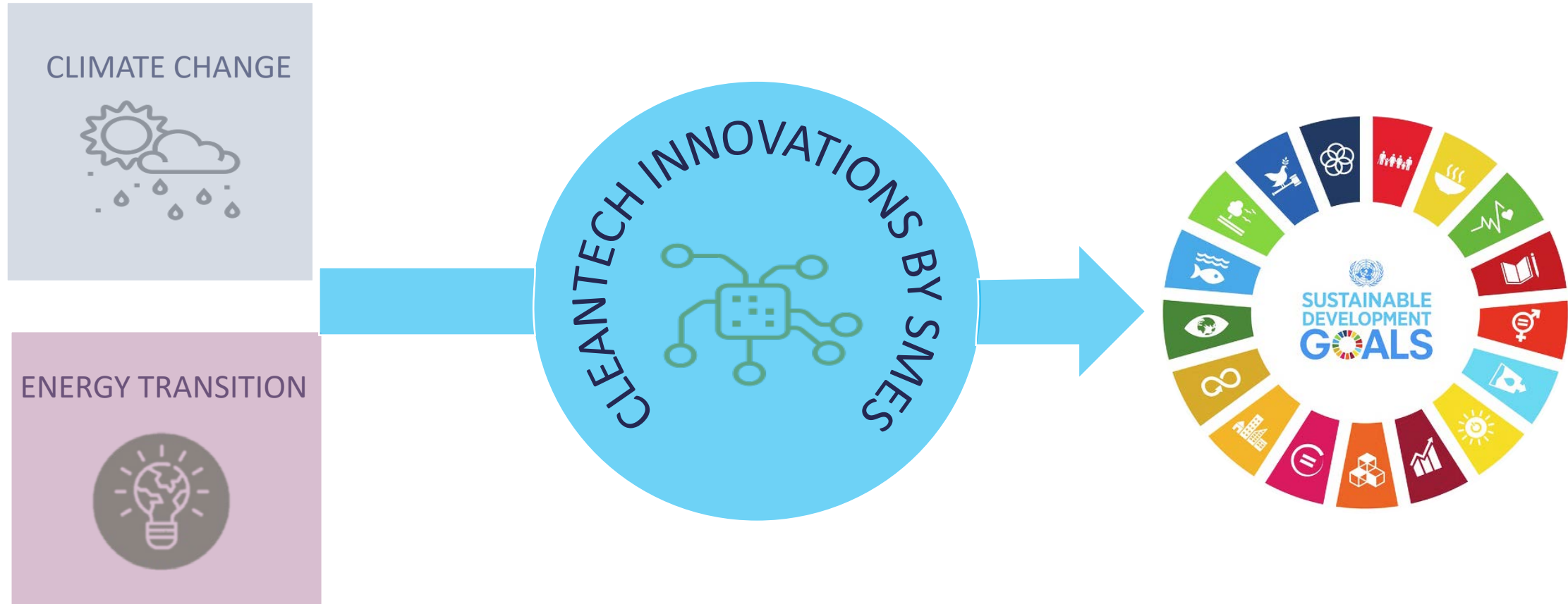


Global Cleantech Innovation Programme (GCIP)

Accelerating innovation and entrepreneurship in clean technologies



Global Context: Challenges and Opportunities



Cleantech Opportunity for SMEs and Start-ups

1. GLOBAL CLEANTECH INDUSTRY

Will exceed 6.4 trillion US\$ in the next decade

2. ACCESS

To over 1,7 trillion US\$ for SMEs and start-ups in developing countries

3. OPORTUNITY

For SMEs and start-ups to be key engines of growth in the cleantech sector in developing countries

4. POTENTIAL

For cleantech SMEs and start-ups to contribute to green growth, creation of new revenue streams, innovation and job creation.



Renewables



Renewables



Renewables



Renewables



Renewables

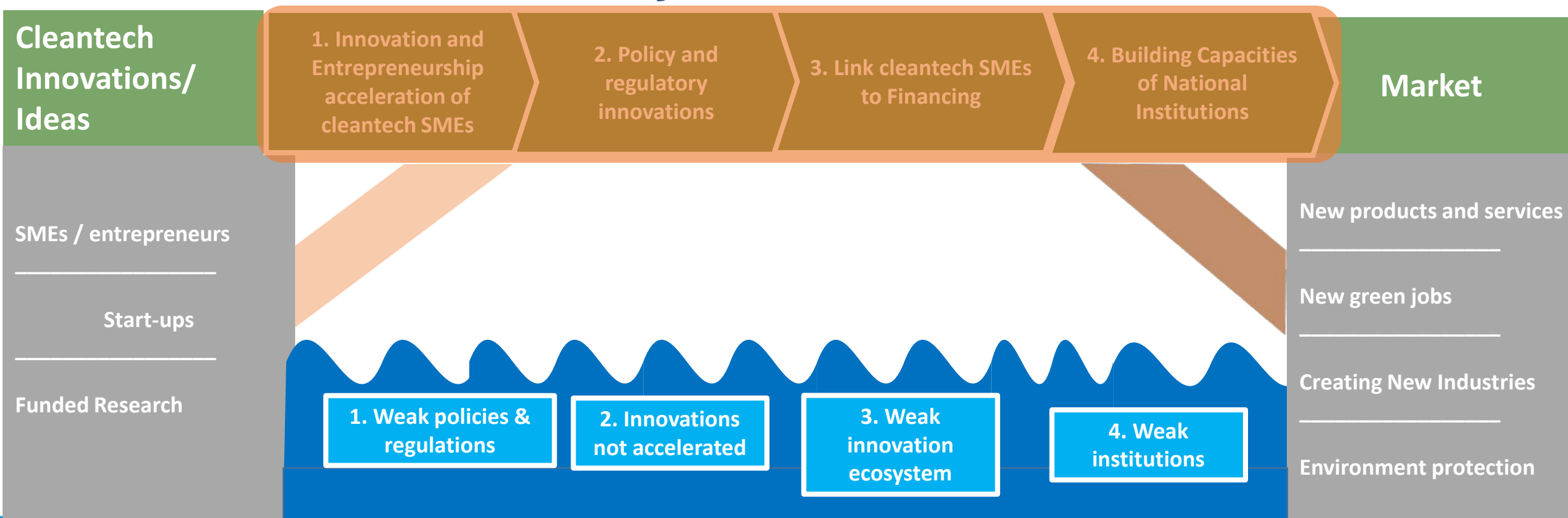


Renewables



Renewables

Bridging the Valley of Death in Cleantech Innovation



GCIP services – fostering cleantech innovation ecosystems for SMEs

1. Entrepreneurship and business acceleration of SMEs

Identify early-stage local cleantech innovations & provide coaching, mentoring and training

2. Policy and regulatory innovations

Develop policy and regulatory innovations – demand and supply of cleantech markets

3. Link SMEs to Financing

Investor Connect events to link to angel investors, venture capital funds etc.

4. Building Capacities of National Institutions

Train institutions on acceleration, commercialization, upscaling support

Cleantech innovation and entrepreneurship ecosystems

State Governments

Venture Capitalists

Universities

National Institutions

Foundations

Service Providers

Utilities

Corporations

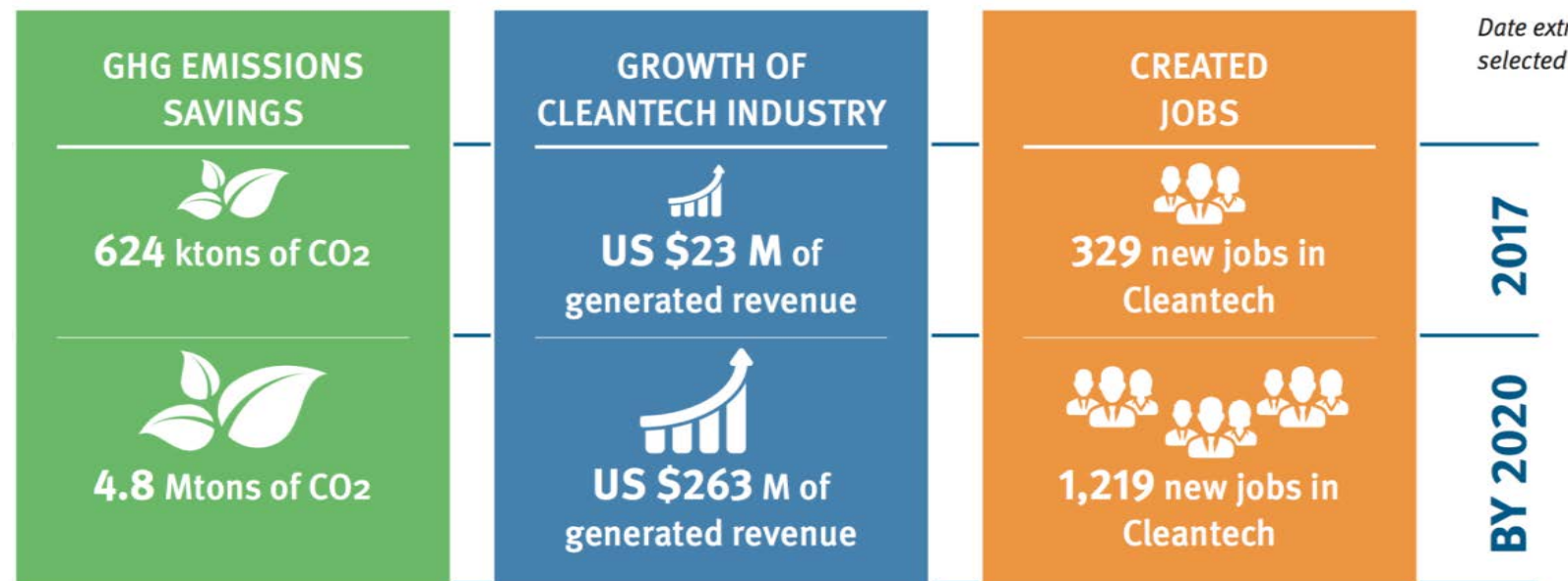


GCIP Partner Countries to date



GCIP Impact

>865 start-ups/SMEs accelerated/4years



Projection from 14 selected GCIP supported startups



Gender mainstreaming

32%

Percentage of female-led ventures in GCIP-SA 2017 cohort

32%

Percentage of female-led ventures in GCIP-Pakistan 2017



25%

Percentage of female-led ventures in GCIP-Turkey 2017



53%

Percentage of female-led GCIP ventures at the 2018 GCIP Global Forum

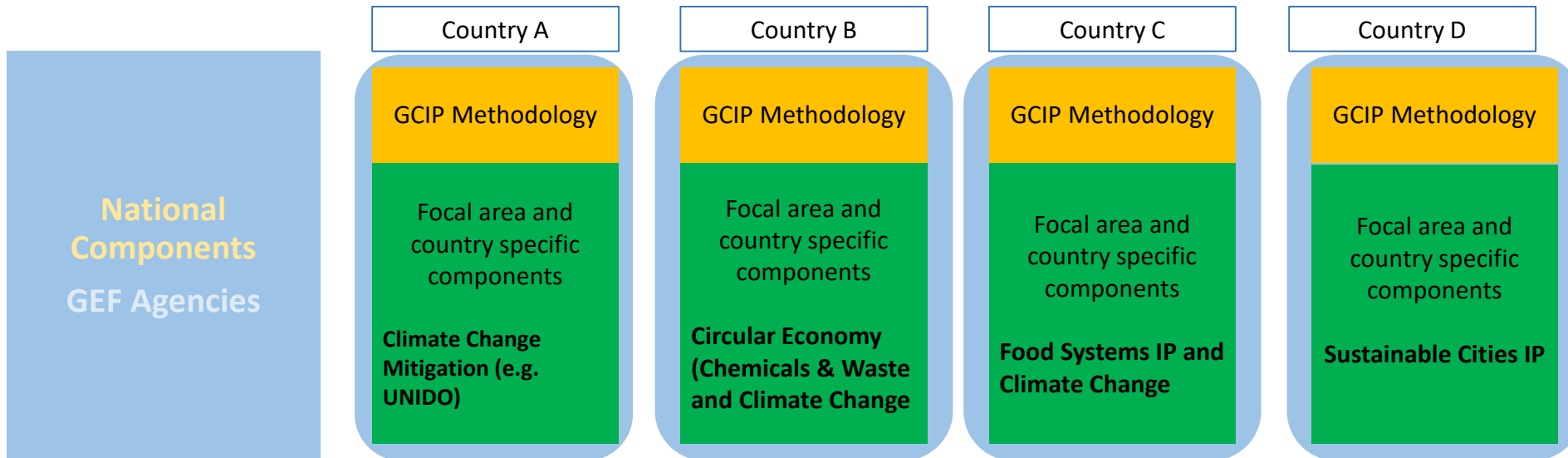


GCIP expansion plans (20 + countries)

GCIP in GEF-7

Global Component

GCIP Global Coordination Project



- **Decentralized RE + storage.**
- **Electric drive technologies and e-mobility.**
- **Accelerating EE adoption**



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



SUSTAINABLE DEVELOPMENT GOAL 9
INDUSTRY, INNOVATION AND INFRASTRUCTURE



Contact Us



Stay connected via Twitter
[@GCIPsmes](#) [#GCIP](#)



Send us an email
gcip@unido.org

Thank you!!

Mr. Alois P. MHLANGA
Chief, Climate Technology and Innovations Division
Email: a.mhlanga@unido.org



GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip



THE RUNNER-UP Cleantech Global Forum 2018

The Winner

GEF UNIDO Cleantech Programme for SMEs in Thailand 2016

TOM-CASAVA:
The Conversion of Problematic and Valueless
Cassava Stumps into High Price and High Value
Activated Carbon



Thailand



WHY *CASSAVA STUMP*?



TROUBLE



ISSUES



LONG-TERM



Activated Charcoal From Cassava Stump's Product



- Veg./Fruits Washing Pack
- AC soup
- cat sand
- Industrial Air Filter



Markets & Customers

MARKETS:

- The beachhead segment is **industrial air/pollution filter** which have shown the most prominent effectiveness. **Household cat sand and vegetable/fruit washing pack** which also have shown very well effectiveness is the second beachhead segment.

CUSTOMERS:

- **Domestic companies** in Thailand that use AC for air pollution filter industry such as SCG, PTT, etc. For washing pack using in restaurants, hotels, and hospitals.
- **Global companies** use AC for air pollution filter industry including SUEZ France, Korea, China.

Social & Economic Impact

- Selling of cassava stumps at 1,000 Baht/MT.
Average Income Increased 230 USD/year

	2018	2019	2020
<i>Beneficial Farmers (families)</i>	<i>1,518</i>	<i>2,215</i>	<i>3,016</i>

Environment Impact

- Eliminate the wild field cassava stump burning and ***reduce the CO₂ emission.***
- Air pollution ***reduction/Improvement of air quality*** and the people's health.

	2018	2019	2020
Cassava stump utilized (MT)	10,627	15,757	21,113
<i>T.CO₂ Emission Reduction</i>	<i>21,254</i>	<i>31,516</i>	<i>42,227</i>

WHEN I STRONG... HUMAN BEING&SOCIETY WILL BE MORE STRONGER.



Milestones & Achievements

MILESTONES:

- Focus on export AC using in *air pollution filter in factories industry esp. Waste and chemical industry* and export to international market in Europe and USA.
- Household vegetable/fruit washing pack which also export in many countries including Europe and USA.

ACHIEVEMENTS:

- R&D With Department of Nutrition Faculty of Public Health, Mahidol University
- Certified for *10 POISONOUS substances free* by the Standard Laboratory

Next Steps

“Environmental problems are a global issue that every human being is responsible for”

Thus, everyone have to share the work in order to protect THE EARTH.

- We would like to find **GRANTS FUND** for R&D, Product development and scale up business.

GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip



Green³ IoT Solutions



Maher Chekkouri

Description / Problem

- **Safetrack** was founded by experts in Business Intelligence, Artificial Intelligence and Sustainable Development. Our goal is to democratize access to clean-tech.
- Millions of fully functional smartphones are thrown away every year because of a broken display. We give them a new life as IoT devices for smarter cities and villages.



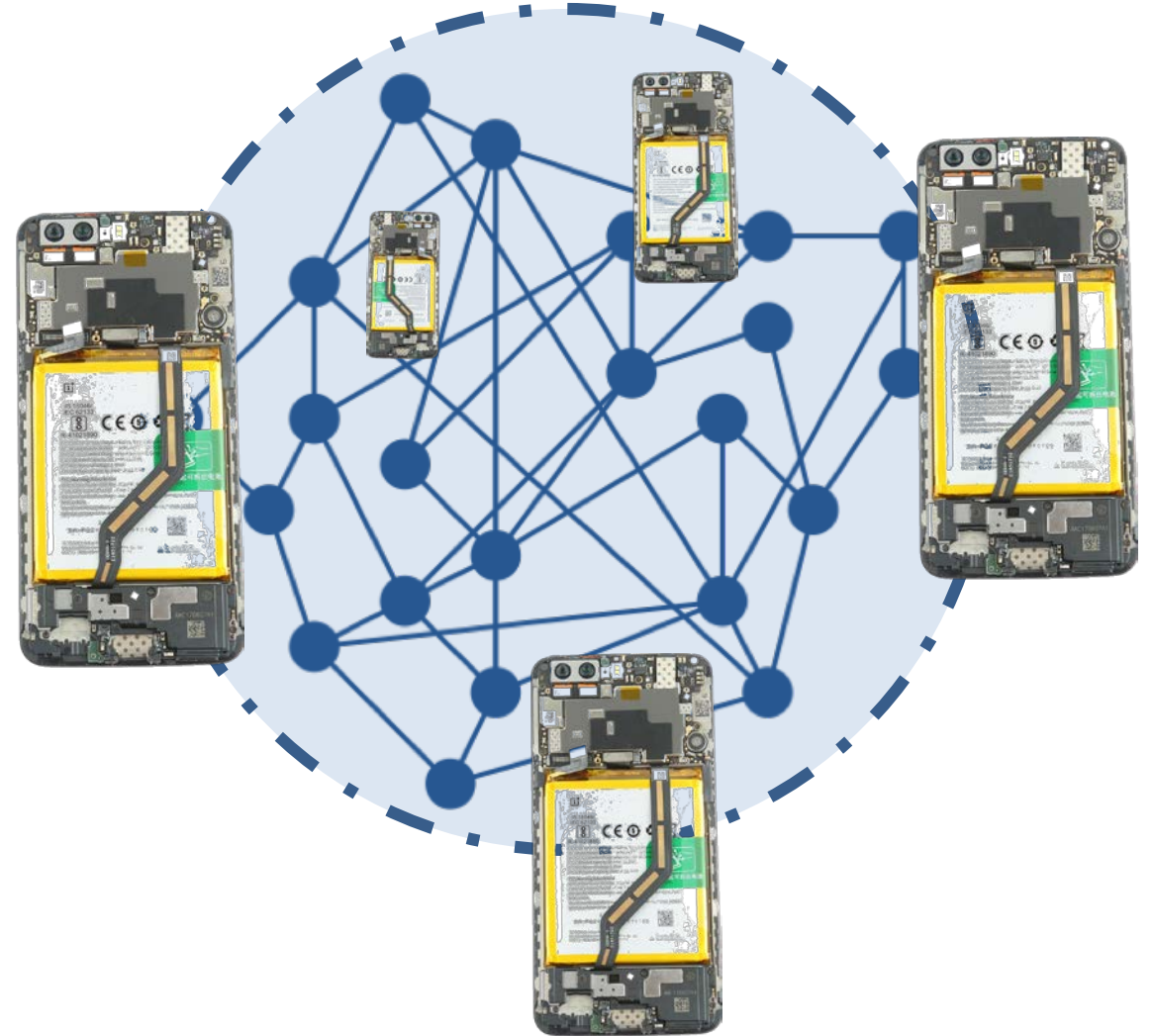
PRODUCT



TECHNOLOGY

AI driven android based cloud computing & IoT platform

- Energie efficient,
- Mobile, Server-less ,
- Off-grid, Energy efficient
- Bandwidth efficient
- Easy to deploy and maintain in remote/inaccessible locations



Markets & Customers



Sustainability all the way



-70%

Impact

Distribution

Green³

production



Techleaf

تكليف



Morocco's first
cleantech cooperative

Milestones & Achievements

- Our first client: organic farm



changer



Next Steps: Survive

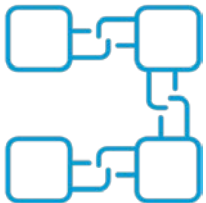


thrive

40% of our beachhead



Used smartphone collection points



blockchain based communication model



info@sftrak.com

Chekmahir@gmail.com



GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip



The CARBOMART logo features the word "CARBOMART" in a blue, sans-serif font. The letter "O" is replaced by a circular icon containing a green leaf-like shape.

CARBOMART

The Trading Platform
for
Sustainable Carbon Credits

A decorative horizontal bar composed of five parallel lines in light yellow, light green, teal, light blue, and dark blue.

Katowice, COP24

The GCF CARBOMART logo consists of the letters "GCF" in a stylized blue font above the word "CARBOMART" in a smaller blue font. To the right of the text is a graphic of five horizontal lines in light green, teal, light blue, and dark blue, which are slightly curved at the right end.

**GCF
CARBOMART**

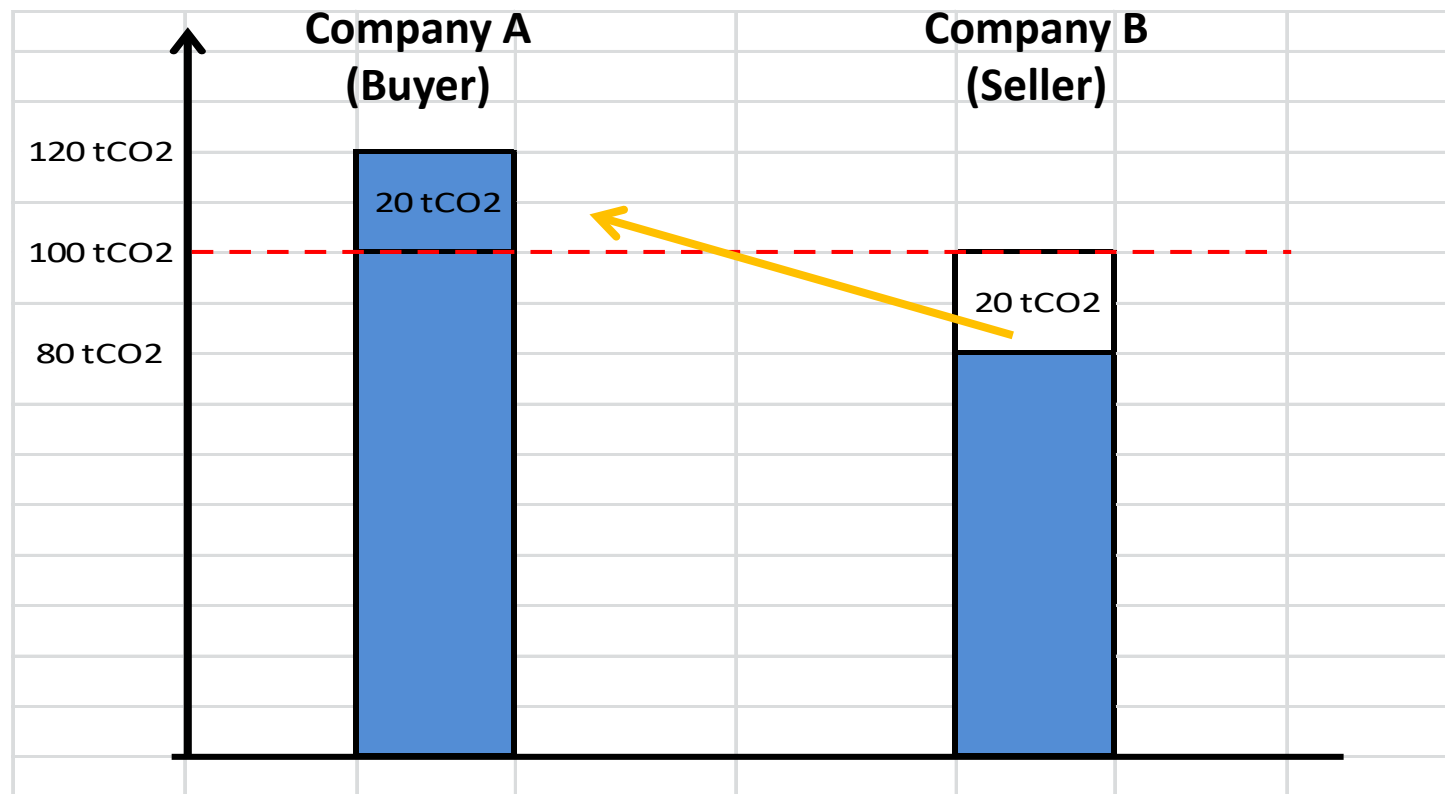


Yalçın YILMAZ
Managing Partner

- Carbon Consultancy Services
- 2011-Ankara, Turkey



Compliance Carbon Market

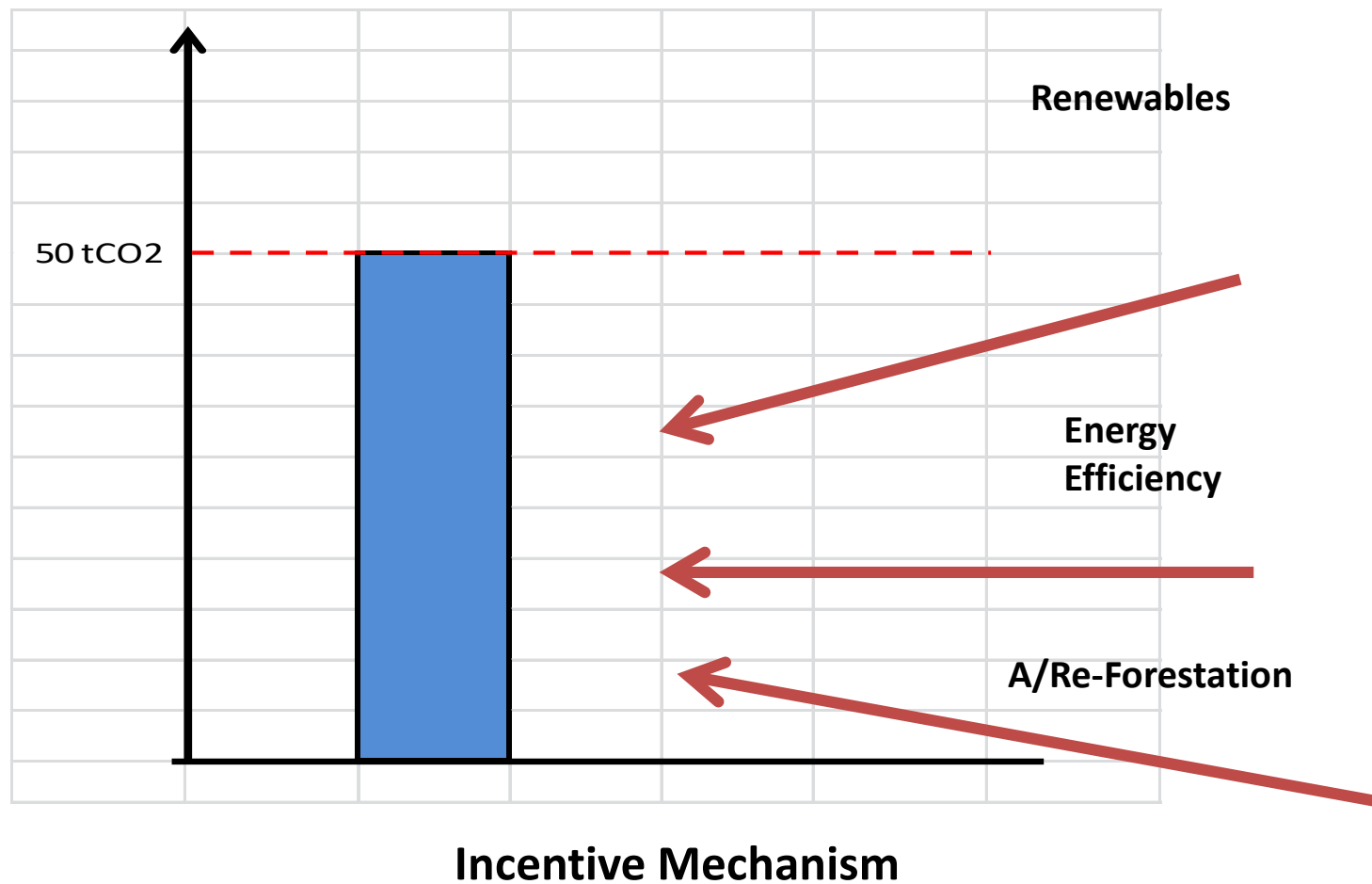


- Kyoto Protocol (2005)
- CDM, JI, EU ETS
- Legal obligation

GCF

CARBOMART

Voluntary Carbon Market



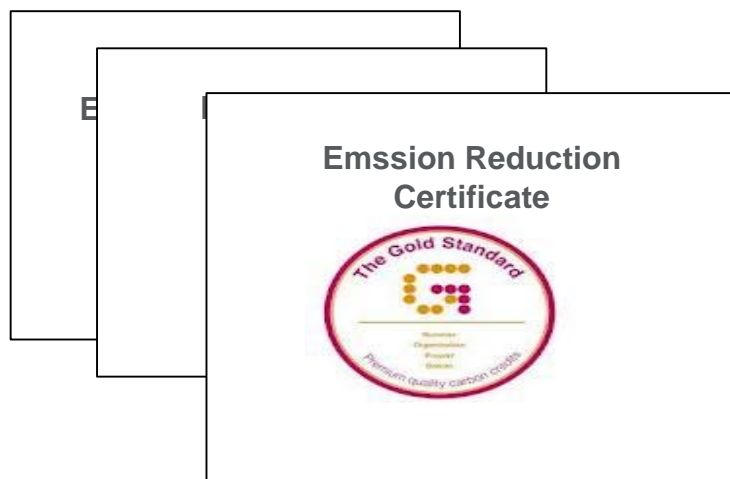
GCF

CARBOMART

Voluntary Carbon Market

Sellers

- ▶ Turkey, China, India, Brazil, Indonesia, African Countries (Kenya, Nigeria, etc.)
- ▶ Sustainability is important
i.e.: Women employment, technology transfer, biodiversity, etc.



Buyers

- ▶ Marketing
- ▶ Social Responsibility
- ▶ Main Buyers (EU - USA)

GCF

CARBOMART



Voluntary Carbon Market

Current State Problems

What is the price of a carbon credit?

- Standard (GS, VCS,...)
- Project Type (Wind, Reforestation,...)
- Location (Country)
- Project Scale (Large, Small, Micro)
- Vintage Year
- Quantity
- Sustainability Criteria (Women Employment, Education, Biodiversity, etc...)

Reference Point !

GCF

CARBOMART



Voluntary Carbon Market

Current State Problems

Buyers	Sellers
1-Too many project documents to be reviewed to find the right project (Each project has min. 100 pages documentation)	1- Can not reach directly to the end buyers (staff-time)
2- Not easy to understand the technical details of carbon projects	2- Can not define the outstanding features of their project (women employment, education, biodiversity etc.)
3- Or, high consultancy and brokerage costs. (Money Loss up to 75%)	3- High brokerage costs. (Less profit up to 50%)



CARBOMART

Green Dan.Finans EnerjiCevreMuh.Tar.Mus.Ins.San.veDisTic.Ltd.Sti [TR] https://www.carbomart.com

Uygulamalar Solar Power PV Enerji HTML Editors Diğer yer işaretler

CARBOMART Home About Blog Contact FAQ

Enter Username Password Login

☐ Remember me Forgot Password?

CARBOMART

THE TRADING PLATFORM FOR SUSTAINABLE CARBON CREDITS

ACCESS MANY EMISSION REDUCTION PROJECTS

SEARCH BASED ON PROJECT SPECIFICATIONS

PERFORM LINE BY LINE PROJECT COMPARISON

RESERVE AND BUY CARBON CREDITS ON-LINE

Your CARBOMART account yet? >>>

Register Now!

GCF

CARBOMART

CARBOMART Sustainability Comparison Tool



Project AR

[View](#)


Project B1

[View](#)

» GENERAL

Standard	Gold Standard	VCS Social Carbon
Project Type	Wind	Hydro
Scale	Small Scale	Small Scale
Country	Turkey	Turkey
Vintage Year	2016	2015
Unit Price(250 - 1.000 units)	2.75 eur	1.95 eur
Unit Price(1.001 - 5.000 units)	1.8 eur	1.3 eur
Unit Price(5.001 - 20.000 units)	1.5 eur	1.1 eur
Unit Price(20.001 - 50.000 units)	-	0.99 eur
VCUs Available	12300 (tCo2)	21000 (tCo2)
Installed Capacity	10 MW	12 MW

CARBOMART

Benefits

Buyers	Sellers
1- Select the right project in minutes. (instead of reading thousands of pages)	1- Directly access to the end buyers
2- Easy to understand technical details via comparison tool	2- Ready to use template to show off outstanding features of carbon projects
3- No commission, No Consultancy Fee - Save up to 75%	3- Low commission rate (8%-20%) - Save up to 42%





CARBOMART

Revenue Model & Pricing

- Brokerage:
 - 8% -20%
 - Only From Sellers
 - After sales, as success fee
- Annual Registration Fee
 - Only From Buyers
 - To keep the platform secure





CARBOMART



European
Commission
Horizon 2020
European Union Funding
for Research & Innovation



The Trading Platform for Sustainable Carbon Credits



Phone: +90 312 473 0399
Mobile: +90 535 356 6820
E-mail: contact@carbomart.com

GCF

CARBOMART



Thank You



GCF

CARBOMART



GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip





FOOD PACKAGING FROM RICE STRAW PAPER

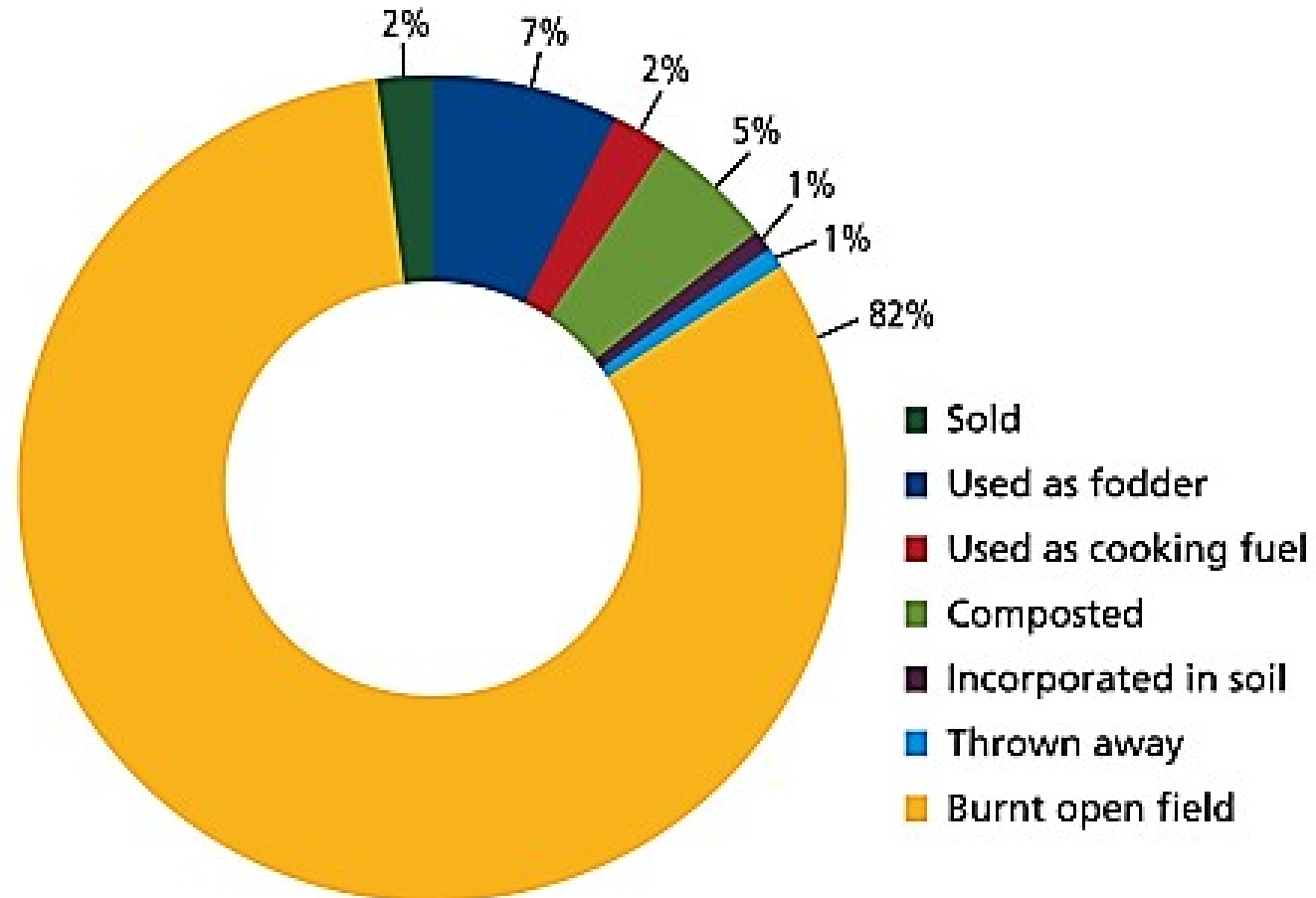


NON-TOXIC ACID



Presented By: **GROW Team**

Rice Straw



Nobody else can do this.
But we CAN.



All destination of new rice straw paper packaging story, our group would like to said that we are the first company which can apply to use rice straw in every part of papermaking processes.

PROJECT DEVELOPMENT FOR “ZERO WASTE”

From rice straw everything we can

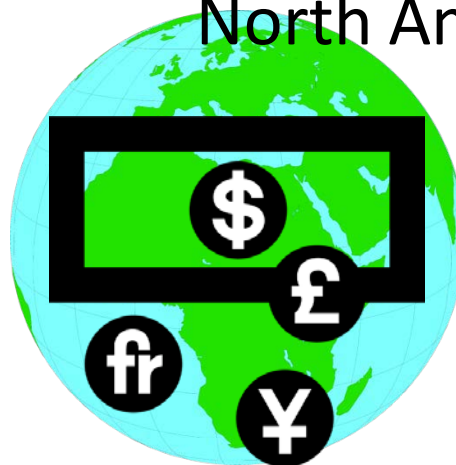


The Global Paper Packaging Market

A \$345.31 billion by 2022

Key Markets

APAC region leads the market with a revenue share of 34% in 2016, followed by Europe and North America



Sustainability & Environment Impact



- To reduce the environmental impact, we set up our goal for long term for paper product management, according to world regulations.
- To reach UN Sustainable Development Goals (SDGs).



Certification

This certification, issued by the Department of Environmental Quality Promotion, shows that the carbon footprint value of the upcycled rice straw paper was 0.67



$\frac{\text{kg CO}_2}{\text{m}^2}$. By using discard rice straw for manufacturing paper, **Fang Thai save 3.03**

$\frac{\text{kg CO}_2}{\text{m}^2}$ **GHG emissions from the production of virgin materials and the disposal of wastes.** As a result, this material follows the carbon footprint criterion of UPCYCLE Carbon Footprint certification scheme. The product can reduce CO2 emission

Collaboration & Partnership





PULP FACTORY

Product : Dry Pulp

Capacity : 6 ton per day

Country of Origin : Thailand

Function : Molding pulp product Paper sheet.



PAPER FACTORY

Product : Paper Sheet

Country of Origin : Thailand

Function : Packaging, Wrapping etc.



Fang Thai Factory

fangthaifactory@gmail.com

www.fangthaifactory.com



“GROW”

CREATING

better sustainable

PACKAGING SOLUTIONS

GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip



Mobile Inspection of Renewable Power Plant FARASHA SYSTEMS, Enhancing Your Sustainability!



Abderahman KRIOUILE, CEO of FARASHA SYSTEMS





Very Long Diagnostic Time

⇒ Safety, Performance, High O&M Cost



Hard-to-reach areas

⇒ Degradation of industrial installations



Our Mission:

“Help Reduce the Economic and Environmental O&M Costs of Renewables”

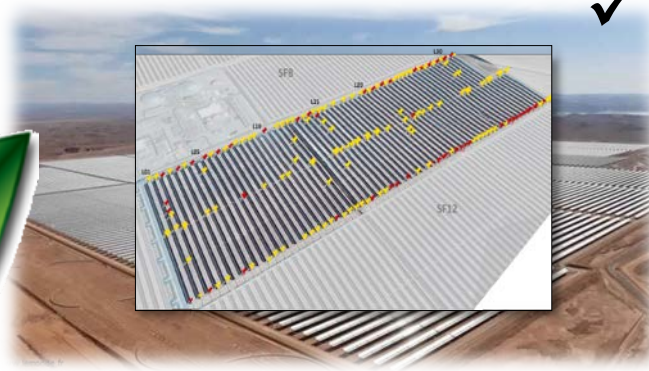




✓ (Very quick) Inspection of Solar Fields and Wind Farms



✓ AI Processing of Collected Data and Images

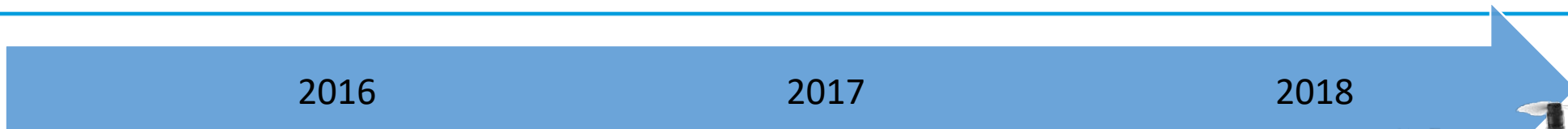


✓ (Precise) Localization and Classification of observed issues



✓ Prioritization of O&M Decisions and Action Plans

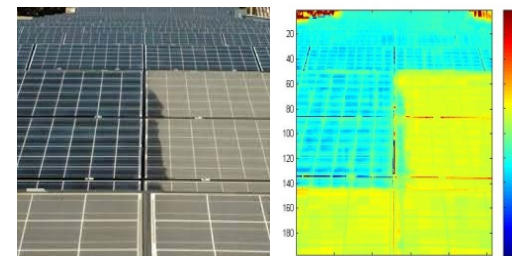




Drone or vehicle inspection

Data Processing and Analysis

Reporting



MARKETS:

- Beachhead segment :
CSP Power Plant in Morocco
- Adjacent markets:
CSP / PV / Wind inspection in Middle East Africa
- How big is the total market opportunity?
 - CSP Worldwide in 5 years \$ 40 M / year
 - PV + Wind 200 times larger than CSP

CUSTOMERS:

Who are your current customers?



Who are your future customers?

- **Operators of CSP, PV, Wind power plant**
- **Users of PV installations of +36 kWc**
- **Industrials and Agricultures**

Milestones & Achievements



Farasha™

Mars 2016

**Farasha Systems
company founded**

2014

**Start of the Project
Support of Masen**



Septembre 2016

**First meeting with
Acwa Power and NOMAC**



July-August 2017
**Field Test on
NOOR Ouarzazate**



2018

**First commercial
contract in CSP**

2019
**MEA Market
CSP+PV+Wind**





inspection@farasha.net

www.farasha.net

[Fb.com/FarashaSystems](https://fb.com/FarashaSystems)

[Linkedin.com/company/farashasystems/](https://linkedin.com/company/farashasystems/)



GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip



Episome Biotechnologies

EPICELLULYSE XT

CEO

Murat Bahadir Kilinc



WHAT WE DO

biogas plant
based on **enzymatic**
pretreatment technology
that solves **waste** problem of
paper industry



WHAT IS THE PAIN?

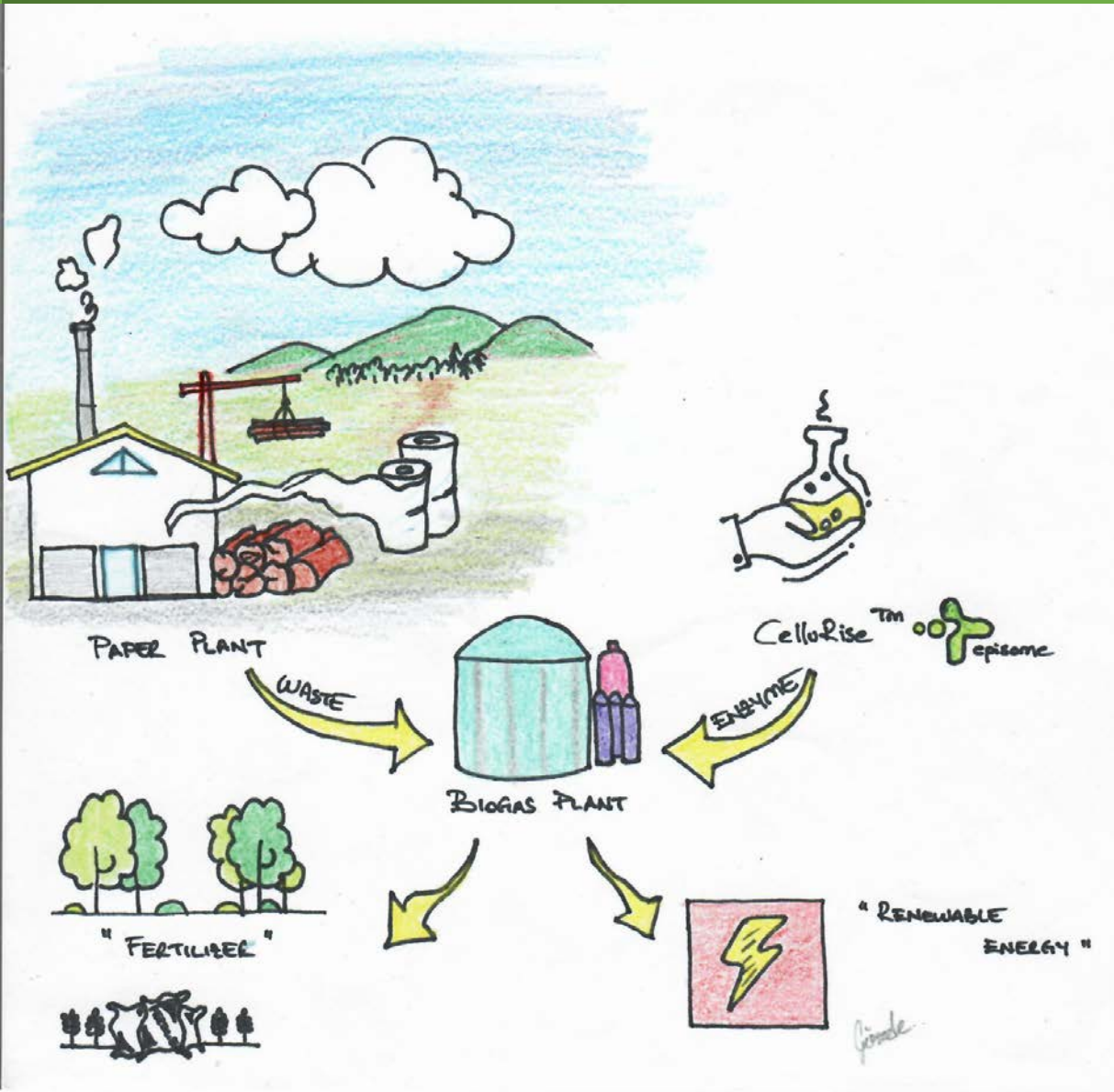
**High Waste Disposal Cost
+ Fines and Fees :**

3 Billion USD/Year Globally.

7 Million USD/Year for a Paper Plant.



PRODUCT

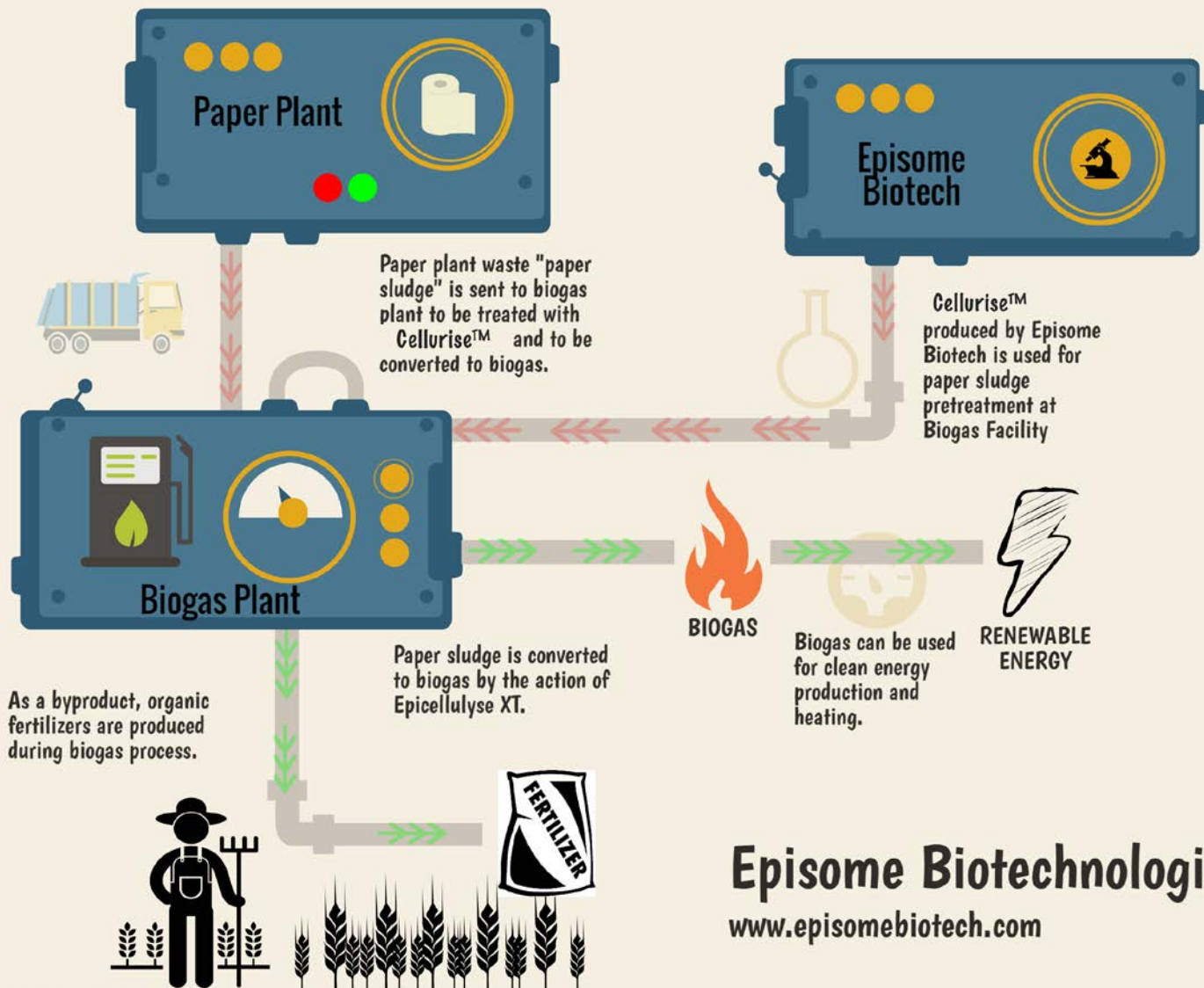


3 Billion USD Disposal
Cost



9.5 Billion USD Energy & Fertilizer
Profit

TECHNOLOGY



Intellectual Property:
**"USE OF A CELLULOSE
HYDROLYSATE FOR
BIOGAS PRODUCTION"**
WO/2016/209183

PILOT PLANT



INSTALLATION

Sep'17

BIOGAS

220 m³/mo.

FERTILIZER

660 kg/mo.

Pilot Plant in Modern Karton, Corlu-Turkey

EPICELLULYSE XT vs. CURRENT SOLUTIONS

SOLUTION	CAPEX	OPEX	REVENUE	PAYBACK TIME	EFFECT TO NATURE
EPICELLULYSE XT	\$\$\$	\$	PROFIT	< 5 Years	Ò"Ò"Ò"Ò
INCINERATION	\$\$\$\$	\$\$\$	NCEA	NCEA	đ đ
LANDFILLING	NCEA	\$\$\$\$	NCEA	NCEA	đ đ đ
LANDSPREADING	\$	\$	NCEA	NCEA	Ò

TEAM

BECTRIO
ONSTRUCTION



Bahadir
Founder&CEO
10+ Years of Experience



Murat, Ph.D.
Founder&CSO
10+ Years of Experience



Karolinska
Institutet

UT SOUTHWESTERN
MEDICAL CENTER



Bilkent University



Gozde
Chief Lab.Expert



Elif
Downstream Expert



Ozge
Upstream Expert



Ayse
Bioengineering Expert

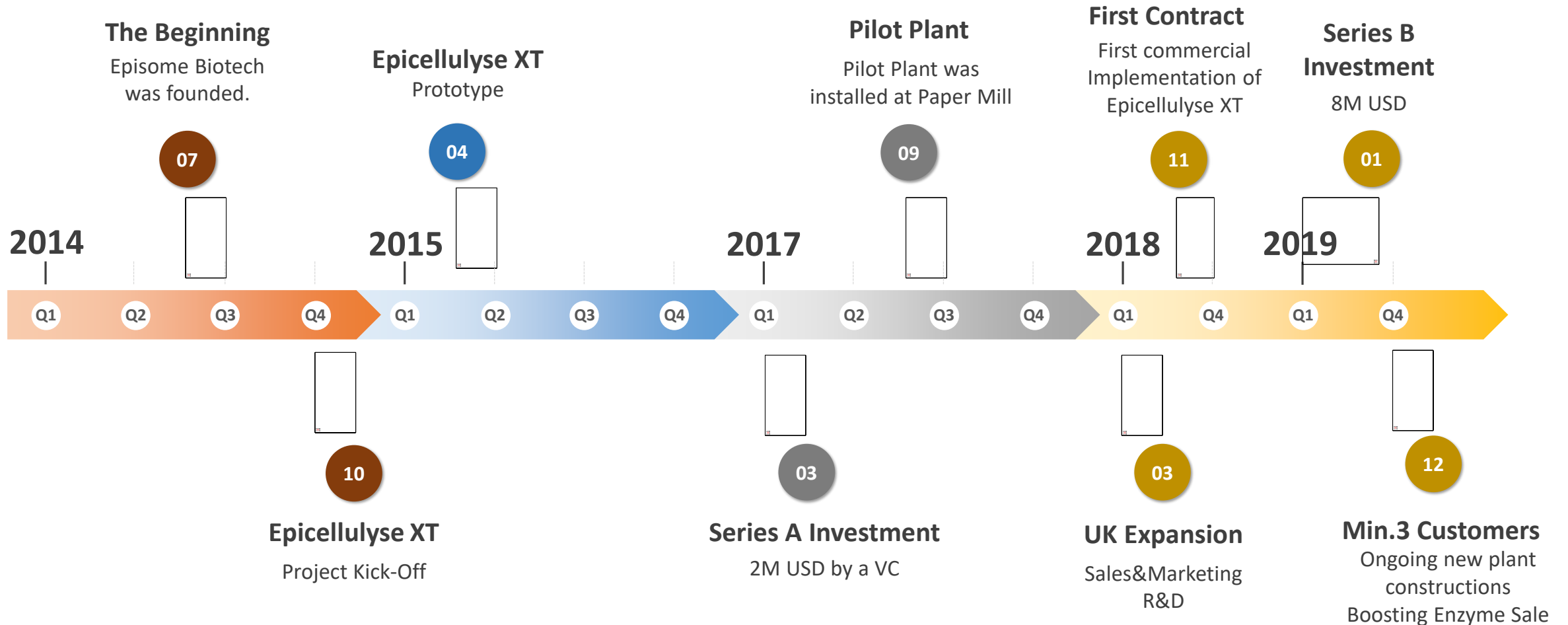


Kadir
Mass Enzyme
Prod.Tech.



Berkay
Marketing-Networking

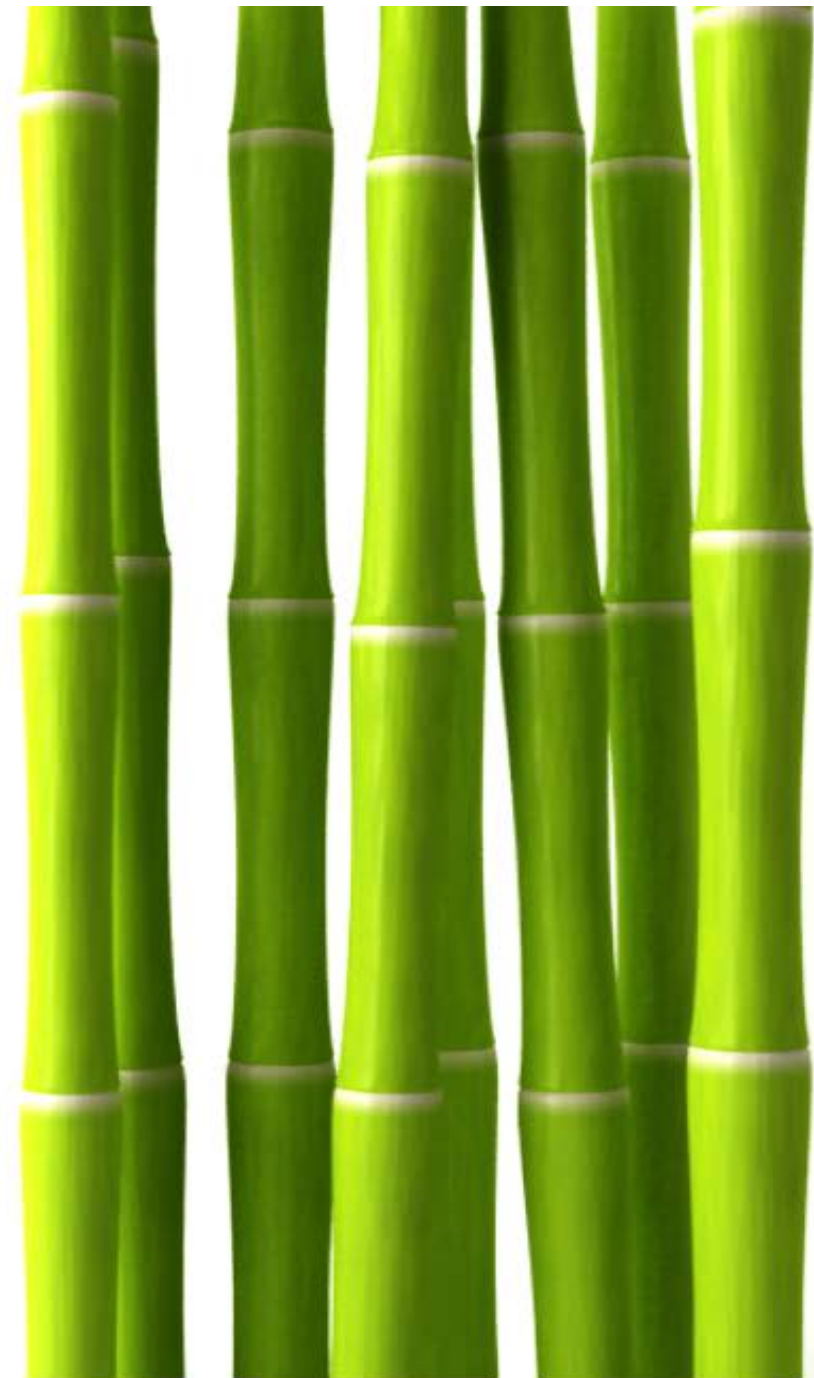
MILESTONES



Less chemicals
More Biology!



www.episomebiotech.com



GCIP @ COP24



GEF-UNIDO INNOVATION TALKS

**HIGH-IMPACT CLEANTECH
INNOVATIONS & ENTREPRENEURS
IN DEVELOPING COUNTRIES**



#COP24 #GCIP #UNIDO #theGEF

10h-11h30 | 11 December 2018
GEF Partnership Pavilion

@GCIPsmes
www.unido.org/gcip





Independent
Evaluation Office
GLOBAL ENVIRONMENT FACILITY

Highlights of Evaluation of GEF- UNIDO Global Cleantech Innovation Programme (GCIP) December 2018

Ms. Baljit Wadhwa
Senior Evaluation Officer
GEFIO

Outline

- 1 Why Evaluate GCIP?
- 2 Overview of GCIP
- 3 Evaluation Objectives and Methods
- 4 Evaluation Highlights

Why Evaluate GCIP?



Part of IEO
Evaluations of GEF'S
Private Sector
Engagement



GCIP targets
cleantech
SMEs/startups



GCIP targets
Climate Change
Focal Area

Evaluation Objectives & Methods

Key Evaluation Questions:

- What is the relevance of the GCIP in participating countries?
- How effective has GCIP been in meeting its planned outcomes?
- What direct and indirect impact did GCIP deliver?
- What was the additionality of the projects?
- To what extent are the GCIP's results likely to be sustained?

Mixed Methods Approach:

- Literature Review
- Project Documents Review
- Stakeholder Interviews
- Online Survey
- Participation in field visits as part of Terminal Evaluations

Highlights of Evaluation's Findings



GCIP is highly relevant for developing seeking to develop cleantech innovation as an engine of low carbon economic growth



There was a need and opportunity in the chosen GCIP countries to develop the cleantech space



All GCIP startups (795 in 2017; 25% women-led) are developing innovations with environmental and social benefits

Highlights Continued



Survey respondents ranked *Business Development Training, Mentorship and Opportunities to Showcase Technologies* as the most beneficial elements of GCIP.



GCIP project performance has improved over time through support for business acceleration, capacity building and institutional strengthening



At least 12 startups (Armenia, India, Turkey and South Africa) were able to access finance ranging from \$US 5,000-\$US 1.9 million attributable to GCIP.

Highlights Continued



GCIP Additionality

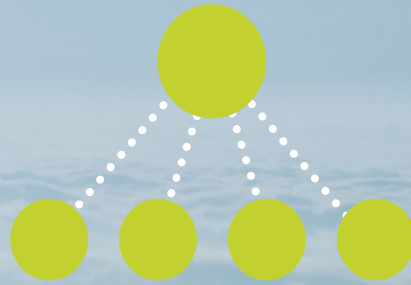
GCIP projects were designed to address additionality of GEF involvement in the projects.



Highlights Continued



Policy and regulatory strengthening additionality was not realized in a meaningful way.



Global coordination between country projects was not readily realized.



3 year duration insufficient for completion of activities. Almost all projects had no-cost extensions up to 26 months

Highlights Continued



Countries that ran more than the targeted 2-3 competition-based Accelerators put in place more anchors for sustainability



Monitoring and evaluation was strengthened over time. Implementing teams focused more on tracking outputs rather than outcomes.



GCIP's model successfully enlarged the available pool of resources through catalyzing the support of private ecosystem actors

Highlights Continued



The “right” national host institution boosts country ownership and enhances prospects for sustainability.



GHG reductions are foreseen over a 10 year period. Without post-completion M&E systems it will be difficult to verify estimated reductions.



To date, 4 countries (Turkey, South Africa, Pakistan and Thailand) are pursuing a second phase under GEF-7.



Independent
Evaluation Office
GLOBAL ENVIRONMENT FACILITY

Thank you

bwadhwa@thegef.org
gefieo@thegef.org