

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION  
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by UNWTO

to the CSTD 2022-2023 priority theme on “Technology and innovation for cleaner  
and more productive and competitive production”

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**PRIORITY THEME 1:** Technology and innovation for cleaner and more productive and competitive production

**United Nations Commission on Science and Technology for Development (CSTD)**

To Whom it May Concern,

As you are aware, the [CSTD 25<sup>th</sup> annual session](#) selected “Technology and innovation for cleaner and more productive and competitive production” as one of the priority themes for its 26<sup>th</sup> session (2022-23 period). This priority theme is directly relevant to SDG 9 on industry, innovation and infrastructure.

As highlighted by the [Technology and Innovation Report 2021](#), We live in a time of rapid technological change, at the height of the digital transformation and the early stages of the Industry 4.0 revolution. These technological waves have great potential to bring about the transformations needed to achieve the SDGs, reduce poverty, tackle climate change and put the world on a sustainable path. They also offer a window of opportunity for developing countries to catch up technologically and narrow global divides. Critical areas for innovation in this new technological revolution are **renewable energy technologies** and frontier technologies for **sustainable production and consumption**. Innovation in these areas could help diversify economies and create higher-wage jobs while protecting the planet.

This priority theme will examine national strategies and policies related to **green technology and green innovation**, and the role of international cooperation, including triangular and South-South cooperation, in supporting developing countries to benefit from windows of opportunity for developing, using, adopting and adapting these frontier technologies in production processes for catching up economically and technologically.

Questions to be addressed include: What countries should do to take advantage of this window of opportunity? How could the international community support developing countries in this regard?

The CSTD secretariat is in the process of drafting an issues paper on the theme to be presented at the CSTD inter-sessional panel meeting from 25 to 27 October 2022. In this context, we would like to solicit input from the CSTD members on this theme. We would be grateful if you could kindly answer the following questions based on your experience in your country or region.

1. What are some specific examples (from the public and private sectors) of green technology and innovation for cleaner and more productive and competitive production in your member countries? Please include contact, website, link to reports and any other relevant information concerning these projects and initiatives.
2. What are the national strategies, policies, and laws concerning green technology and innovation for cleaner and more productive and competitive production in your member countries or region?
3. What are the key industries that are pioneering green innovation in your member countries or region? List the key actors in the national ecosystem of innovation related to green innovation in your member countries or region (firms, universities, financial institutions, regulators)? What are the key networks of the ecosystem in your region (including online networks, innovation hubs, forums, etc.)?
4. What are the challenges that governments in your region (or from your member countries) have faced or may face in promoting green technology and innovation in your country to contribute to national development priorities and accelerate the progress towards the SDGs?
5. What should governments, the private sector, organized civil society, and other stakeholders do so that developing countries can benefit from these technologies?

6. What are some examples of international cooperation mechanisms, projects, programmes or strategies, including triangular and South-South cooperation, in green technology and innovation that your organization contribute or is part of?
7. What actions can the international community, including the CSTD, take to help developing countries take advantage of green technology and innovation for cleaner and more productive and competitive production?
8. Could you suggest some contact persons of the nodal agency responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further input or invite some of them as speakers for the CSTD inter-sessional panel and annual session.
9. Do you have any documentation, references, technological assessments, future studies or reports on the priority theme in your country or region?

Please send your responses and any further inputs on the theme to the CSTD secretariat ([stdev@unctad.org](mailto:stdev@unctad.org)) by 31 July 2022. We look forward to receiving your valuable input.

Sincere Regards,

CSTD secretariat

Tourism, as a cross-cutting sector, has the potential to positively contribute to the achievement of the Sustainable Development Goals worldwide. To this end, it is essential to strengthen the global innovation and entrepreneurship ecosystem by fostering the flow of knowledge, best practices, technology and investments amongst its stakeholders, namely Governments, institutions, corporations, investors, accelerators, education centres and startups, which shorten the time of finding disruptive and forward-thinking solutions.

On the other hand, it is key to focus on education, especially on the development of digital skills and the use of new technologies so that more added-value jobs can be created in all economic sectors, and especially in tourism.

Science, Technology and Innovation (STI) have been promoted through UNWTO initiatives and used by its participants in order to address the above-mentioned challenges.

Artificial Intelligence, Internet of Things, Blockchain and, Augmented and Virtual Reality have been identified as the most common technologies in the **UNWTO Startup Competitions and Innovation Challenges Programmes**. Through calls and selection processes characterized by the participation of both private and public sectors, best startups are awarded, mentored, and connected to the global ecosystem.

For instance, the **UNWTO SDGs Global Startup Competition** received responses from 10,000 participants from 138 countries and all economic sectors. The 25 winning projects entered a curated programme of benefits with the support of 21 partners and collaborators (such as, Globalia, Qatar Airways, Qatar National Tourism Council, Amazon Web Services, Mastercard, Google, Amadeus, IE University, Telefónica, IDB Lab and Plug and Play), including mentorship, access to technological support, connection to Member States, corporates, and investors for opening the doors to funding and pilot projects opportunities. Likewise, **Top 25 Innovators Working for a More Sustainable and Innovative Tourism catalogue** was created to facilitate Member States and private sector access to solutions which cover projects for **decarbonization, monitoring of sustainability indicators, water access, women empowerment, smart mobility**, amongst many others.

More top startups at the **Finalists and Winners website** and the **Top 100 Innovators Catalogue**, but some specifically working in tourism to accelerate the SDGs are highlighted below:

- **Identified startups working on SDG 7 “Affordable and Clean Energy”:**

- **Enexor BioEnergy** (United States) [www.enexor.com](http://www.enexor.com)

**Brief:**

“Enexor BioEnergy complements several SDGs and most closely aligns with SDG 7, “Affordable and Clean Energy” as we have developed an innovative renewable energy solution for the world’s organic, plastic, and biomass waste problems. Enexor’s Bio-CHP is a patented system that can convert almost any organic, plastic, or biomass waste (in any combination) into reliable, renewable power and thermal energy while concurrently offsetting 2,200+ tons per year of CO2. Modular and easily transportable, the plug-and-play design of this powerful system allows for quick deployment and onsite mobilization in most places around the world and can be aggregated as needed. Enexor’s Energy-as-a-Service (EaaS) business model is a major competitive advantage; as we sell the electricity, thermal, and waste diversion generated by our Bio-CHP systems to a customer instead of selling the system itself. In doing so, Enexor delivers on average between 20-50% savings to the customer on their energy, thermal, and waste disposal costs while requiring minimal capital outlay. Enabling cost savings and greater sustainability, Enexor truly benefits tourism and hospitality businesses”.

- **BeFC** (France) [www.befc.global](http://www.befc.global)

**Brief:**

“BeFC produce paper-based biofuel cells as an environmentally-friendly and sustainable energy solution. We combine our clean energy solution with flexible electronics platforms that have been optimised to our energy source. Our technology is metal-free and plastic-free, meaning it can be easily disposed of with minimal or negligible impact to the environment, or even composted. BeFC use bio-sourced and sustainable materials. In fact, the materials used in fabrication of our biofuel cells are simply cellulose and carbon papers, sugars, salts and enzymes.

The technology is based on the use of enzymes to convert glucose (sugar) and oxygen into electricity. BeFC has decades of expertise in optimising the biochemical wiring of enzymes to carbon paper, culminating in a 6-patent portfolio.

We know the future will be smart, but at BeFC we believe it can be smart and sustainable”.

- **Swimsol** (Austria) [www.swimsol.com](http://www.swimsol.com)

**Brief:**

“Affordable, reliable, sustainable and modern energy. This is a goal that Swimsol holds. Swimsol’s photovoltaic solutions offers green energy at a cheaper price than diesel (a predominant energy source in the Maldives and other Small Island Nations). Harnessing the power of the tropical sun means Swimsol’s solar systems produce a steady supply of renewable energies, allowing its clients to switch off their diesel generators partially or fully during the day. Furthermore, each system is optimally configured to integrate into the pre-existing electrical grid and ensure a reliable and steady supply of energy. By offering several financing options (such as turnkey or power purchasing agreements), Swimsol ensures solar power is affordable and attainable for its clientele – so that SDG 7 can become a reality”.

- **Identified startups working on SDG 12 “Sustainable Production and Consumption”:**

- **Lumitics** (Singapore) [www.lumitics.com](http://www.lumitics.com)

**Brief:**

“Lumitics mission is to empower kitchens globally to be more sustainable by tackling their food waste through superior AI and image recognition capabilities. Lumitics is committed to UN SDG #12 to help kitchens half their food waste by 2030”.

- **Kitro** (Switzerland) [www.kitro.ch](http://www.kitro.ch)

**Brief:**

“Founded in 2017, KITRO is a Swiss startup embarking on a global challenge by harnessing the power of technology and using it for sustainable change. With artificial intelligence as the foundation, KITRO offers an automated food waste data collection and analysis solution that can be adopted by food and beverage outlets worldwide.

Created by hospitality insiders, the company strives to bring back the value of valuable resources, so they are appreciated and not wasted”.

**Other UNWTO Programmes:**

- **UNWTO Digital Futures for SMEs Programme:** seeks to accelerate economic recovery of the tourism sector by scaling up innovative Small and Medium-sized Enterprises (SMEs) to unleash digital technologies to create jobs and enhance future resilience in the linkages of the tourism value chain post COVID-19. It aims to provide digital training on connectivity, business growth, e-commerce, big data and analytics, payments and security to 1 million beneficiaries.
- **UNWTO Startup Competitions and Challenges:** Global calls and selection processes characterized by the participation of both private and public sectors, best startups are awarded, mentored, and connected to the global ecosystem.
- **UNWTO Tourism Online Academy:** UNWTO is working closely with top universities to up-skill tourism workforce in destination planning, sustainability, and management.
- **UNWTO Jobs Factory:** UNWTO joined forces with Hosco, the professional network specially designed for the hospitality industry. A platform that will support and improve your competitiveness regarding job creation and help you leverage human capital development in your country and region, helping the tourism workforce access the best job opportunities.

The UNWTO Jobs Factory harnesses the power of Hosco’s machine learning to match candidates with suitable positions, connecting employers with the very best talent our sector has to offer. It will allow monitoring current and future skills development, facilitating intelligent labour market data collection, insights, and forecasting. In addition, to identifying trends and the shift in occupations due to the digital transformation, ensuring agile response to change in the educational and training institutions, and helping our Member States make important decisions to support jobs based on the latest, trusted data.

- **UNWTO Investment Programme: Investment Readiness for Green Finance Mechanisms** in partnership with the International Finance Corporation (IFC).

**UNWTO Investment Guidelines**

- UNWTO Investment Guidelines – **Enabling Frameworks for Tourism Investment** (2021)
- UNWTO Investment Guidelines – **Strategies to Safeguard Tourism Investments during COVID-19** (2021)
- FDI Intelligence **Tourism Investment 2020 – Global Greenfield Investment Trends in Tourism** in collaboration with UNWTO

**Other documents**

- **UNWTO Travel and Tourism Tech Startup Ecosystem and Investment Landscape** (2021)
- **UNWTO Top 100 Innovators Catalogue** (2021)
- **Top 25 Innovators Working for a More Sustainable and Innovative Tourism Catalogue** (2021)