

# Technology and the UNFCCC

Building the foundation  
for sustainable development



**United Nations**  
Framework Convention on  
Climate Change

# TECHNOLOGY AND THE UNFCCC

An aerial photograph of a lush green tea plantation. The rows of tea bushes are neatly organized into long, parallel lines that stretch across the frame. Several workers, wearing traditional conical hats, are visible walking through the rows, likely tending to the plants. The overall scene is vibrant and shows a well-maintained agricultural landscape.

We cannot address climate change without technology.

Over the past 20 years, governments facilitated technology development and transfer to developing countries through the United Nations Framework Convention on Climate Change (UNFCCC). These efforts help us to more effectively reduce greenhouse gas emissions and adapt to climate impacts. Moving forward, technology will play an even more significant role as we pursue efforts, through the Paris Agreement, to limit global average temperature rise to 1.5 °C above pre-industrial levels. To understand how to meet the challenge of climate change, it helps to understand five key milestones that define UNFCCC technology efforts on this issue.

## What are climate technologies?

Technologies that we use to address climate change are known as *climate technologies*. Climate technologies that help us reduce greenhouse gas emissions 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.

1992

# THE BEGINNING

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 in the original text. It is worth noting these provisions, as they form the basis for all technology efforts under the Convention.

## The Convention emphasizes the importance of climate technology

### Article 4, paragraph 1

*“All Parties...shall: (c) Promote and cooperate in the development, application and diffusion, including transfer, of technologies...that control, reduce or prevent anthropogenic emissions of greenhouse gases...”*

### Article 4, paragraph 5

*“The developed country Parties...shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention...”*



UN Photo/Joe B Sills III



UN Photo/Michos Tzovaras

More information  
[www.unfccc.int/6036.php](http://www.unfccc.int/6036.php)

1995-  
2001

# CONSULTATIVE PROCESS

After establishing the Convention, countries initially focused on developing a shared understanding of climate technology issues at the global level. They explored what information was available on technology development and transfer, what were the technology needs of developing countries, how the international community was providing support, and what technologies could support countries to reduce greenhouse gases and adapt to climate change.

From 1997 to 2001, building upon this initial work, countries stepped up their efforts by engaging in a consultative process on climate technology development and transfer. Regional workshops in Asia and the Pacific, Africa, and Latin America and the Caribbean explored a broad range of issues related to climate technology at the national, regional and international levels. In 1997, countries also included a provision on technology as Article 10(c) of the Kyoto Protocol.

## The Kyoto Protocol promotes climate technology development and transfer

### Article 10

*“All Parties...shall: (c) Cooperate in the promotion of effective modalities for the development, application and diffusion of, and take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies...in particular to developing countries...”*

### More information

[www.unfccc.int/ttclear/  
workshops](http://www.unfccc.int/ttclear/workshops)



UN Photo/Frank Leather

2001-  
2010

# TECHNOLOGY TRANSFER FRAMEWORK

Building on the understanding developed through the consultative process, in 2001 countries created the technology transfer framework (known officially as the framework for actions to enhance the implementation of Article 4, paragraph 5, of the Convention). They also established the expert group on technology transfer (EGTT) to analyse technology development and transfer issues. The technology transfer framework covers five key technology themes:

- Technology needs and needs assessments
- Technology information
- Enabling environments for technology transfer
- Capacity-building for technology transfer
- Mechanisms for technology transfer

In 2007, countries added four sub-themes to the mechanisms theme: innovative financing; international cooperation; endogenous development of technologies; and collaborative research and development.

Between 2001 and 2010, both the EGTT and the technology transfer framework supported developing countries to address technology transfer issues and implement technology activities. Through these institutions, countries established and consolidated the technology needs assessment process. With developing countries identifying their technology needs, the EGTT explored how technology financing and capacity-building could help countries address their needs. It wrote a guidebook and held regional workshops which trained project developers in preparing project proposals for financing. Work on technology financing also led to the creation in 2008 of the Global Environment Facility's Poznan strategic programme on technology transfer. In addition, the EGTT explored how to monitor and evaluate the technology transfer framework's effectiveness. It also developed strategies and evaluated options to accelerate technology development and transfer in the long term. In 2010, countries ended the EGTT's mandate when they established the Technology Mechanism. They requested the Technology Executive Committee (TEC) to further implement the technology transfer framework.



## More information

[www.unfccc.int/ttclear/  
ttframework](http://www.unfccc.int/ttclear/ttframework)

# TECHNOLOGY NEEDS ASSESSMENTS

One of the most significant outcomes from the technology transfer framework was the work that countries undertook on technology needs assessments (TNAs). TNAs are a set of activities that developing countries undertake to identify their climate technology priorities. Since 1999, more than 85 developing countries have assessed their technology needs to address climate change. Through the TNA process, developing countries:

- Identify technological means to address climate change and accelerate national development
- Build national capacity to support national sustainable development
- Create technology action plans to achieve implementation and demonstrate technology viability

Support to developing countries to undertake TNAs has been provided by the Global Environment Programme (GEF), the United Nations Environment Programme in partnership with the Technical University of Denmark (UDP), and the United Nations Development Programme. Currently, UDP is implementing the GEF-funded TNA Global Project, phase II, which provides financial and technical support to 24 countries to conduct TNAs. Participating countries plan to submit reports on their TNAs in 2017.

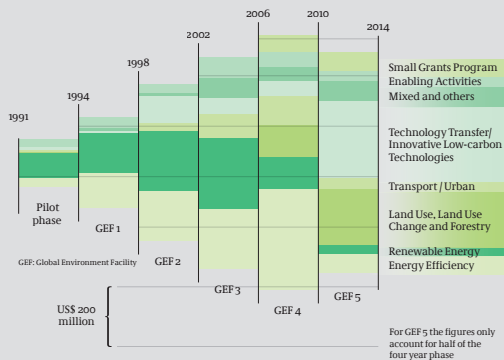
## 1. Planning

An increasing number of developing countries are being supported to identify their technology needs. Since 1999, more than 85 countries have undertaken or updated their technology needs assessments (TNAs).



## 2. Support

Having identified their technology needs, the support available to developing countries for implementing technology-related activities is growing.



# CLIMATE FINANCE

The Global Environment Facility (GEF) and the Green Climate Fund (GCF) provide financial support to developing countries to develop and deploy climate technologies.

Since 1991, the GEF has supported developing countries to implement more than 800 projects with mitigation technology transfer objectives through over USD 5 billion of funding and USD 40 billion of co-financing. Since 2001, the GEF has also supported adaptation technology transfer through the least development countries fund and the special climate change fund. These two funds have provided more than USD 1 billion for over 300 projects with adaptation technology transfer objectives. Since 2009, the GEF has supported climate technology activities under the Poznan strategic programme. Initially established with a budget of USD 50 million, this programme aims to scale up the level of investment for technology transfer and thus help developing countries to address their needs for climate technologies.

The GCF, which started dispersing funding in 2015, will play a key role in supporting climate technology development and transfer in the future. To speed up climate action, countries are now working to enhance linkages between the UNFCCC Financial Mechanism and Technology Mechanism.

## 3. Implementation

With this support, developing countries all over the world are implementing technology projects to mitigate greenhouse gases and adapt to the adverse effects of climate change.



# TECHNOLOGY MECHANISM

2010  
ONWARDS

In 2010, countries scaled up efforts on climate technology by establishing the Technology Mechanism. The Technology Mechanism consists of two complementary bodies: the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN).

The TEC, as the policy arm of the Technology Mechanism, analyses technology policy issues and provides recommendations to support countries in enhancing their climate technology efforts. It consists of 20 technology experts representing both developing and developed countries. The CTCN is the implementation arm. It has three core services: providing technical assistance at the request of developing countries; creating access to knowledge on climate technologies; and fostering collaboration among climate technology stakeholders. The United Nations Environment Programme, in collaboration with the United Nations Industrial Development Organization, hosts the CTCN with the support of 11 partner institutions.

Since its creation, the TEC has become a key climate technology policy body. It analyses contemporary climate technology issues and develops balanced policy recommendations for countries to consider. It has tackled issues such as: climate technology financing; enabling environments and barriers; innovation; mitigation and adaptation technologies; technology needs; and technology research, development and demonstration.

The CTCN has established itself as a centre for climate technology support and information. It has a global network of more than 150 organizations which support developing countries in finding climate technology solutions. As of mid 2016 the CTCN is responding to more than 100 requests from developing countries on climate technology issues. The requests cover a broad range of both mitigation and adaptation issues and reflect the diverse challenges that different countries face. For instance, the CTCN helped Bhutan to reduce public transport greenhouse gas emissions and supported Namibia in developing a water harvesting plan. To date, more than 140 countries have nominated their national designated entities, through which developing countries submit requests for technical assistance to the CTCN.

**More information**  
[www.unfccc.int/tclear/tm](http://www.unfccc.int/tclear/tm)





# PARIS AGREEMENT

Agreed by countries in Paris in 2015, the ground-breaking Paris Agreement paves the way for a new chapter in global action on climate change. It sets the stage for urgently needed climate technology development and transfer. Notably, countries anchored the Technology Mechanism within the Paris Agreement and decided that it would be a key element in implementing the Agreement. They also strengthened the Technology Mechanism, requesting further work on technology research, development and demonstration, as well as endogenous capacities and technologies. Additionally, the Paris Agreement established a technology framework to provide overarching guidance to the Technology Mechanism. In the next few years, countries will elaborate the framework to enhance their technology efforts. Together, the Technology Mechanism and the technology framework will support countries to limit the rise in global temperature and adapt to climate change.

## The Paris Agreement defines a long-term vision on climate technology

### Article 10, paragraph 1

*“Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions.”*



**More information**  
[www.unfccc.int/9485.php](http://www.unfccc.int/9485.php)





## Find out more

TT:CLEAR, the UNFCCC technology website, has up-to-date information on technology action under the Convention

[www.unfccc.int/ttclear](http://www.unfccc.int/ttclear)



## Find out more

- Want to read the latest TEC recommendations on climate technology?
- Want to find out how your country can receive CTCN technical assistance?
- Are you an organization or company interested in joining the CTCN network?
- Want to support the Technology Mechanism?

## Contact Details

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Send a tweet to the Technology Mechanism bodies using the Twitter Hashtag [#climatetech](https://twitter.com/climatech)

