WIPO GREEN: The Marketplace of Sustainable Technology

Trade and Environmental Sustainability Structured Discussions (TESSD)
TESS informal working group meetings
Working Group on Environmental Goods and Services
World Trade Organization
Geneva 20 Sept. 2023

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WIPO
WIPO GREEN Platform

- WIPO GREEN platform, major visible implementation
- Combines all assets
  - Database
  - Projects
  - Partners
  - Resources / knowledge material
- Addresses a knowledge gap between needs and solutions
- IP a cornerstone of innovation ecosystems and technology transfer
WIPO Green Technology Book
1st edition launched at COP27, 2022

Solutions for Climate Change
Adaptation

• >800,000 unique visitors since launch mid-Nov. 2022
• >19,000 full report downloads
• Strong developing country interest
The Green Technology Book shows solutions - a digital first publication
3 Technology areas: Agriculture & Forestry
Water and Coastal Regions, Cities

Chapter 5
Cities

Today, over half the world lives in cities, and the number is growing. Climate impacts such as heatwaves, floods and extreme weather events are becoming more intense and frequent. Urban areas have been hit hard. As cities look toward increasing their preparedness and capacity to adapt, technologies are offering part of the solution.

From cooling buildings, rainwater harvesting, protecting critical infrastructure to warning residents about a flood, this section showcases some well-established solutions. It also introduces technologies as yet on the horizon, and presents examples of innovative ways of using technology for climate adaptation. Nature-based and engineered solutions all have their important role to play.

Explore technologies

Urban planning, Buildings, Infrastructure and services, Early model
Chapter 5. Cities

Buildings

Heatwaves are associated with increased mortality and health risks. The impact will be greatest on cities compared to rural areas due to the heat island effect. The need for buildings to offer heat relief has accelerated innovation in cooling technologies. At the same time, buildings themselves must stay protected from climate-related hazards such as floods.

Innovation examples

Innovation example: Singapore’s “Garden City”
A strong rise in economic prosperity triggered tall and densely built architecture in Singapore. The city started profiling itself as a “Garden City” with an extensive vertical greening strategy. The rooftop gardens helped mitigate heat effects and reduce cooling costs.

New York’s cool roofs and cooling centers
The New York “CoolRoofs” initiative has encouraged the installation of more than 500,000 m² of roof space on existing buildings in a white reflective coating. This has helped lower daytime temperatures and reduce energy consumption for cooling.

Proven technologies

... Read more
Examples and Proven, Frontier & Horizon groups

Innovation example: Singapore’s “Garden City”
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... Read more

Proven technologies

Building envelope waterproofing and foundation drainage
A drain is installed along the foundation of a building to collect excess groundwater and drain it away from the building. Niblex's NuDrain Sheet
... Read more

Frontier technologies

Mediterranean seagrass as insulation
Natural alternatives to synthetic insulation

Double- and triple-paned windows with insulating gas
Among the window products provided by the company SSG, the DuraComfort component has two or more layers of insulating glass units and a cavity between.
... Read more
Individual solutions

3. Agriculture and forestry / Irrigation / Proven technologies

Smartphone control of alternative energy powered irrigation system

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

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

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
Smartphone control of alternative energy powered irrigation system

**Description**

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.
**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
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 Mitigation

Soils, land use change and forestry

Healthy soils contain large reservoirs of carbon. This can be maintained and increased to act as a carbon sink or it can be released when soils are cultivated unsustainably. Land use affects carbon emissions. Conversion of forests to fields and fields to built-up areas all have impacts.
WIPO GREEN Acceleration Projects

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

1. Climate Smart Agriculture in Latin America (Argentina, Brazil, Chile, Peru, Uruguay)
2. China Smart Cities
3. Treating and valorizing palm oil mill effluent in Indonesia
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
Thank you!

wipo.int/green

We invite you to search for technologies on our database.

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

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