

# Call for Applications and Nominations

**EMERGING DIGITAL TECHNOLOGIES  
FOR ENHANCING POST-2020  
CLIMATE AND CARBON MARKETS**

Duration  
5 weeks

**Beginning of the training : 21<sup>st</sup> November 2022**

**Application Deadline : 7<sup>th</sup> November 2022**

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**Online Training**

# **EMERGING DIGITAL TECHNOLOGIES FOR ENHANCING POST-2020 CLIMATE AND CARBON MARKETS**

## **Call for Applications and Nominations**

### ***Announcement in Brief***

**Type :** Online Course

**Area:** Economic Affairs

**Date :** 21<sup>st</sup> November 2022 - 23<sup>rd</sup> December 2022

**Duration :** 5 Weeks

**Language :** Bilingual ( French / English )

**Application Deadline:** 7<sup>th</sup> November 2022



*IDEP strongly encourage and supports the participation of suitably qualified female officials in its capacity development and training programme*

## Context and Rationale

As highlighted in the previous course dealing with 'Climate and Carbon Market Readiness', the Paris Agreement established the post-2020 climate and carbon markets. However, given the advances in the information and communication technology (ICT) space, as well as the digital space, this course seeks to deliberate on how the emerging digital technologies can be harnessed to enhance the post-2020 climate and carbon markets.

In 2021, the Asian Development Bank acknowledged the role played by digital technologies for climate action, disaster risk reduction and resilience, as well as environmental sustainability. To this end, three stages in the development of digital technologies were identified. Stage I is associated with the development of the Internet, Satellite Imagery, Geographic Information Systems (GIS), Remote Sensing, Mobile Phones, and Databases. Stage II brought in the now popular social media, Apps, Smartphones, and Cloud Computing. Stage III introduced Artificial Intelligence, Machine Learning, Deep Learning; Internet of Things and Smart Systems; Distributed Ledger Technology and Blockchain; Big Data and Predictive Analytics; Virtual and Mixed Reality; Robotics and Unmanned Vehicles. While some of these technologies will not be discussed in depth as they relate to climate and carbon markets, several will be considered.

From Stage I, digital technologies could be used for online repositories and search engines on carbon emissions, mitigation options, or Data Support for Climate Change Assessments like the IPCC's TG-Data. Digital technologies may also be utilized to guide household consumers on energy savings options and renewable energy applications like rooftop-based photovoltaic (PV) systems solar. For businesses, Stage I digital technologies may provide mitigation options, including searchable tools guiding businesses in their mitigation options, or searchable benchmarking websites on mitigation performance. At the national, states and local government levels, digital technologies could be utilized in designing discussions for countries' nationally determined contributions (NDCs) under the Paris Agreement.

From Stage II digital technologies, apps and social media could be used in promoting sustainable and efficient consumption and production, doubling up in addressing Sustainable Development Goal 12. Apps with the ability to calculate and/or track carbon footprint come in handy. The [climateinteractive.org/](http://climateinteractive.org/) developed from the Massachusetts Institute of Technology (MIT) and based on system dynamics modeling allows users to conduct simulations and play out complex mitigation scenarios. Apps can also indirectly contribute to reducing carbon dioxide (CO<sub>2</sub>) emissions. For example, Apps like Capture help users to track their carbon emissions.

This platform, which provides the means to track carbon emissions can provide motivation for users to decrease their carbon footprint consequently reducing carbon dioxide emissions.

Several Stage III digital technologies have good potential to support climate mitigation efforts. Among such technologies, Artificial Intelligence (AI) application could reduce global GHG emissions by 4% in 2030. The Internet of Things (IoT) may enable the establishment of connected sensors delivering data from various fields and for various emissions-intensive appliances including smart home energy management system (EMS) and big data analytics approach to promote energy efficiency. With a focus of this course being on climate and carbon markets post 2020, one cannot ignore the application of blockchain technologies (BCT) in this space.

Although many BCTs are still in their experimental phases, this technology has proved worthwhile as part of the Bitcoin after being introduced in 1998. Coming in as part of distributed ledger technology (DLT), BCTs remain a solid platform for carbon trading in Africa and the world. The DLT can enhance transparency about individual and collective action central to climate and carbon market initiatives. The DLTs permits the protection and preservation of the quality of information and associated transparency in the carbon market, thereby allowing monitoring, reporting, and verification (MRV) systems that can be applied in emission reduction. This can be further enhanced by Smart Contracting and understanding carbon leakage.

Drawing from the foregoing, it is inevitable that a course such as one the proposed herein be instituted in the face of complex and contested post-2020 climate and carbon markets. The carbon markets are established under Article 6 of the Paris Agreement, which allows for both within and trans-boundary engagements with the mechanism.

## Objectives

The course will have the following objectives:

- To enhance understanding regarding digital technologies with the intention to use such in the post 2020 climate and carbon markets.
- To have participants appreciate the need to use digital technology platforms for climate and related action.
- To provide insights into challenges associated with carbon leakage and unaccounted for carbon credits and responses thereof.
- To enhance capacity on the understanding and uptake of Blockchain and Smart Contracts in post-2020 climate and carbon markets in Africa.
- To assist the African continent in identifying opportunities brought by digital technology platforms in the climate and carbon markets.

## Content

Accordingly, the course aims to provide practitioners, policymakers, officials from civil service and any other interested stakeholder with clear understanding of the following four (4) modules:

- **Module 1: Understanding the Digital Technology Platforms**
- **Module 2: Using Digital Technology Platforms for Climate and Related Actions**
- **Module 3: Challenges of Carbon Leakage and Unaccounted for Credits**
- **Module 4: Blockchain and Smart Contracts in Post-2020 Climate and Carbon Markets**

## Skills To be Imparted

At the end of the course, participants will be able to:

At the end of the course, participants will be able to:

- **Comprehensively grasp how digital technologies work with the intention to use such in the post 2020 climate and carbon markets.**
- **Identify appropriate digital technologies and how these could be used in enhancing the uptake of post 2020 climate and carbon markets in Africa.**
- **Grasp the main challenges associated with carbon leakage and unaccounted for carbon credits and responses thereof.**
- **Familiarize with Blockchain and Smart Contracts and apply these in post-2020 climate and carbon markets in Africa.**
- **Clearly advocate for the African continent to identifying opportunities brought by digital technology platforms in the climate and carbon markets and effectively apply such.**

## Pedagogical Approach and Mode of Delivery

The course will be delivered for one month including one week for the final evaluation and retakes if any.

The course will be moderated asynchronously on a daily basis and participants are required to participate in the on-line discussions. The lessons are designed in a way that learners are also able to self-assess their understanding through practical exercises which will be in the form of case studies that will support active learning. Additional resources such as bibliographies, web links and optional readings are provided for participants who wish to deepen their knowledge of the course topic.

The online course is designed in such a way that one unlocks the next module and/or session by completing the practical exercises and quizzes of the previous module. This encourages and also prompts participants to cover all the material before reaching the final evaluation stage.

The course will be delivered in English and French. The course is structured to run over a period of four weeks. The following fifth week will be dedicated to the final evaluation and retakes if any. Extension maybe granted upon request. The pedagogical team will include a Course Director, a team of moderators and Resource persons with first-hand knowledge of the historical and contemporary issues on Carbon Market Development, Green Financing and Climate Protocols, etc.

They also come with strong comparative insights from other regions of the world. In line with the IDEP pedagogical philosophy, the presentation of the course modules will combine a knowledge-building component with experience-sharing among participants.

## Certificate of Completion

A Certificate of Completion will be issued by IDEP to all participants who successfully complete the course-related self-assessments presented for each module.

## Target Audience

The target participants are as follows:

- Senior experts in climate and carbon markets
- Development economists
- Development practitioners and carbon markets project developers
- Academia with interest in climate and carbon markets
- Senior government officials dealing with matters related to climate and carbon markets, including those from national treasury, departments of energy, environment, trade and industry etc.
- NGOs and CBOs top and middle level managers
- Development financiers and aid agencies
- Senior labour unionists
- Senior Journalists and Editors

## Acceptance to the Course

Until the registration deadline, participants are accepted to the course on a rolling basis and subject to availability of slots. Please refer to the paragraph below to see priority target group. Applications must be completed exclusively on IDEP online application platform.

<https://idep-applications.uneca.org/>

## Technical Requirements

Access to internet is an essential condition for participation. The following specifications, as a minimum in terms of hardware and software, are required to take this e-Learning course, please consult your Network Administrator or Systems person to ensure that you have the following:

- Platform: Windows 95, 98, 2000, NT, ME, XP or superior; Mac OS 9 or Mac OS X; Linux
- Hardware: 64 MB of RAM, 1 GB of free disk space
- Software:
  - Adobe Acrobat Reader
  - Adobe Flash Player
  - Microsoft Office (Windows or Mac) or Open Office
  - Browser: Internet Explorer 7 or higher or Firefox 36 or higher
- Modem: 56 K
- Note that JavaScript, Cookies and Pop-ups must be enabled



## Important Dates

- Deadline for Applications and Nominations: 7th November 2022
- Course Period: 21st November – 23rd December 2022

## Contact Information

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*N.B : IDEP strongly encourages and supports the participation of suitably qualified female officials in its capacity development and training programme.*