Topics

Content

What is technology development and transfer?.

Content

What are climate technologies?

Technologies that we use to address climate change are known as climate technologies. Climate technologies that help us reduce GHGs include renewable energies such as wind energy, solar power and hydropower. To adapt to the adverse effects of climate change, we use climate technologies such as drought-resistant crops, early warning systems and sea walls. There are also 'soft' climate technologies, such as energy-efficient practices or training for using equipment.

What is technology transfer to support climate action?

Developing and transferring technologies to support national action on climate change has been an essential element from the beginning of the UNFCCC process. In 1992, when countries established the Convention, they included specific provisions on technology with the aim of achieving the ultimate objective of the Convention. The Convention notes that all Parties shall promote and cooperate in the development and transfer of technologies that reduce emissions of GHGs. It also urges developed country Parties to take all practicable steps to promote, facilitate and finance the transfer of, or access to, climate technologies to other Parties, particularly to developing countries. Furthermore, the Convention states that the extent to which developing country Parties will effectively implement their commitments will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology.

Over the years, technology development and transfer with regard to adaptation has received increasing attention. The Paris Agreement speaks of the vision of fully realizing technology development and transfer for both improving resilience to climate change and reducing GHG emissions. It establishes a technology framework to provide overarching guidance to the Technology Mechanism.

Content

What are the key institutions and mechanisms?

Technology Mechanism

In 2010, the COP established the Technology Mechanism (https://unfccc.int/ttclear/support/technology-mechanism.html) with the objective of accelerating and enhancing climate technology development and transfer. It consists of two complementary bodies that work together, – the Technology Executive Committee (TEC) (https://unfccc.int/ttclear/tec) and the Climate Technology Centre and Network (CTCN) . The mechanism also serves the Paris Agreement. The Joint Work Programme of the Technology Mechanism (2023–2027) (https://unfccc.int/ttclear/tec/workplan) is composed of the joint activities and common areas of work of the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN), the rolling workplan of the TEC and the Programme of Work of the CTCN. The Joint Work Programme brings together, for the first time, the long-term strategies of the TEC and the CTCN and defines areas of focus for the mechanism as a whole, in order to elevate its performance and increase its impact. In 2023, the Technology Mechanism launched its Initiative on Artificial Intelligence for Climate Action (#AI4ClimateAction (https://unfccc.int/ttclear/artificial_intelligence)) to explore the role of AI as a powerful technological tool for advancing and scaling up transformative climate solutions for mitigation and adaptation action in developing countries with a focus on LDCs and SIDS.

Technology Executive Committee

The TEC is the Technology Mechanism's policy arm and analyses policy issues and provides recommendations to support countries in enhancing climate technology efforts. The TEC is an executive committee consisting of 20 technology experts from both developing and developed countries. The TEC meets multiple times a year and holds climate technology events that support efforts to address key technology policy issues.

The Climate Technology Centre and Network

Content

The CTCN is the mechanism's implementation arm and it supports countries to enhance the implementation of climate technology projects and programmes. It has three core services: providing technical assistance to developing countries; creating access to knowledge on climate technologies; and fostering collaboration among climate technology stakeholders. The CTCN is hosted by the United Nations Environment Programme, in collaboration with the United Nations Industrial Development Organization, and is supported by 11 partner institutions with expertise in climate technologies. The Centre facilitates a network of national, regional, sectoral and international technology centres, networks, organizations and private sector entities. More than 150 Parties have submitted their
national designated entities (NDEs) (https://unfccc.int/ttclear/support/national-designated-entity.html)
for climate technology and transfer, which are also part of the network. Developing country Parties may submit requests for technical assistance to the CTCN through their NDEs.

Technology Framework

Article 10, paragraph 4, of the Paris Agreement established the Technology Framework. The framework provides overarching guidance to the work of the Technology Mechanism in promoting and facilitating enhanced action on technology development and transfer in order to support the implementation of the Agreement in pursuit of the long-term vision on technology development and transfer referred to in Article 10, paragraph 1.

Technology needs assessments

Understanding climate technology needs is the starting point for effective action to reduce greenhouse gas emissions and adapt to the adverse impacts of climate change. To determine their climate technology priorities, developing countries undertake technology needs assessments (TNAs) (https://unfccc.int/ttclear/tna). A TNA supports national sustainable development, builds national capacity and facilitates the implementation of prioritized climate technologies. Since 2001, more than 85 developing countries have undertaken TNAs to identify their technology needs for mitigation and adaptation. Since 2010, as part of their TNAs, developing countries have also developed technology action plans (TAPs), which are concrete action plans for the implementation of their prioritized technology needs."

Content

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