

# Possible work on emerging climate technologies

TEC 17



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# 1. Taskforce members

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## TEC members

Mr. Birama Diarra, Mr. Ian Lloyd, Ms. Duduzile Nhlengethwa-Masina, Ms. Claudia Alejandra Octaviano Villasana, Mr. Michael Rantil, Mr. Kazem Kashefi, Mr. Naoki Mori, Mr. Robert Berloznik, Mr. Suil Kang, Ms. Alysha Bagasra

## CTCN Advisory Board

Mr. Samuel Adeoye Adejuwon

Mr. Karsten Krause

Mr. Ambuj Sagar

## Observer organizations

BINGO: Ms. Mary Stewart – Sustainable Business Australia

ENGO: Mr. Dalindyabo Shabalala – Center for International Environmental Law

RINGO: Ms. Heleen de Coninck – Radboud University Nijmegen



## 2. Mandate

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- **Paris Agreement, Article 10.5** notes that “*accelerating, encouraging and enabling innovation is critical for an effective, long-term global response to climate change...*”
- **COP 21 requested** the TEC and CTCN, in supporting the implementation of the Paris Agreement, to undertake further work on technology research, development and demonstration



### **TEC 16 requested taskforce to...**

... prepare a background paper on possible TEC work on the innovation of emerging climate technologies, including zero-emission and negative-emission technologies, for consideration at TEC 17



#### **Topics covered:**

- What are emerging climate technologies
- Who is working on emerging climate technologies
- Why focus on emerging climate technologies
- Possible work of the TEC

## What is an emerging technology?

*“[A] relatively fast growing and radically novel technology, characterized by a certain degree of coherence persisting over time and with the potential to exert a considerable impact. (...) Its most prominent impact, however, lies in the future and so in the emergence phase is still somewhat uncertain and ambiguous”*

Rotolo, Hicks and Martin [2016]



## What is an emerging climate technology?

### Examples

- Guidance by TEC:
  - Zero-emission technologies. Technologies that emit zero (or negligible) emissions when in operation
  - Negative-emission technologies. Technologies that remove greenhouse gas emissions from the atmosphere
- Both mitigation and adaptation technologies



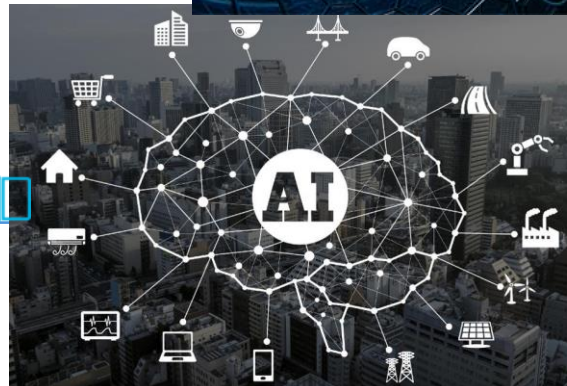
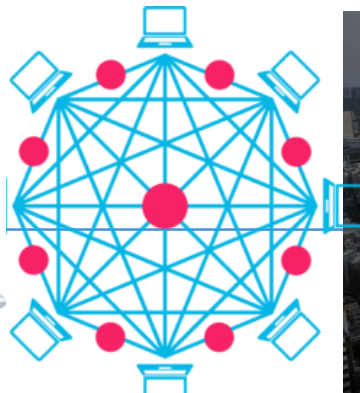
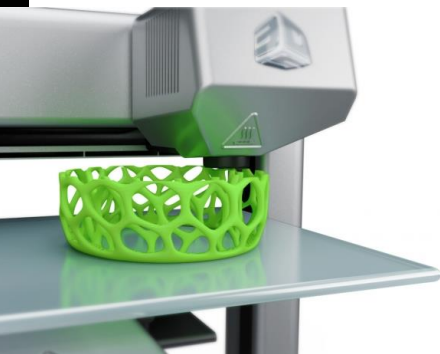
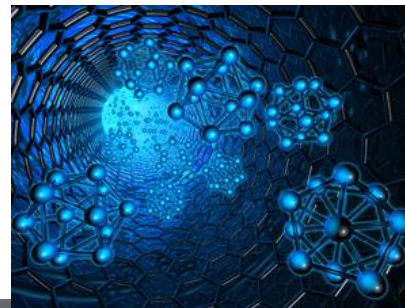
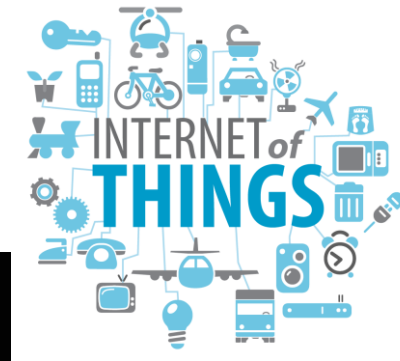


### 3. Background paper

## What is an emerging climate technology?

General purpose technologies (IPCC): other emerging technologies that are not necessarily developed for climate purposes, but have potential for supporting action on climate change, e.g.:

- Next generation batteries
- Precision and cellular agriculture and hydroponics
- Artificial intelligence
- Blockchain
- 3D printing
- Internet of things
- Nanotechnologies
- Big data



## **Who is working on emerging climate technologies?**

All key actors:

- United Nations organizations
- Intergovernmental and international organizations
- Governments
- Private sector
- Academia
- Non-governmental organizations



## Why focus on emerging climate technologies?

- Need to enhance climate technology innovation for achieving aims of Paris Agreement
  - Enhancing innovation of emerging technologies has potential to speed up and scale up global response to climate change
  - Furthermore, it is predicted that emerging technologies will have a transformational impact on society
  - Thus, it is important to understand what emerging climate techs are, and how we could enhance their innovation
  - At the same time, also important to understand their potential economic, environmental (including climate) and social impact
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### 3. Background paper

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## Possible work of the TEC

- While many actors are working on this topic, policy makers, particularly those in developing countries, often struggle to stay abreast of developments
- Consequently, policy development can be slower than the innovation of these technologies. Also, policy-makers lack access to information on positive and negative impacts of such techs
- There is a need for a trusted source of information on emerging climate technologies = TEC
- TEC could bring together existing information produced by key actors to shed light on the possible role of emerging climate technologies in addressing climate change
- TEC could also provide insights on potential impacts of these technologies and identify policies that can support their innovation



### 3. Background paper: possible TEC activities

Activity	Deadline
<p>1. Develop technical paper on innovation of emerging climate technologies, on inter alia:</p> <ul style="list-style-type: none"><li>- Key emerging climate technologies</li><li>- Application, including in least-developed countries and small island developing states</li><li>- Potential impact</li></ul>	First half of 2019
<p>2. Hold event on innovation of emerging climate technologies (on above three areas)</p>	2019
<p>3. Develop TEC Brief and recommendations to COP 25</p>	2019
<p>4. Disseminate TEC Brief and recommendations to stakeholders</p>	2019 and beyond



A night sky filled with stars, with the dark silhouettes of palm trees in the foreground. The scene is dark, with the stars providing the primary light source.

## Expected action

TEC will be invited to identify next steps for work on innovation of emerging climate technologies, in context of future workplan