



WIPO innovation driven activities in Green Technology of S-S / Δ relevance

Roundtable on Fostering South-South and Triangular
Cooperation in Intellectual Property and Innovation. 15th
May 2023

Session 1 WIPO's Work on South-South and Triangular
Cooperation – where are we heading?

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Green Technology and Research Manager

GLOBAL CHALLENGES DIVISION

WIPO

The evolving risk landscape 2007-20

Top 5 Global Risks in Terms of Likelihood

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1st	Infrastructure breakdown	Blow up in asset prices	Asset price collapse	Asset price collapse	Storms and cyclones	Income disparity	Income disparity	Income disparity	Interstate conflict	Involuntary migration	Extreme weather	Extreme weather	Extreme weather	Extreme weather
2nd	Chronic diseases	Middle East instability	China economic slowdown	China economic slowdown	Flooding	Fiscal imbalances	Fiscal imbalances	Extreme weather	Extreme weather	Extreme weather	Involuntary migration	Natural disasters	Climate action failure	Climate action failure
3rd	Oil price shock	Failed and failing states	Chronic diseases	Chronic disease	Corruption	Greenhouse gas emissions	Greenhouse gas emissions	Unemployment	Failure of national governance	Climate action failure	Natural disasters	Cyberattacks	Natural disasters	Natural disasters
4th	China hard landing	Oil price shock	Global governance gaps	Fiscal crises	Biodiversity loss	Cyberattacks	Water crises	Climate action failure	State collapse or crisis	Interstate conflict	Terrorist attacks	Data fraud or theft	Data fraud or theft	Biodiversity loss
5th	Blow up in asset prices	Chronic diseases	Deglobalization (emerging)	Global governance gaps	Climate change	Water crises	Population ageing	Cyberattacks	Unemployment	Natural catastrophes	Data fraud or theft	Climate action failure	Cyberattacks	Human-made environmental disaster

Top 5 Global Risks in Terms of Impact

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1st	Blow up in asset prices	Blow up in asset prices	Asset price collapse	Asset price collapse	Fiscal crises	Financial failure	Financial failure	Fiscal crises	Water crises	Climate action failure	Weapons of mass destruction	Weapons of mass destruction	Weapons of mass destruction	Climate action failure
2nd	Deglobalization	Deglobalization (developed)	Deglobalization (developed)	Deglobalization (developed)	Climate change	Water crises	Water crises	Climate action failure	Infectious diseases	Weapons of mass destruction	Extreme weather	Extreme weather	Climate action failure	Weapons of mass destruction
3rd	Interstate and civil wars	China hard landing	Oil and gas price spike	Oil price spikes	Geopolitical conflict	Food crises	Fiscal imbalances	Water crises	Weapons of mass destruction	Water crises	Water crises	Natural disasters	Extreme weather	Biodiversity loss
4th	Pandemics	Oil price shock	Chronic diseases	Chronic disease	Asset price collapse	Fiscal imbalances	Weapons of mass destruction	Unemployment	Interstate conflict	Involuntary migration	Natural disasters	Climate action failure	Water crises	Extreme weather
5th	Oil price shock	Pandemics	Fiscal crises	Fiscal crises	Energy price volatility	Energy price volatility	Climate action failure	Infrastructure breakdown	Climate action failure	Energy price shock	Climate action failure	Water crises	Natural disasters	Water crises

Source: Global Risks Report 2019, World Economic Forum

■ Economic
 ■ Environmental
 ■ Geopolitical
 ■ Societal
 ■ Technological

Global risk assessment 2023

Global risks ranked by severity over the short and long term

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period"

Short term	Long term
1 Cost-of-living crisis	1 Failure to mitigate climate change
2 Natural disasters and extreme weather events	2 Failure of climate-change adaption
3 Geoeconomic confrontation	3 Natural disasters and extreme weather events
4 Failure to mitigate climate change	4 Biodiversity loss and ecosystem collapse
5 Erosion of social cohesion and societal polarization	5 Large-scale involuntary migration
6 Large-scale environmental damage incidents	6 Natural resource crises
7 Failure of climate-change adaption	7 Erosion of social cohesion and societal polarization
8 Widespread cybercrime and cyber insecurity	8 Widespread cybercrime and cyber insecurity
9 Natural resource crises	9 Geoeconomic confrontation
10 Large-scale involuntary migration	10 Large-scale environmental damage incidents
11 Debt crises	11 Misinformation and disinformation
12 Failure to stabilize price trajectories	12 Ineffectiveness of multilateral institutions and international cooperation
13 Prolonged economic downturn	13 Interstate conflict
14 Interstate conflict	14 Debt crises
15 Ineffectiveness of multilateral institutions and international cooperation	15 Cost-of-living crisis
16 Misinformation and disinformation	16 Breakdown of critical information infrastructure
17 Collapse of a systemically important industry or supply chain	17 Digital power concentration
18 Biodiversity loss and ecosystem collapse	18 Adverse outcomes of frontier technologies
19 Employment crises	19 Failure to stabilize price trajectories
20 Infectious diseases	20 Chronic diseases and health conditions
21 Use of weapons of mass destruction	21 Prolonged economic downturn
22 Asset bubble bursts	22 State collapse or severe instability
23 Severe mental health deterioration	23 Employment crises
24 Breakdown of critical information infrastructure	24 Collapse of a systemically important industry or supply chain
25 State collapse or severe instability	25 Severe mental health deterioration
26 Chronic diseases and health conditions	26 Collapse or lack of public infrastructure and services
27 Collapse or lack of public infrastructure and services	27 Infectious diseases
28 Proliferation of illicit economic activity	28 Use of weapons of mass destruction
29 Digital power concentration	29 Proliferation of illicit economic activity
30 Terrorist attacks	30 Digital inequality and lack of access to digital services
31 Digital inequality and lack of access to digital services	31 Asset bubble bursts
32 Adverse outcomes of frontier technologies	32 Terrorist attacks

2 years

1	Cost-of-living crisis
2	Natural disasters and extreme weather events
3	Geoeconomic confrontation
4	Failure to mitigate climate change
5	Erosion of social cohesion and societal polarization
6	Large-scale environmental damage incidents
7	Failure of climate change adaptation
8	Widespread cybercrime and cyber insecurity
9	Natural resource crises
10	Large-scale involuntary migration

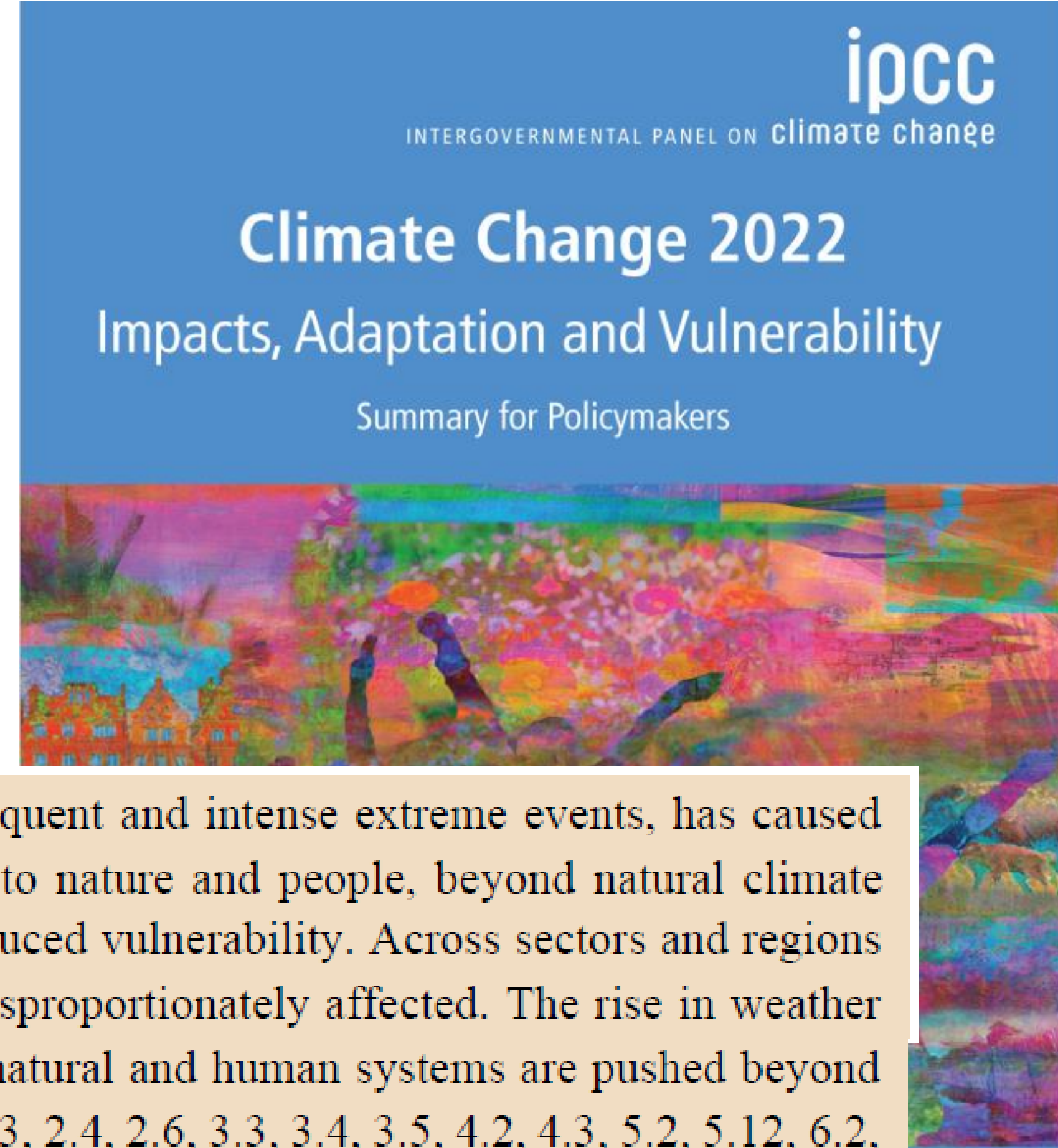
10 years

1	Failure to mitigate climate change
2	Failure of climate-change adaptation
3	Natural disasters and extreme weather events
4	Biodiversity loss and ecosystem collapse
5	Large-scale involuntary migration
6	Natural resource crises
7	Erosion of social cohesion and societal polarization
8	Widespread cybercrime and cyber insecurity
9	Geoeconomic confrontation
10	Large-scale environmental damage incidents

IPCC Major Report

- Assessment Report 6, Working Group II – Adaptation
- Main message – it's bad and already happening

SPM.B.1 Human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts and related losses and damages to nature and people, beyond natural climate variability. Some development and adaptation efforts have reduced vulnerability. Across sectors and regions the most vulnerable people and systems are observed to be disproportionately affected. The rise in weather and climate extremes has led to some irreversible impacts as natural and human systems are pushed beyond their ability to adapt. (*high confidence*) (Figure SPM.2) {1.3, 2.3, 2.4, 2.6, 3.3, 3.4, 3.5, 4.2, 4.3, 5.2, 5.12, 6.2,



WGII

Working Group II contribution to the
Sixth Assessment Report of the
Intergovernmental Panel on Climate Change



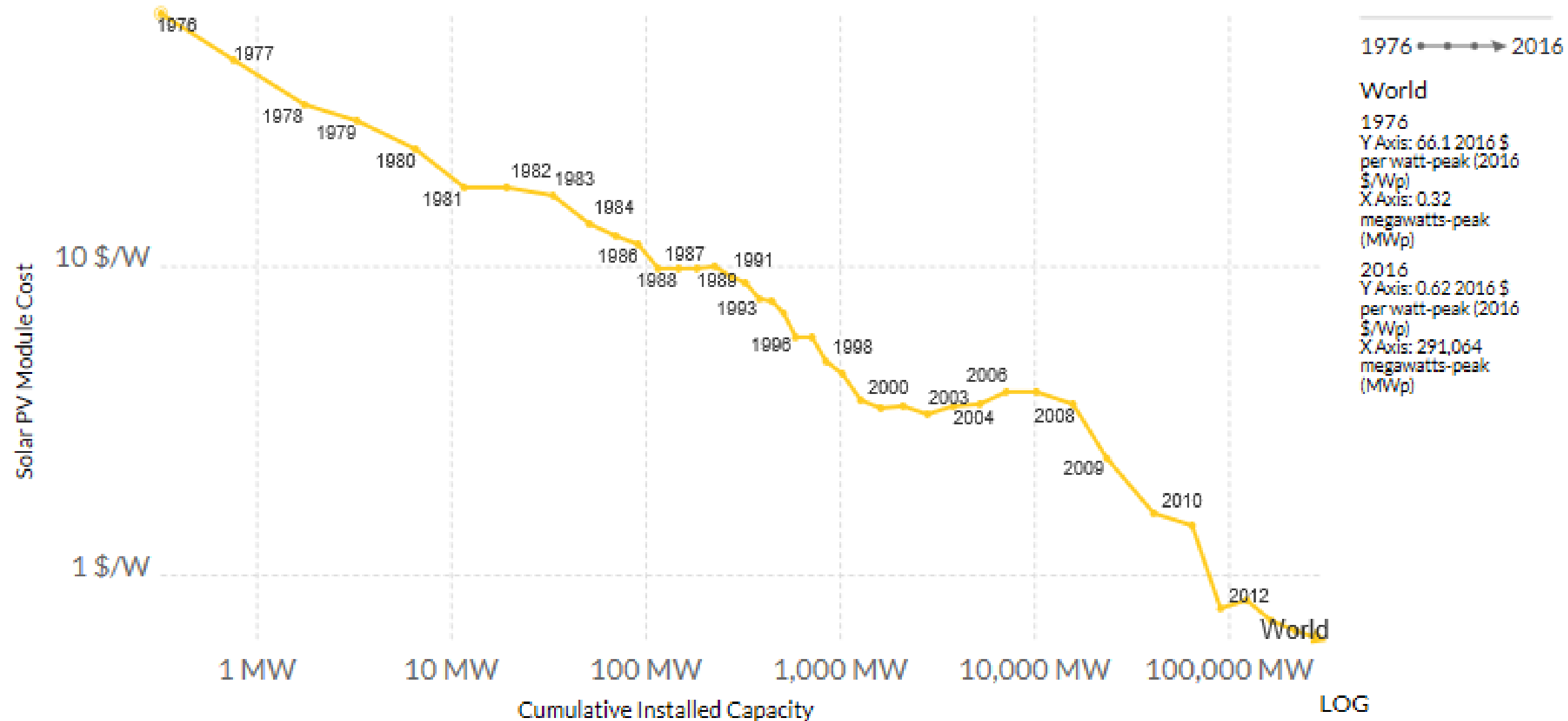
Solar PV Price Development

Solar PV module prices vs. cumulative capacity, 1976 to 2016

Solar photovoltaic (PV) module prices (measured in 2016 US\$ per watt-peak) versus cumulative installed capacity (measured in megawatts-peak, MWp). This represents the 'learning curve' for solar PV and approximates a 22% reduction in price for every doubling of cumulative capacity.

Our World
in Data

LOG



Source: Lafond et al. (2017); IRENA; SolarServer

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GREEN
Marketplace
Sustainable Technology

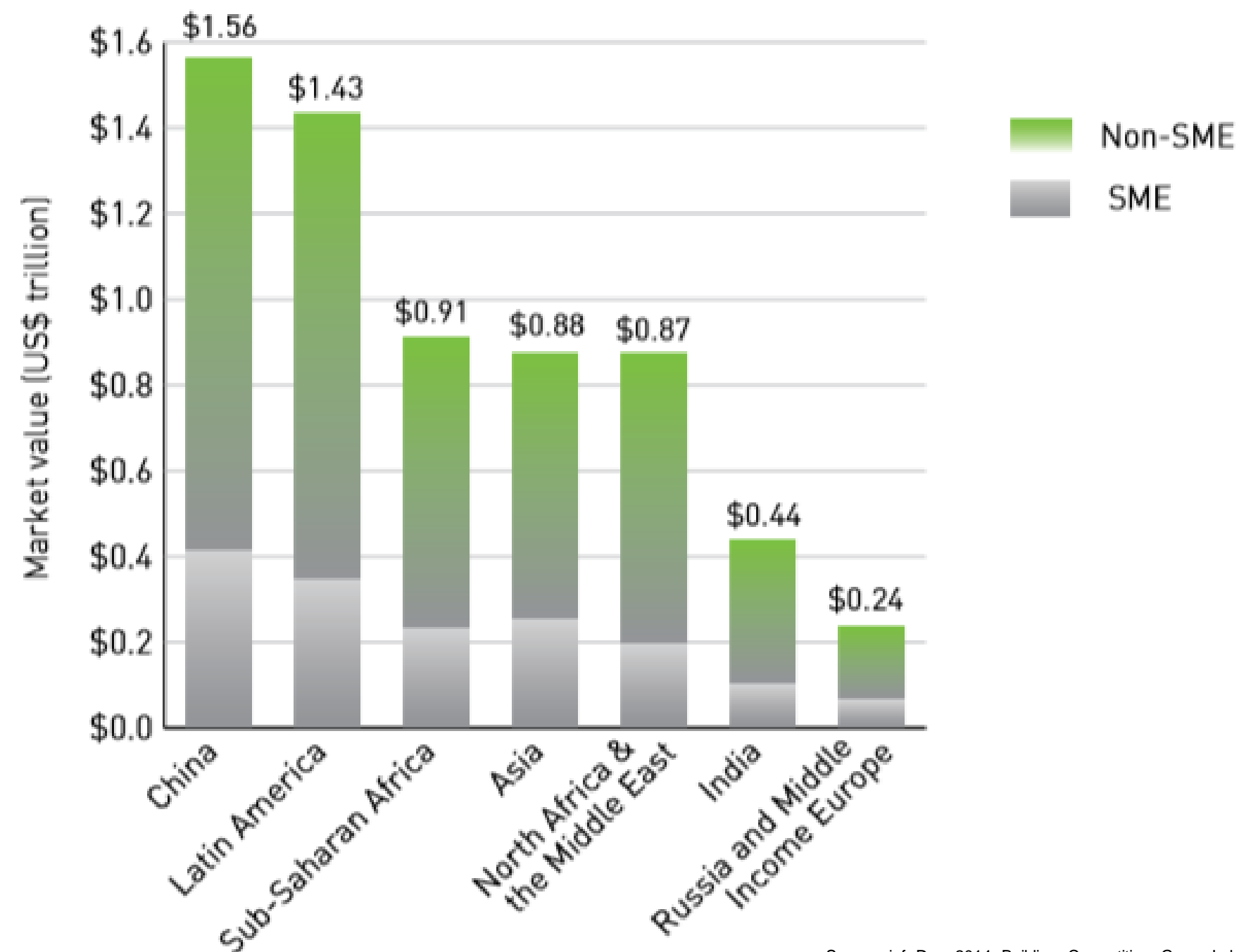
Your Country has made Commitments

- NDC (iNDC) - Nationally Determined Contributions – Paris accord 2015
- NAP - National Adaptation Plans (developing countries)
- Methane pledge – brand new
- SDGs – 2030 Agenda for Sustainable Development (replaced Millennium Dev. Goals)
- CBD - Convention on Biological Diversity
- FAO International Code of Conduct on the Distribution and Use of Pesticides
- International Treaty on Plant Genetic Resources for Food and Agriculture
- International Tropical Timber Agreement (ITTA)
- Minamata Convention on Mercury,
- Montreal Protocol on Substances that Deplete the Ozone Layer
- Stockholm Convention on Persistent Organic Pollutants
- United Nations Convention to Combat Desertification
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes
- + many regional agreements

+ many more...

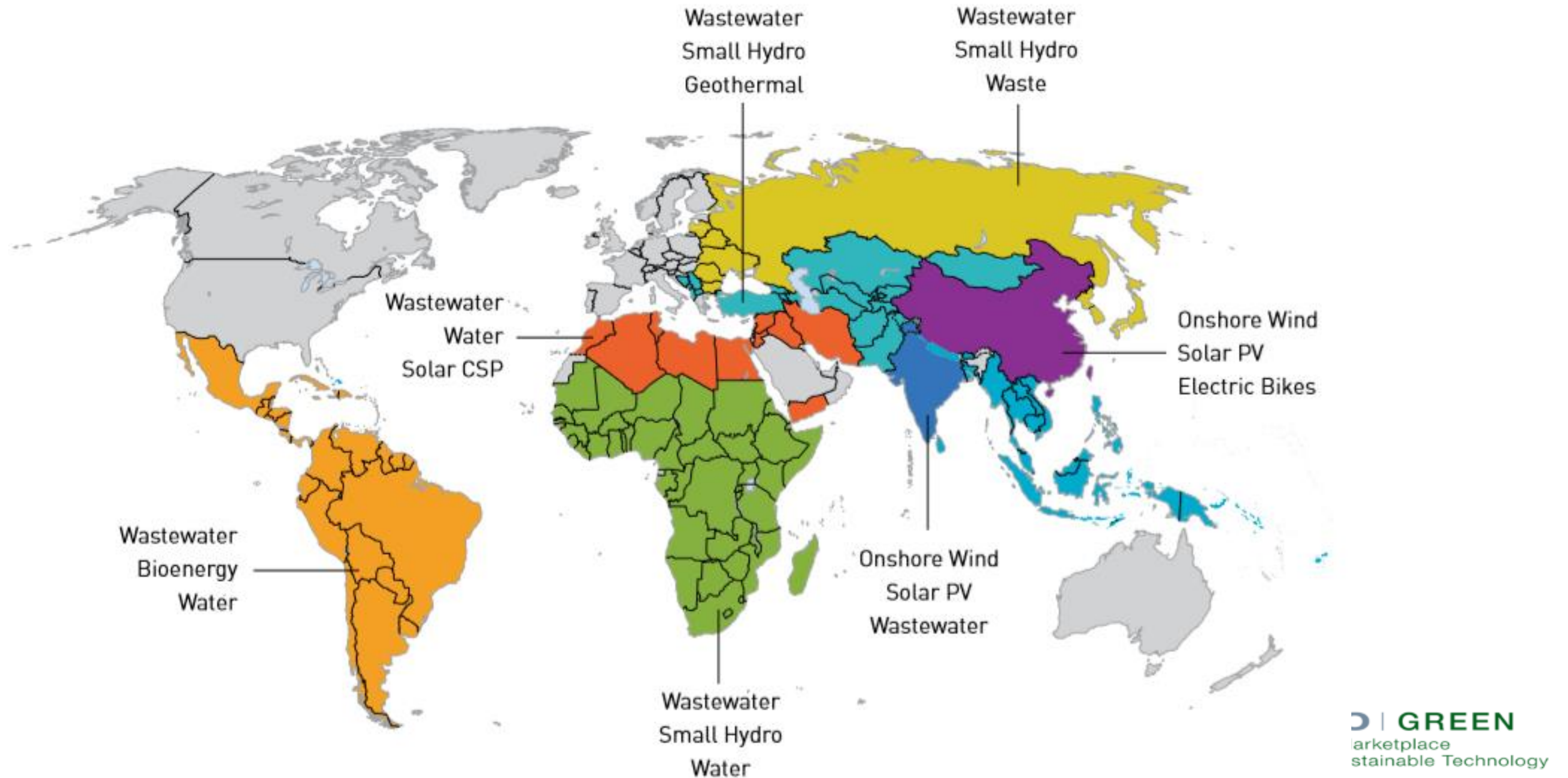
Greentech market regional

FIGURE 2.4. Clean technology market size by region, and the shares of SMEs and non-SME (\$ trillion)

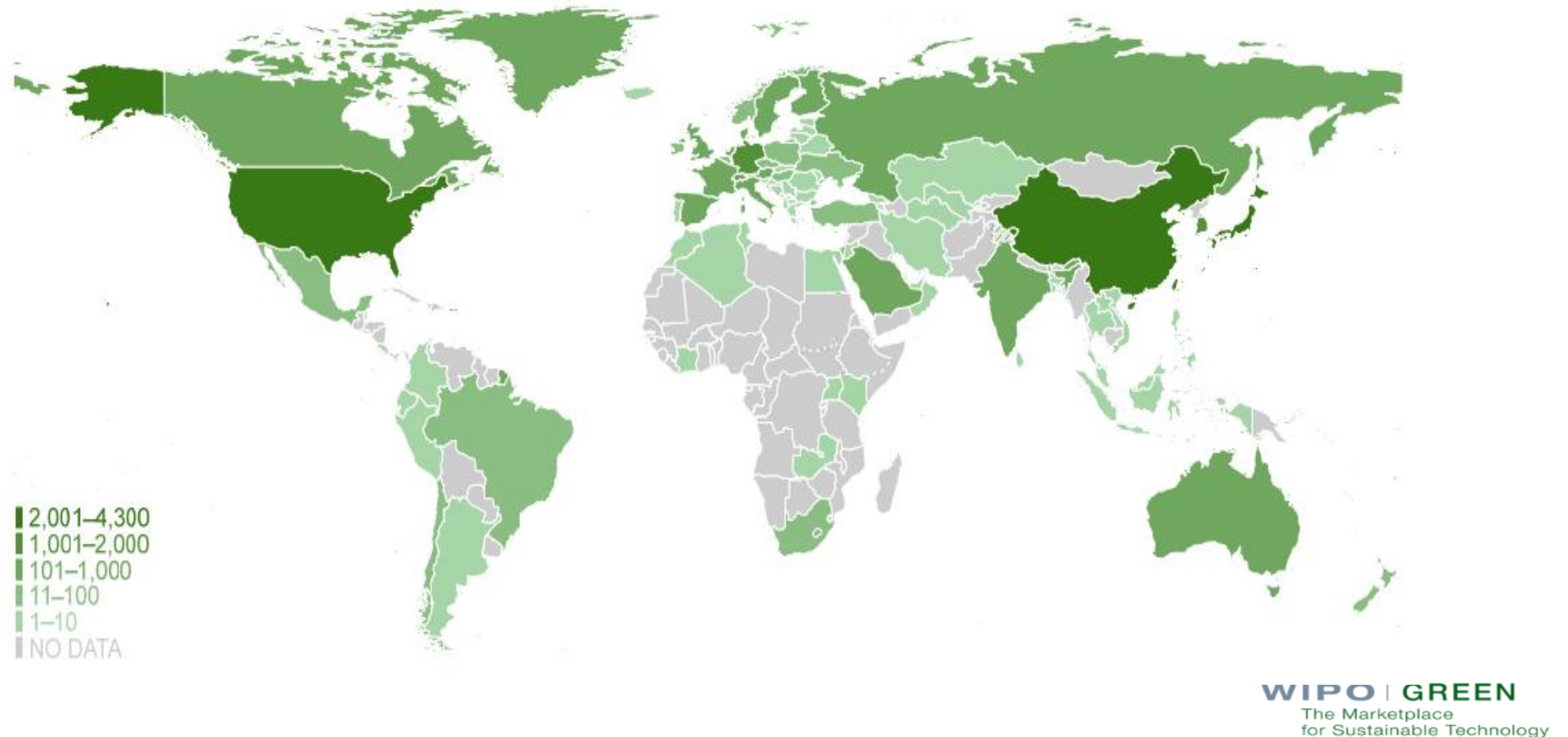


Greentech opportunities global

FIGURE 2.5. Top three regional opportunities for SMEs

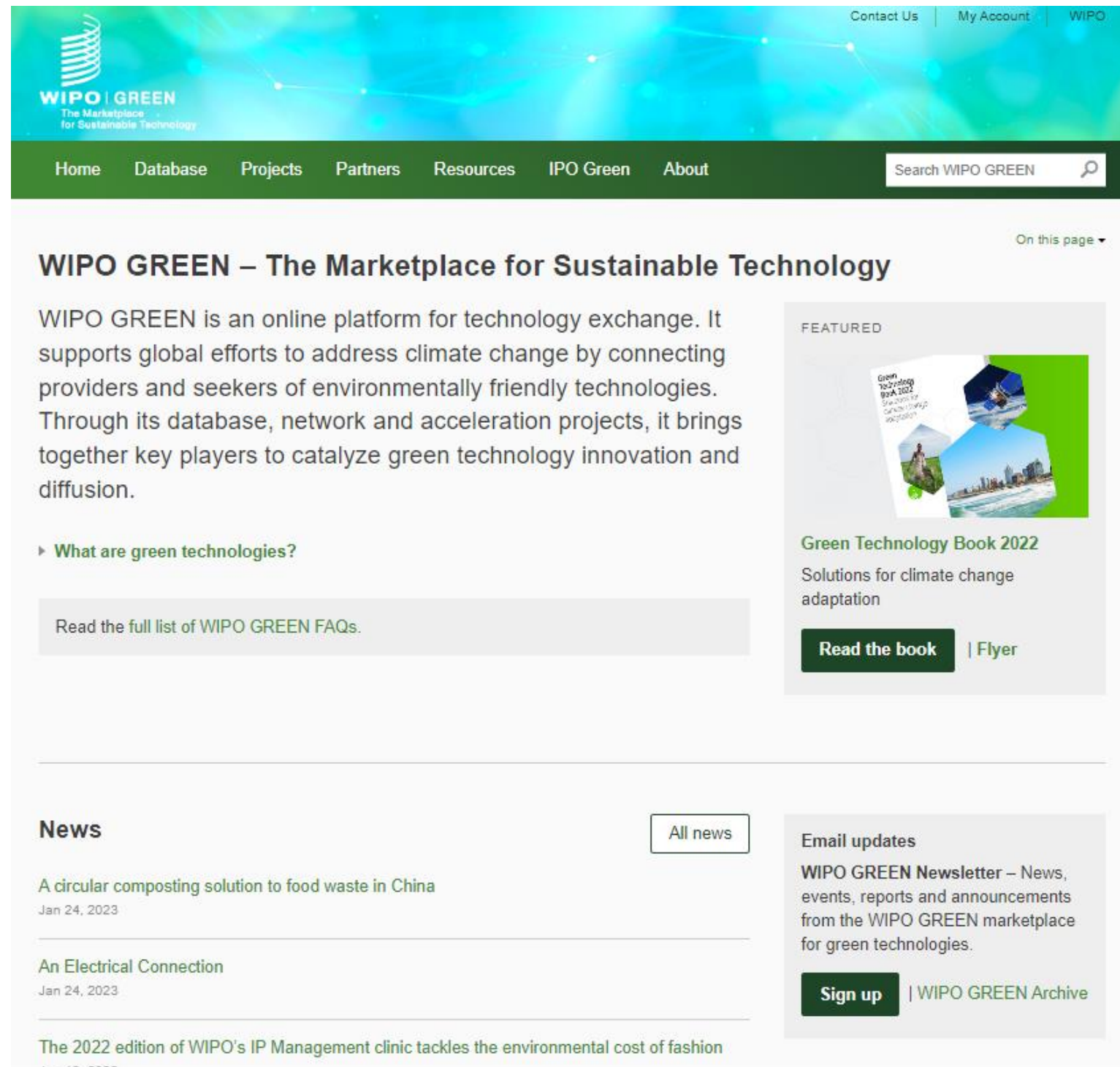


Greentech PCT patent filings 2019



Source: WIPO IP Statistics Database applying the WIPO International Patent Classification (IPC) Green Inventory

WIPO GREEN Platform



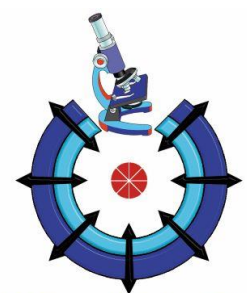
- Green technology matchmaking initiative
- Increase understanding of innovative potential
- Deploy innovation in the field
- WIPO GREEN platform, visible implementation
- WIPO GREEN platform, major visible implementation
- Combines all assets
 - Database
 - Projects
 - Partners
 - Resources / knowledge material

WIPO Green Technology Book

1st edition launched at COP27, 2022

Solutions for Climate Change Adaptation

- ½ million unique visitors since launch mid-Nov. 2022
- 11.500 full report downloads
- Strong developing country interest



أكاديمية البحث العلمي والتكنولوجيا
Academy of Scientific Research
and Technology



CTCN

CLIMATE TECHNOLOGY CENTRE & NETWORK



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The Green Technology Book shows solutions - a digital first publication



WIPO
Publications / Green Technology Book

Green Technology Book 2022 Solutions for climate change adaptation

[Table of contents](#)
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The Green Technology Book takes a look at the state of play of green technologies responding to some of the most critical challenges of climate change.


In the 2022 report, we present the technology trends and practical solutions to combat climate-change impact on agriculture and forestry, the water sector and cities.

How can innovative technologies and the intellectual property system help us adapt to climate change?

The Green Technology Book illustrates how healthy innovation ecosystems are generating a wealth of green technology solutions.

Drawing on a rich database of technologies - whether proven, frontier or still on the horizon - the report offers practical and inspiring examples of green technologies that can help people adapt to the reality of climate change.

Executive summary


We should take encouragement - and inspiration - from the sheer range of transformational tools to help communities adapt to climate change.
Daren Tang
WIPO Director General

Climate-change adaptation, technology and innovation



Green technology solutions to our changing environment



The future of climate-change adaptation



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3 Technology areas: Agriculture & Forestry Water & Coastal Regions, Cities



Chapter 3

Agriculture and forestry

Climate change is leading to multi-billion dollar losses in crop yield and affecting the health of forest ecosystems. Technology can help farmers and forest managers monitor crop and forest health, adapt their practices, use resources more efficiently and manage climate risk.



This chapter presents solutions within agriculture and forestry that respond to climate change impact on food security. It explores proven, frontier and horizon technologies ranging from local and indigenous techniques to urban farming, hydroponics and high-tech digital solutions. Sections take a look at technologies for climate-resilient plants, healthy soils, irrigation, livestock and forest protection. Because the right information at the right time can be vital, the chapter also looks at early warning systems and solutions for monitoring and forecasting climate change impact.

Explore technologies



Climate-resilient plants



Healthy soils



Farming technologies



Irriga



16 Technology sections



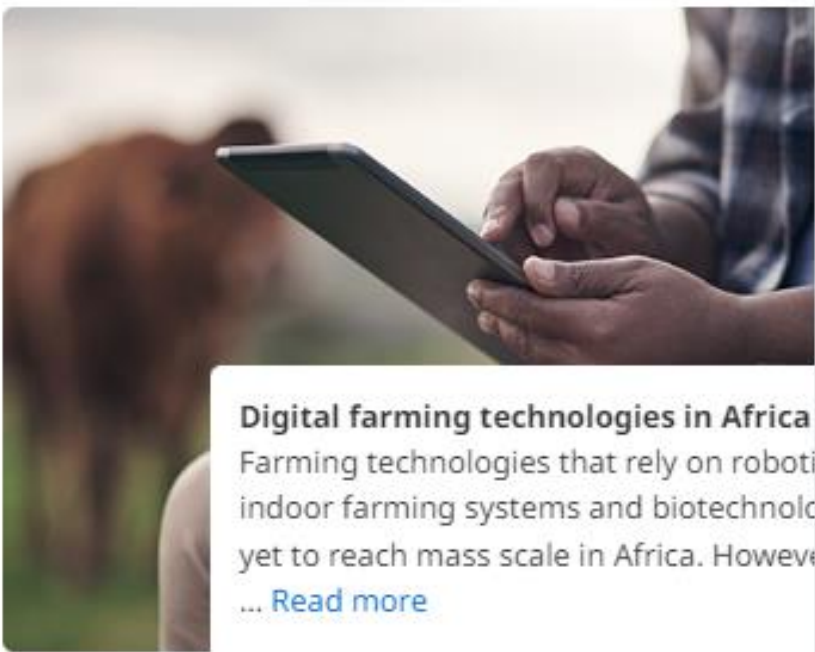
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[Publications](#) / [Green Technology Book](#) / [3. Agriculture and forestry](#) / Farming technologies

Chapter 3. Agriculture and forestry

Farming technologies

Since the Green Revolution of the 1960s, technological change has played a key role in maintaining agricultural productivity and resilience. Faced by an increasingly complex climate landscape, innovations such as vertical farming and precision farming are attracting interest. The world is now in expectation of what is likened to a fourth agricultural revolution.



Proven technologies ▾

WIPO

Examples and Proven, Frontier & Horizon groups




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Floating gardens of Bangladesh

Around a quarter of Bangladesh is flooded for several months of the year. This causes soil salinity and disruption to agriculture. Floating ... [Read more](#)




>



Digital farming technologies in Africa


Farming technologies that rely on robotic indoor farming systems and biotechnology yet to reach mass scale in Africa. However ... [Read more](#)

Proven technologies ^




Precision agriculture through IoT technology and sensors

Libelium provides a wireless sensor network platform whose many uses includes precision agriculture. The technology uses internet of things (IoT) ... [Read more](#)



>



Robotic farming technologies for precision agriculture

Autonomous robotic farming technologies developed by SwarmFarm Robotics enable precision application of nutrient and crop protection inputs. The ... [Read more](#)

Frontier technologies v


Horizon technologies v

UV
84%

1%

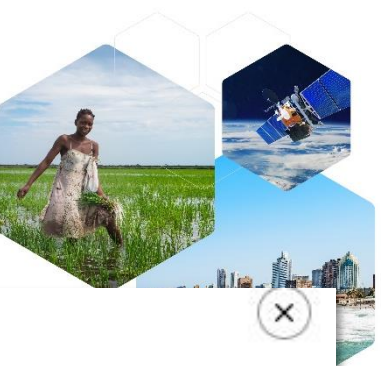
15
MPH

data, such as
can support
and harvesting to



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Individual solutions



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3. Agriculture and forestry / Irrigation / Proven technologies

Smartphone control of alternative energy powered irrigation system

TECH-INNOV NIGER



The founder of the Tech-Innov company, Abdou Maman, has developed a remote-controlled irrigation system adapted to the semi-arid conditions of Niger in West Africa. It introduces the concepts of digital farms and tele-irrigation in support of agricultural development in the country. The company provides farmers with tools enabling them to move away from manual watering and reduce water waste. The system uses mobile devices so farmers can manage irrigation remotely and efficiently. It also integrates hydraulic and meteorological data so farmers can optimize water usage.

- Contracting type: For sale
- Technology level: Medium
- Country of origin: Niger
- Availability: Niger

WIPO



4. Water and coastal regions / Marine ecosystems / Proven technologies

Artificial reefs

Reefmaker



Reefmaker's patented process for artificial reefs uses Florida limestone. This soft rock matches the pH levels of the ecosystems targeted and provides a good substrate for marine life, allowing it to grow naturally. The limestone is attached to a concrete structure in a sloping design to ensure durability while increasing surface area for reef. A special deployment vessel equipped with cranes has been designed for accurate placement of the artificial reefs out to sea. In addition to coral reef restoration, the limestone reefs can also be used for oyster reef restoration, wave attenuation and erosion control. Structures can be designed to fit along the length of permanently fitted vertical poles attached to the sea bed. The aim is to keep the concrete proud of the marine floor and firmly retain the artificial reefs during extreme events like hurricanes. More than 50,000 reefs have been deployed along the US coast.

- Contracting type: For sale
- Technology level: Medium
- Country of origin: United States
- Availability: United States

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5. Cities / Infrastructure and services / Proven technologies

Decentralized water treatment and storage systems

Fluence Corporation



Resiliency in water infrastructure can be enhanced through decentralized water treatment and storage systems. Treating water at point of use can make water treatment more fit for purpose and effective compared to treating all water to a potable standard. Also decentralized water storage could be used for river flow management, irrigation or in emergency situations. Fluence is a company that provides modular, decentralized water and wastewater treatment solutions for remote locations. Water treatment systems are built into steel shipping containers. Transportation and site preparation is easy and installation quick. The technology has been developed for use in resorts and recreation sites. But similar solutions could potentially be used in emergency situations. For example, storms and hurricanes where central water supplies may be damaged or contaminated.

- Contracting type: For sale
- Technology level: Medium
- Country of origin: United States
- Availability: Worldwide

Direct link to the WIPO GREEN Database





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Smartphone control of alternative energy powered irrigation system

FARMING & FORESTRY > IRRIGATION



Description Benefits Other Information

[Log in for access to additional information and attachments](#)

ID	147519
Owner	TECH-INNOV NIGER
Uploaded by	WIPO GREEN Admin
Type	Technology
Source	User uploads
Published	Oct 13, 2022
Updated	Oct 29, 2022

Remote-controlled irrigation system to manage irrigation remotely and efficiently.

The founder of the Tech-Innov company, Abdou Maman, has developed a remote-controlled irrigation system adapted to the semi-arid conditions of Niger in West Africa. It introduces the concepts of digital farms and tele-irrigation in support of agricultural development in the country. The company provides farmers with tools enabling them to move away from manual watering and reduce water waste. The system uses mobile devices so farmers can manage irrigation remotely and efficiently. It also integrates hydraulic and meteorological data so farmers can optimize water usage.



EMAIL OWNER



VISIT WEBSITE

TECH-INNOV NIGER

Green Technology Book

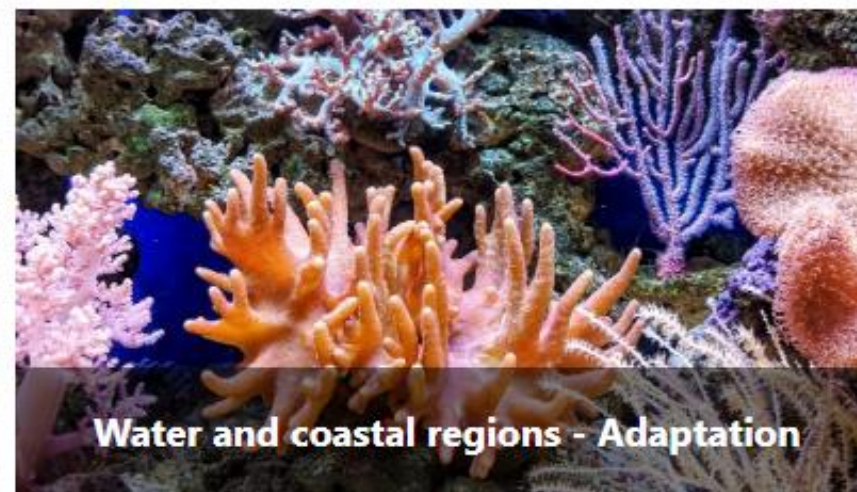
WIPO GREEN Database Collection



Green Technology Book - Climate Change Adaptation



Agriculture & forestry - Adaptation



Water and coastal regions - Adaptation



Cities - Adaptation

Green Technology Book - Climate Change Mitigation - next edition for release in 2023



Agriculture & Forestry - Mitigation



Industry - Mitigation



Cities - Mitigation

Database collection – livestock section



Livestock

Despite demand expected to double by 2050, livestock is expected to decline globally. Technologies and climate adaptation solutions often relate to developing resilient feed crop and livestock breeds, pasture rehabilitation and optimizing feed and production systems. This section also presents advances in heat stress detection and management, and digital technologies for livestock monitoring and precision ranching.

PROVEN

FRONTIER

HORIZON

Livestock misting and fogging systems

Truemist

Feed additive and monitoring app for heat stress m...

Thermo

Infrared thermography for heat stress detection

Teledyne FLIR

Conservation of climate-resilient indigenous breed...

AgTech Inc.

Hydrogreen vertical greenhouse livestock feed farm...

CubicFarm® Systems

Croc Trough Pumps

Croc Trough

Improved forage through Chinese juncao technology

Chinese National Engineering Research Ce...

Smart tags for livestock monitoring

Ceres Tag

Livestock control with virtual fencing

Vence

Improved forage through Chinese Juncao technology

National Engineering Research Center for...

See in Database...

Conclusions drawn from the work

- Adaptation solutions available, but less accessible
- Innovation mostly in a few developed countries and transfer low

“Adaptation technologies from developing countries seem to be far less visible. This may be because they are simpler, less commercially oriented and developed with a local context in mind. However, such solutions may be exactly what is needed in many other places. Therefore there may be a need for a stronger exposure of adaptation technologies from developing countries.”



WIPO GREEN Database a central tool

- Free UN-based public database
- Major repository of innovative green technologies and needs
- Automatic matchmaking
- 129.000 articles
- 3900 user uploads
- Simple registration and upload
- No fees
- Integrated experts database
- No fees
- Search “WIPO GREEN” and go to the database

The screenshot displays the WIPO GREEN Database website. At the top, a green navigation bar contains links for Projects, Partners, Resources, IPO Green, About us, and Register. A search bar is prominently featured with a 'Simple' dropdown, a magnifying glass icon, and a 'Search' button. To the right of the search bar is a 'Full Text Search' button. Below the navigation bar, a green 'Register' button is visible. The main heading reads 'WIPO GREEN Database of Innovative Technologies and Needs'. A descriptive paragraph follows, explaining the database's purpose and features. Below this, a row of seven category tiles is shown: ENERGY, WATER, FARMING FORESTRY, POLLUTION WASTE, TRANSPORTATION, PRODUCTS MATERIALS PROCESSES, and BUILDING CONSTRUCTION. Each tile has a corresponding icon. The 'Collections' section below lists five featured collections: Green Technology Book, Feeding 9bn, POME Indonesia, LAC Climate Smart Agriculture, and China Cities, each with a brief description and a representative image. The 'Experts' section at the bottom states that the database contains profiles of relevant experts. On the right side of the page, there are two vertical sections: 'LATEST ENTRIES' and 'FEATURED ARTICLES'. The 'LATEST ENTRIES' section lists four recent updates with dates and brief descriptions, each accompanied by a small image. The 'FEATURED ARTICLES' section lists three articles with dates and titles, also accompanied by images. A 'More...' button is located between these two sections.

Simple keyword search

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☐ AUTM (201)

Type

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☐ Need (41)

☐ Knowledge material (3)

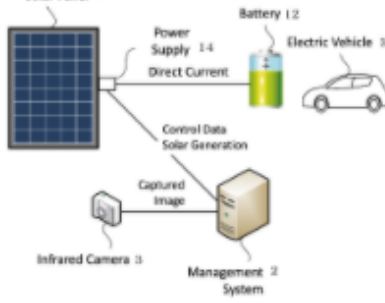
Collections

☐ Transportation (1894)

☐ Energy (15835)

☐ Water (727)

ENERGY > SOLAR



Kanazawa Institute of Technology: Solar power generation system, solar power generation management method, and program

The solar power generation system has a power generation prediction unit that predicts the amount of power generated by the solar panel based on weather information for the region including the installation site of the solar panel, a power generation acquisition unit that acquires the amount of power generated by the solar panel, and a failure possibility diagnosis unit that determines the possibility of failure of the solar panel based on the amount of power generated predicted by the power gen ...

Owner

Kanazawa Institute of Technology

Uploaded by

SUWA YORIMASA

Type

Technology

Source

User uploads

Published

Mar 22, 2021

Readiness level (TRL)

Proof of concept (TRL 3-4)

Developed in

Japan

ID 20583

ENERGY > SOLAR

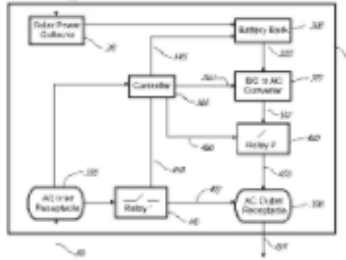


FIG. 4

INTEGRATED SOLAR PANEL

A solar panel (400) is disclosed that can be daisy-chained with other solar panels (100a- n). The solar panel (400) automatically generates output alternative current (AC) power (195) that is in parallel with input AC power (112) coming into the solar panel (400) when the solar panel (400) senses the input AC power (112) so that the solar panel (400) operates as a slave in this state. The solar panel (400) automatically generates standalone AC output power (195) when the solar panel (400) fails ...

Owner

SUNCULTURE SOLAR INC.

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WIPO GREEN Import

Type

Technology

Source

Patentscope ⚠

Published

Sep 18, 2014

ID 37233

ENERGY > SOLAR

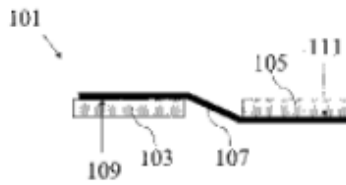


FIG. 1A

INTERCONNECTED SOLAR CELLS

Interconnected solar cells include a first solar cell and a second solar cell connected by a wire with a coefficient of thermal expansion matched to the first solar cell's coefficient of thermal expansion.

Owner

EVERGREEN SOLAR, INC.

Uploaded by

WIPO GREEN Import

Type

Technology

Source

Patentscope ⚠

Published

Mar 6, 2008

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☐ Need (13)

☐ Knowledge material (2)

Collections

☐ Transportation (24036)

☐ Energy (53586)

1/16

<< < 1 of 427 > >>

10 ▾

4263 results

Sort by Published date X ▾

📄

ENERGY > BIOMASS/BIOENERGY | ENERGY > WASTE TO ENERGY



Hydrogen Sulfide Bio-scrubber
Organics designs and manufactures vertical and horizontal bio scrubbers that can reduce the hydrogen sulfide down to 100 ppm and counter the threat of corrosion related to the production of H2S in landfilled waste or anaerobic digestion systems. The main advantage of the system is that, in most circumstances, no additional costs for chemical additions are incurred. The bacteria involved in the process are ubiquitous and, as long as correct environmental conditions are maintained, the bacteria wi

OwnerPT Organics Bali

Uploaded byade sri rahayu

TypeTechnology

SourceUser uploads

PublishedSep 6, 2021

Readiness level (TRL)Scaling up (TRL 9)

Developed inIndonesia

ID 138648

ENERGY > BIOMASS/BIOENERGY | ENERGY > WASTE TO ENERGY



Biogas Upgrading & Distribution (CBG)
Safe S.p.A. provides turnkey solutions for biogas upgrading & distribution at low, medium, and high pressures for either grid injection, bulk transportation, or NGV filling. Safe S.p.A. is the preferred technology partner for many international customers who seek trouble-free and feasible development of their biogas to biomethane (CBG) projects. Thanks to our global partners' network, we are always near to our customers for the best sales and after-sales support.

OwnerSAFE S.p.A.

Uploaded byade sri rahayu

TypeTechnology

SourceUser uploads

PublishedSep 6, 2021

Readiness level (TRL)Scaling up (TRL 9)

Developed inItaly

ID 138647

- Thumbnails, sorting, book marks

Full-text AI-Assisted Search

Full text

1

2

3

4

Introduction

Select query source

Query text

Keywords

Input type

User input

▼

Alternative chemicals/ raw materials/ formulations for detergent manufacturing

It is a well known fact that detergents cause pollution due to the chemical substances that are used to manufacture them from dyes, preservatives such as formalin and other constituents. As a company seeking to be labelled as a green chemical company we are looking for alternative substitutes to make our detergents and products more green including any formulation assistance that would increase our green footprint.

< Previous

Full text

1

2

3

4

Introduction

Select query source

Query text

Keywords

As phrases

☒

Select the keywords that will be used for the query:

☒ company

☒ green chemical company

☒ our green footprint

☒ detergents

☒ alternative substitutes

☒ pollution

< Previous

✕ Clear

Apply 🔍

- Input long text, Document, Webpage
- AI extracts keywords
- Search database
- Adjust

Patent2Solution

AI-assisted search for commercial applications of a patent

CONTROLLING THE SYNTHESIS GAS COMPOSITION

POLLUTION & WASTE > RECYCLING & REUSE

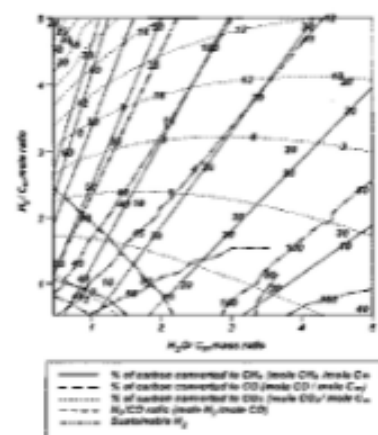


Fig. 7

Description Details Other

An improved, economical alternative to the feedstock for the SMR by removing the reforming, condensation removal temperature above the boiling point embodiment, a method is provided by adjusting the hydrogen feed and SMR.



Patent2Solution

ID 52432

Applicant THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

Uploaded by WIPO GREEN

Patent2Solution

Patent2Solution is a unique search function providing links to commercial sites which may be related to the patent chosen. It appears but due to the variety and complexity of patents, it may not always produce useful results. The emphasis is on providing a commercial likelihood of finding an exact match decreases.

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Results related to [CONTROLLING THE SYNTHESIS GAS COMPOSITION OF A STEAM](#)

Editable keywords used:

CONTROLLING SYNTHESIS GAS COMPOSITION STEAM petroleum engines resources

(54) Total results

Page 1 of 6 << < 1 2 3 4 5

regents.universityofcalifornia.edu >

[UC Regents](#)

Board of **Regents** ... On August 20, Governor Newsom appointed Jose Hernandez as a **UC Regent**. **Regent** Hernandez is the president of the University of California.

[en.wikipedia.org](https://en.wikipedia.org/wiki/Regents_of_the_University_of_California) > [wiki](#) > [Regents_of_the_University_of_California](#)

[Regents of the University of California - Wikipedia](#)

Regent Richard C. Blum, financier and husband to Sen. Dianne Feinstein, currently serves on the board of **regents'** Investment Management Company.

[regents.universityofcalifornia.edu](https://regents.universityofcalifornia.edu/about/index.html) > [about](#) > [index.html](#)

[About the Regents | Board of Regents](#)

The **University** is governed by **The Regents**, which under Article IX, Section 9 of the **California** Constitution has "full powers of government."

[www.universityofcalifornia.edu](https://www.universityofcalifornia.edu/subject/term/uc-regents) > [subject](#) > [term](#) > [uc-regents](#)

[UC regents | University of California](#)

The University of California Board of Regents has appointed Michael V. Drake, M.D., as the 21st president of UCLand.

WIPO GREEN Acceleration projects



WIPO GREEN Acceleration Projects

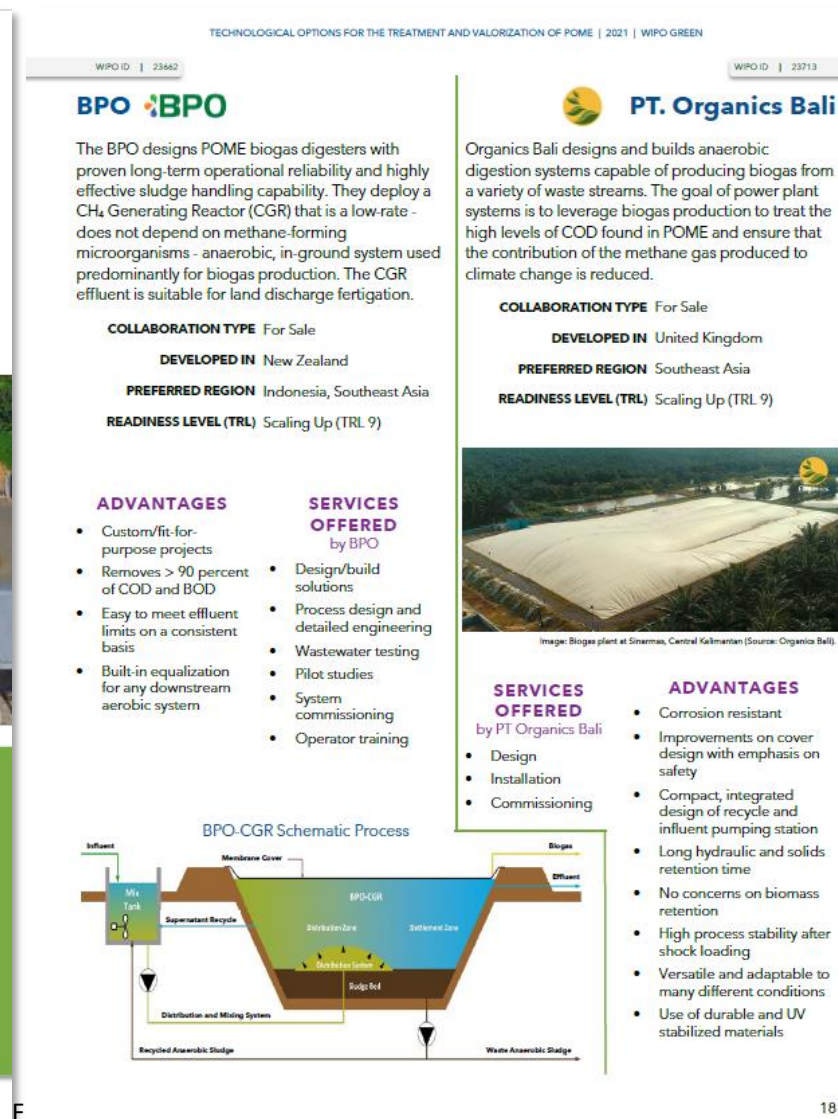
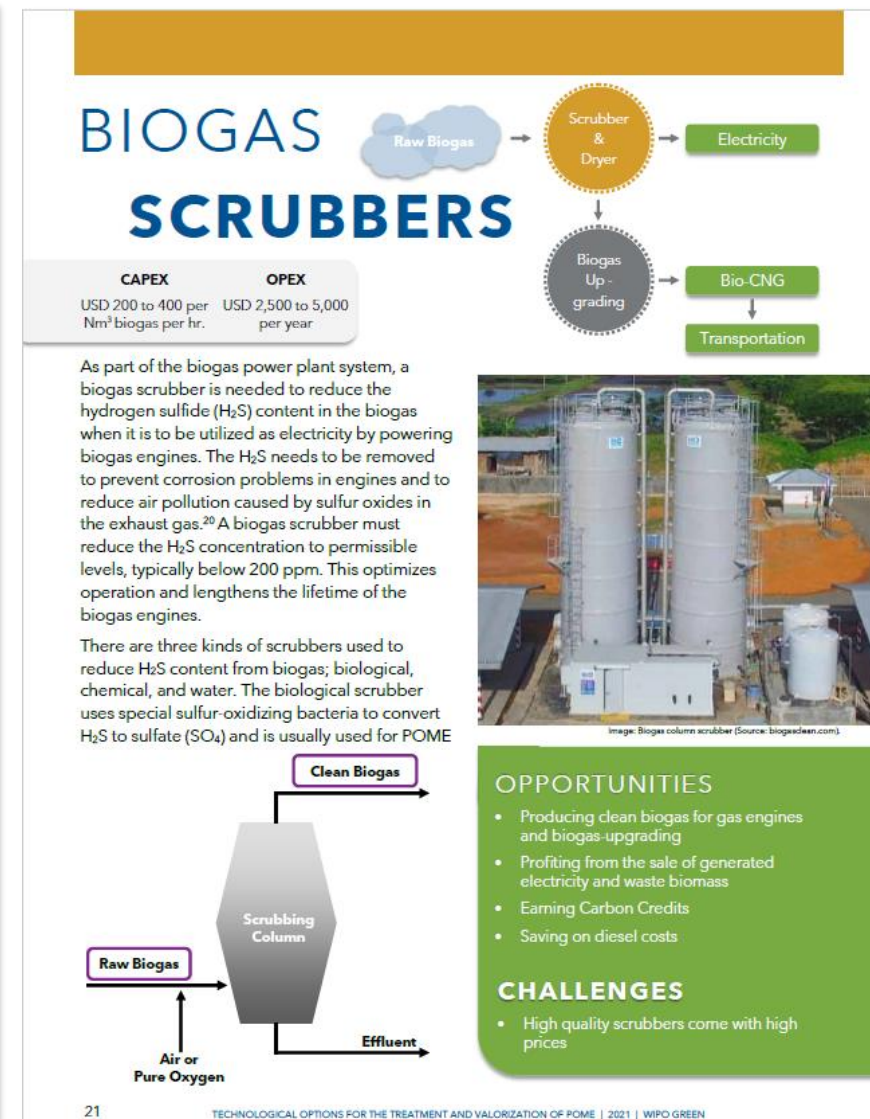
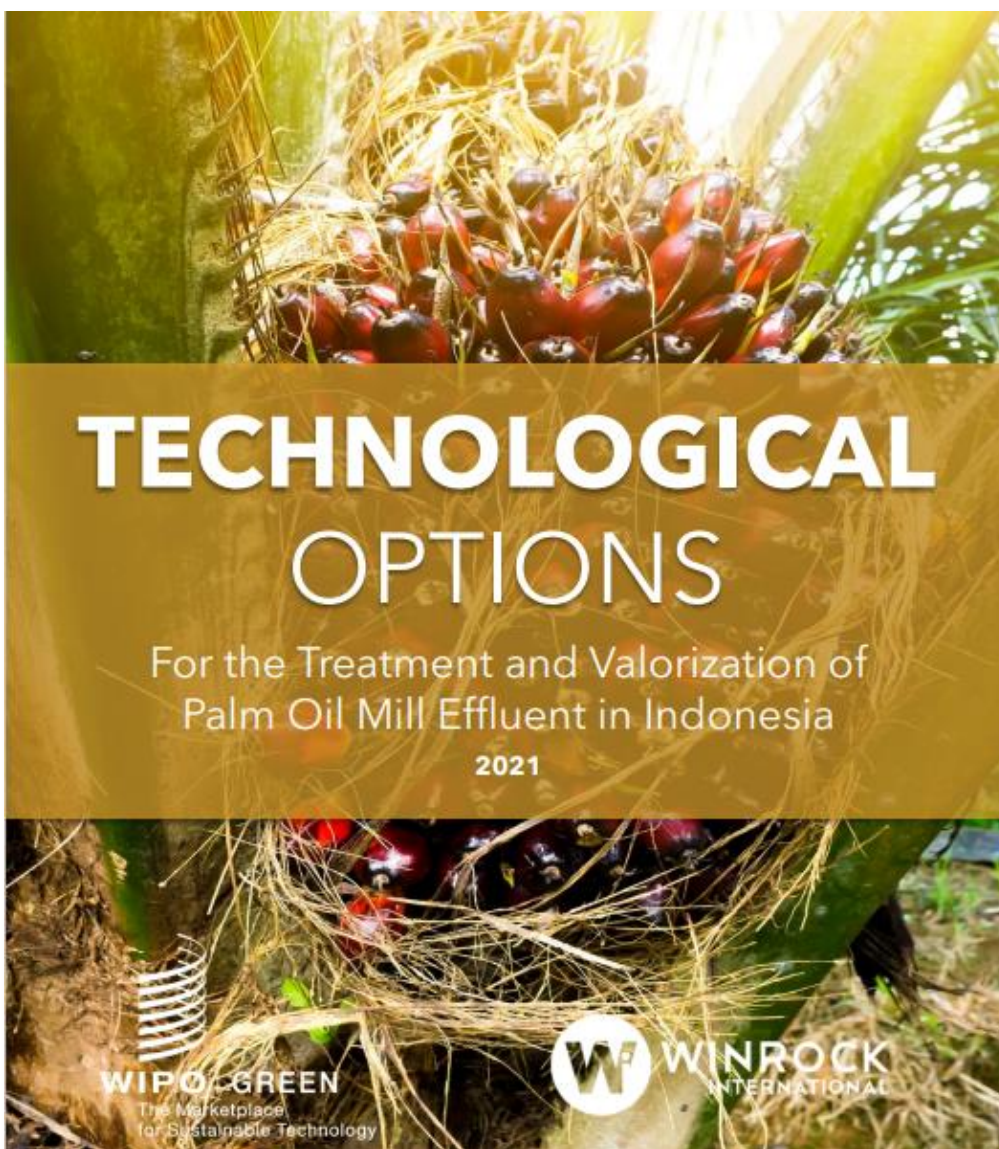
Acceleration Projects work with partners to explore local environmental challenges and green opportunities

- Active and focused matchmaking
- Identify needs and propose solutions
- Specific subject and location
- Work through local consultants
- Act as technology agent for need owners
- Matchmaking events as relevant
- Database is a central tool

Acceleration Project Indonesia

- Technological Options for Treatment & Valorization of POME in Indonesia
- Methane capture, biogas, solid separation for fertilizer, biochar, biodiesel, biohydrogen etc.
- Launched early March 2021. Winrock International implementing partner
- 19 needs & 24 technologies
- Solutions oriented technology catalogue

Palm Oil Mill Effluent - POME



LAC Climate Smart Agriculture project

- Argentina, Chile, Brazil, Peru
- Identify needs and propose solutions
- Sustainable agriculture, forestry, soil-recarbonization, zero-till, wine sector
- Launched 2019, created strong network of partners
- More than 200 stakeholders contacted, 185 uploads to database, 70 needs and 115 technologies
- Second & third phase with funding from the Government of Japan



Catalogues – widespread inspiration for others

GREEN TECHNOLOGIES

Dealing with the negative effects of climate change in the Chilean wine industry

Annex-1: Identified needs and seekers

In this section of annexes, the identification of needs expressed by each vineyard that is part of this catalog is presented.

Optimization of water resources

Loncomilla Winery Cooperative

The cooperative works based on dry land vineyards, which only receive water from rainfall, and where the rains have drastically decreased. This climatic effect impacts the profitability of the vineyards, affecting the production of grapes per hectare by 30-40%. The scarce existing water resource needs to be optimized.



Image: Wineries and offices of Loncomilla wine cooperative.
Source: Loncomilla Winery Cooperative

Alternatives to handling phytosanitary product containers that impact the environment

OAstaburuaga Family Wines

The law in Chile obliges to carry out a triple washing of the phytosanitary product containers because they can have a great impact on the environment and at the same time present an impact on public health because they are considered hazardous waste.



Image: O. Astaburuaga Vineyards.
Source: O. Astaburuaga Family Wines

This risk is reduced with the Triple Wash procedure, however, this action is very cumbersome, large amounts of water and many man-hours are used to carry out this work, as well as a considerable energy expenditure when transferring them to the collection places.

For this reason the containers are not being recycled enough, and a friendlier alternative is needed to achieve this end and contribute to the development of a productive and sustainable viticulture.

Lack of water and decrease in cold hours

OAstaburuaga Family Wines

Climate change has led to countless events that have altered the ecosystem but also the behavior of plants. Thus, the lack of rain decrease in cold hours, increasingly, affect the production and grape, which considerably reduces the yields of the vineyards.



Image: O. Astaburuaga Vineyards.
Source: O. Astaburuaga Family Wines

Reuse of winemaking process waste

OAstaburuaga Family Wines

Different types of waste are generated in the winemaking process. Some are reused, as is the case with riles, and grape seeds, which are separated and used only for compost. However, its degree of reuse is low and there are also other wastes that could be given a higher value.



Image: O. Astaburuaga Family Wines Wineries.
Source: O. Astaburuaga Family Wines

Nanoenvi® AG

envira
138862

Nanoenvi® AG is a device designed for remote data capture and transmission in precision agriculture applications. The Nanoenvi® AG devices allow the creation of wireless sensor networks to monitor, predict and optimize the management of agricultural resources in real-time due to their cloud connection. These networks bring greater control to farms by managing to control diseases, regulating the application of plant protection products, making efficient use of water in irrigation, and, in general, optimizing resources. Nanoenvi® AG is compatible with various types of sensors, such as: meteorological (temperature, humidity, pressure, rain, solar radiation), gases (for example, H₂S, CO, CO₂, SO₂), or agricultural (leaf moisture, soil pH, dendrometers, among others). This allows measuring a wide range of variables of interest in agriculture. Through this wireless sensor device connected to the cloud, the person in charge of the farm knows its status in real-time from his computer, mobile phone, or tablet, so he can make immediate decisions to improve the productivity of his crops and, therefore, its profitability. The device works with an energy harvesting system (with solar panel) and is installed both outdoors and indoors.

DEVELOPED IN: Spain
PREFERRED REGIONS: Canada, Mexico, Honduras, Panama, Chile, Spain, France, India, Pakistan, Saudi Arabia
<https://enviraio.es/nanoenvi-ag/>

SERVICES OFFERED:

- Development of Smart Agro solutions to monitor innovative agricultural and livestock farms, which incorporate all types of sensors to suit the needs of each customer.

BENEFITS:

- Improve the quality of wines through predictive models, utilizing digital technologies that allow to increase productivity, reduce risks and reduce costs by improving crop prediction, yield, and irrigation prediction and management.
- Through the use of Nanoenvi® AG and the information it provides, it is possible to:
 - Improvement of soil quality and fertility.
 - Pest control.
 - Better management of resources.
 - Crop quality optimization.
 - Increased productivity.
 - Risk reduction.

NetBeat™

NETAFIM
138861

NetBeat™ is Digital Farming's solution to enable automated irrigation, fertigation, and crop protection. It allows easy monitoring, analysis, and irrigation control from anywhere. NetBeat™ permanently receives data coming from the field and weather stations (temperature, humidity, radiation, and wind, among others). There is a better understanding of what is happening, to make more precise use of inputs and increase output.

It has Dynamic Crop Models™ that generate customized daily irrigation strategies for crops, to make the right decisions. The interface of NetBeat™ was developed taking into account real farmers. The NetBeat software™ gives farmers the ability to manage their daily activities from their smartphones while giving them access to a super-computing brain with multiple benefits.

DEVELOPED IN: Israel
PREFERRED REGIONS: Global
<https://www.netafim.co/digital-farming/netbeat>

SERVICES OFFERED:

- Satellite services are as follows:
 - ADNet: Agronomy at the service of irrigation design
 - IDNet: Irrigation diagnostic
 - BIONet: Monitor a crop for a defined period
 - GEONet: Asses the agronomic potential of a future farm
 - Technical assistance

BENEFITS:

- NetBeat™, facilitates the saving of water in the fields, allows to irrigate them efficiently, and also increases the productivity and the quality of the plants. The system delivers smart recommendations that help farmers save on productive costs and achieve higher yields.

NetBeat™ allows:

- Get accurate irrigation recommendations from Dynamic Crop Models™

- Obtain information in real-time from multiple sources: field sensors, external data sources (weather, satellite images).

- Protect data with high information privacy standards. NetBeat™ is compliant with the General Data Protection Regulation (GDPR).
- Identify and alert anomalies found.
- Provide supercomputing capacity for analysis and reporting.
- Smart irrigation for all, because of its advanced modular solution suitable for use from advanced corporate farms to small producers.



Image: How NetBeat Works.
Source: Netafim, <https://www.netafim.co/digital-farming/netbeat>


China Cities Acceleration Project

- Preparation and testing phase 2021 with initial focus on Beijing
- Target environmental issues in large cities
- 10 needs and 32 technologies in database
- Development of “service package” with partners to facilitate deployment of green technologies
- Further upscaling in 2023 onwards



An innovative kitchen waste treatment technology

POLLUTION & WASTE > WASTE DISPOSAL



Description	Details	Other Information	Support
<p>Our company is a business hotel invested by People's Medical Publishing House and managed by Tianlun International Hotel Group. The company's customers mainly face the whole country, and the core business including conference venue services, accommodation and catering. Our company has all kinds of guest rooms and independent international convention and exhibition center, with a total floor area of 8,000 square meters. The restaurants include western restaurants and Chinese restaurants, which could produce a large amount of kitchen waste. With the implementation of Beijing's garbage classification and non-resident kitchen waste metering and charging policies, it is imperative to recycle kitchen waste. Our company hopes to build a recycling station for kitchen waste in the hotel to save the cost of reducing kitchen waste, recycle and reduce treatment of kitchen waste. So as to help the classified treatment of waste and realization of the national policy of "carbon peak and carbon neutrality".</p> <p>Our company is looking for on-site high-temperature aerobic restaurant kitchen waste resource treatment equipment, which needs to be able to realize harmless, resource and reduction treatment of restaurant kitchen waste from the source. Restaurant -kitchen-garbage treatment equipment should be technically reliable and discharge up to standard, with an overall reduction rate of more than 90%. Product appearance is granular or powdery, uniform, no odor, no mechanical impurities. The output of all equipment and pollutant discharge, sanitation, etc. should meet national standards and regulations, and there must be perfect facilities and equipment to eliminate the odor, noise and other secondary pollution problems generated by garbage disposal. The equipment should occupy a small area and is convenient for installation and maintenance.</p>			
ID	138848		
Owner	Lake View Hotel Beijing		
Uploaded by	Bluetech Clean Air Alliance		
Type	Need		
Need by	Dec 29, 2025		

IPO Green

- Intellectual Property Offices can contribute to green economy transition
- IPO Green is an initiative to support them in this
- 13 concept notes developed
- Webinar series on-going



Accelerated Patent Prosecution

Arabic | French



Provision of Green Data and Analysis by the IP Office

Arabic | French



Matchmaking and Business Rounds

Arabic | French



Regional Cooperation on Green IP Matters

Arabic | French



Joint Initiatives with WIPO GREEN

Arabic | French



Classification Systems for Green Technology Solutions

Arabic | French



Training Government Officials about Green Innovation

Arabic | French



Green Patent Prosecution Highways

Arabic | French



Financial Support for Green Patent Applications

Arabic | French



IP Awareness Raising Activities

Arabic | French



Upcycling Program for Counterfeit Goods

Arabic | French



IP Services for Entrepreneurs

Arabic | French



Awards for Green Technology Innovation

Arabic | French

Thank you !

wipo.int/green



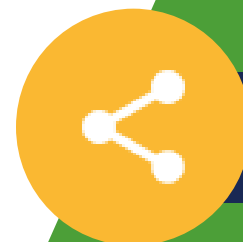
SEARCH

We invite you to search for technologies on our database.



UPLOAD

Register to be a WIPO GREEN user and upload your technology needs and solutions.



CONNECT

The automated matchmaking function on our database makes it easy to connect with technology seekers and providers.