

MEMORANDUM OF UNDERSTANDING

BETWEEN

**THE EUROPEAN INVESTMENT
BANK**

AND

**THE EUROPEAN CENTRE FOR
MEDIUM-RANGE WEATHER
FORECASTS**

***Cooperation on
Copernicus climate and
atmosphere data service
provisions in support of
EIB activities
as EU's Climate Bank***

The present Memorandum of Understanding ("MoU") is made by and between:

European Investment Bank, having its Head Office at 100, Boulevard Konrad Adenauer, L-2950, Luxembourg (the "EIB"),

on one
part,

and

European Centre for Medium-Range Weather Forecasts, having its Headquarters at Shinfield Park, Reading, RG2 9AX, the United Kingdom and acting through its Bonn duty station, located at Robert-Schuman-Platz 3, 53175 Bonn, Germany ("ECMWF")

on the
other
part,

together referred to as the "**Parties**", each of them as a "**Party**".

THE PARTIES TO THIS MEMORANDUM OF UNDERSTANDING:

CONSIDERING that the EIB is the financial investment arm of the European Union ("EU") created by the Treaty on the Functioning of the European Union. The role of the EIB is to support investments consistent with EU policy objectives. Pursuant to Article 18(7) of its Statute, as a complement to its lending activity, the EIB may provide technical assistance services in accordance with the terms and conditions set out by its Board of Governors.

CONSIDERING that ECMWF is an inter-governmental organisation governed by the Convention Establishing the European Centre for Medium-Range Weather Forecasts and its Protocol on the Privileges and Immunities of the European Centre for Medium-Range Weather Forecasts that entered into force on 1 November 1975 and was amended with effect from 6 June 2010.

RECOGNISING that ECMWF is an independent intergovernmental organization, comprising of a research institute and an operational service producing global numerical weather predictions and other data for its Member and Co-operating States and the broader community. ECMWF has one of the largest supercomputer facilities and meteorological data archives in the world.

NOTING that, since 2014, ECMWF has been operating two services of the EU's Copernicus Earth Observation Programme, the Copernicus Atmosphere Monitoring Service (CAMS) and the Copernicus Climate Change Service (C3S) on behalf of the European Commission with funding from the European Union under a renewed mandate for the Multiannual Financial Framework period 2021-2027. To this effect, Annex II sets out details on CAMS and C3S and their relationship to ECMWF.

NOTING that ECMWF contributes as well to the Copernicus Emergency Management Service (CEMS), as elaborated in Annex II.

NOTING that:

- C3S supports society by providing authoritative information about the past, present and future climate in Europe and the rest of the World;
- C3S offers free and open access to climate data and tools based on the best available science, as elaborated in Annex II;
- C3S relies on climate research carried out within the World Climate Research Programme (WCRP) and responds to user requirements defined by the Global Climate Observing System (GCOS); and
- C3S provides an important resource to the Global Framework for Climate Services (GFCS).

NOTING that:

- CAMS provides consistent and quality-controlled information related to air pollution and health, solar energy, greenhouse gases and climate forcing everywhere in the world, as elaborated in Annex II;
- CAMS builds on many years of European research and development, and on existing European and national capacities, experience and know-how;
- CAMS will develop and operate the new service element consisting of an anthropogenic CO₂ emissions monitoring and verification support capacity and, as such, provides important data in support of climate mitigation actions and the objectives of the UN Paris Agreement.

NOTING that climate services, data and projections of future climate changes are crucial for climate resilient development. As part of the EIB Group Climate Bank Roadmap 2021-2025, the EIB committed to increase substantially adaptation efforts and to ensure that all the operations it supports are adapted to current weather variability and future climate change impacts, in line with the adaptation objectives of the Paris Agreement and the EU Taxonomy. Enhanced use of climate information, data and tools support the implementation of these objectives.

ACKNOWLEDGING that the EIB Climate Adaptation Plan identifies the use of robust climate data and information as an essential part of supporting smart adaptation inside and outside the EU. Also acknowledging that EIB's Climate Risk Assessment (CRA) system is a cornerstone of EIB's approach to assessing and managing climate risk. The CRA provides for a systematic assessment of the physical climate risk in direct lending and helps the EIB and its clients understand how climate change may affect their projects and identify adaptation measures. Through the CRA, the EIB cooperates with public and private climate service providers and aims to leverage the latest findings in climate science for the benefit of clients' and its own decision-making.

HAVE REACHED THE FOLLOWING UNDERSTANDING:

ARTICLE I - PURPOSE

- 1.1 The purpose of this Memorandum of Understanding is to set out a framework for the envisaged cooperation between the Parties in the context of enhanced use of Copernicus owned or brokered data, information and tools, including C3S and CAMS, to inform decision-making as well as related knowledge exchange and capacity building.
- 1.2 The entering into this MoU does not prejudice by any means the possibility or right of each Party to collaborate with other entities in the same or similar fields covered by this MoU.
- 1.3 Any existing MoU or other agreement between the Parties is not affected by this MoU. This MoU does not prevent the signature of any other MoU or agreement between the Parties.
- 1.4 The Parties are entering into this MoU having full regard to their internal governing bodies, statutes, institutional mandate and procedures as amended from time to time.

ARTICLE II – SCOPE OF COOPERATION

- 2.1. The Parties acknowledge that their collaboration is envisaged within the context of the EIB's role as the financial investment arm of the European Union and the ECMWF's implementation of the C3S and CAMS mission to support climate adaptation and mitigation policies of the European Union.
- 2.2. The Parties aim to develop their collaboration with the objective of enhancing the use of C3S and CAMS data, information and tools, to inform approaches, decisions and strategies relevant to climate change adaptation and mitigation at the EIB.
- 2.3. The Parties consider that their future collaboration may include, but is not limited to, the following activities:
 - a) Accessing C3S and CAMS data products and exploring their role as quality assured and operational reference data sources in the EIB guidance documents for clients and internal operational procedures with respect to data needs on atmospheric composition and greenhouse gas emissions, climate change impacts and extreme events at European and global level;
 - b) Supporting quality assessments and facilitating the provision of climate data and services relevant for EIB operations;
 - c) Co-creating indicators, applications, workflows and solutions making use of C3S and CAMS data, tools and information for the EIB's work, with a focus on assessing and monitoring the impacts of climate change at the level of projects or investment portfolios;
 - d) Developing solutions that combine datasets and illustrate sector-specific impacts of climate change to EIB specialist users and clients relevant to EIB operations;
 - e) Exploring opportunities for C3S data products and applications to inform dialogue on the integration of climate adaptation into building codes and engineering standards, asset management and investment decision processes as well as climate hazard data aligned with the Task Force on Climate-Related Financial Disclosures (TCFD);
 - f) Supporting capacity-building and training of EIB staff and clients on how to access, use and interpret C3S and CAMS data and tools, including through a potential 'training-the-trainers' programme by ECMWF;
 - g) Organizing joint workshops, small scale studies and demonstration cases to explore further collaborative actions;
 - h) Promoting activities as covered in the MoU at relevant conferences and meetings;
 - i) EIB providing feedback to ECMWF on user satisfaction and evolving user needs for further service evolution of CAMS and C3S products;
 - j) Facilitating visits of ECMWF domain experts at the EIB (in Luxembourg) as well as exploring options for fellowship positions at ECMWF (in Bonn) to stimulate knowledge transfer;
 - k) Developing a detailed roadmap to elaborate on the envisaged collaboration.

- 2.4. The Parties may agree to use the services of an external contractor to support the implementation of the activities identified under the collaboration.
- 2.5. The Parties intend to hold regular management follow-up meetings, in principle twice per year. The objective of these meetings will be to review progress and to ensure that the above objectives are being achieved.
- 2.6. The Parties intend to carry out their responsibilities under this MoU on a best effort basis, and with no exchange of funds.
- 2.7. ECMWF intends to explore options for fellowships open to EIB experts. Any possible selection of experts for fellowships at ECMWF shall be mutually agreed.

ARTICLE III – EXCHANGE OF INFORMATION

- 3.1 Subject to their internal rules and procedures, the Parties may share information for the purpose of achieving the aims and scope of this MoU according to the form of cooperation agreed to between the Parties.

ARTICLE IV – NON-BINDING NATURE AND PRIVILEGES AND IMMUNITIES

- 4.1 This MoU reflects the Parties' intention to cooperate, expressed in good faith. This MoU does not create any legal obligation or the incurrence of any liability on the Parties. This MoU does not represent any binding commitment with regard to funding or any form of preferential treatment on the part of either Party. Any detailed commitments shall be laid down in separate agreements that may be entered into by the Parties.
- 4.2 Nothing in this MoU shall constitute a waiver, neither express nor implied, or be construed as constituting a waiver of the immunities, privileges and exemptions enjoyed by the Parties, including their respective Directors, Alternates, Officers, Members, employees and experts.
- 4.3 It is further understood that nothing in this MoU shall be construed as allowing or compelling the Parties to exceed in any way the boundaries of their respective constituent instruments, mandates, procedures and policies, and resources.
- 4.4 The cooperation between the Parties is subject to the policies and procedures of the Parties and to such further agreements and approvals as may be required for specific proposed activities.

ARTICLE V – DATA PROTECTION, DISCLOSURE RULES AND CONFIDENTIALITY

- 5.1 This MoU may be made publicly available by the Parties in accordance with their respective rules and procedures on data protection and disclosure. By entering into this MoU, the Parties consent to such disclosure.
- 5.2 Unless required by law and subject to the Parties' respective rules and procedures on data protection and disclosure, the Parties agree that information and documents exchanged between the Parties pursuant to this MoU are confidential and should not be disclosed to third parties without consulting in writing with the concerned Party.

ARTICLE VI – SETTLEMENT OF DISPUTES

- 6.1. Any dispute arising out of, or in connection with, the interpretation or application of any provision of this MoU will be settled amicably through consultations or by such similar means.

ARTICLE VII - ENTRY INTO FORCE, DURATION AND TERMINATION

- 7.1 This MoU shall enter into force on the date of its signature by both Parties.
- 7.2 This MoU shall have a validity term from its entry into force until 31 December 2025. Such term might be extended by written agreement between the Parties.
- 7.3 If at any time a Party considers, at its sole discretion, that the continuation of this MoU is no longer appropriate, that Party may terminate this MoU by giving 3 months' written notice to the other Party. In this case, the Parties shall take any necessary action to ensure that such termination will not be prejudicial to any activity in progress pursuant to this MoU.

ARTICLE VIII – AMENDMENT

- 8.1 No amendment to this MoU shall be effective unless in writing and signed by duly authorized representatives of all Parties. The Parties may amend the provisions herein or enter into supplementary arrangements by mutual agreement between the Parties through an additional written amendment.

ARTICLE IX – REVIEW

- 9.1 Within 2 years of its signature, the Parties intend to review this MoU and consult each other with a view to deciding on possible revisions to the MoU and/or future courses of action.

ARTICLE X – INTERPRETATION

- 10.1 The section headings in this MoU are for convenience only and are not intended, and shall not be construed to alter, limit or enlarge in any way the scope or meaning of the language contained in this MoU.

ARTICLE XI – LANGUAGE

- 11.1 This MoU is signed in three originals in the English language.

ARTICLE XII – ANNEXES

- 12.1 The following Annexes are attached hereto and form an integral part of the MoU:

Annex I: The EIB as the European Union's Climate Bank
Annex II: ECMWF and its the Copernicus Services

ARTICLE XIII – CAPACITY OF SIGNATORY

- 13.1 The person signing this MoU on behalf of each Party hereby states that he or she is an officer of the Party and has requisite legal power and authority to execute this MoU on behalf of the Party.

ARTICLE XIV – NOTICES AND COMMUNICATIONS

- 14.1 Notices and other communications given under this MoU addressed to either Party shall be made to the address as set out above, or to such other address as a Party previously notifies to the other.

IN WITNESS WHEREOF, the Parties have caused this MoU to be executed on their behalf in three (3) originals in the English language, (2) two copies for the EIB, (1) one copy for ECMWF.

Signed for and on behalf of

EUROPEAN INVESTMENT BANK

Signed for and on behalf of

**EUROPEAN CENTRE FOR MEDIUM-
RANGE WEATHER FORECASTS**

Werner Hoyer
President

Dr. Florence Rabier
Director General

Place: _____

Place: _____

Date: _____, 20__

Date: _____, 20__

Annex I. The EIB as the European Union's Climate Bank

The European Investment Bank (EIB) is the lending arm of the European Union. The EIB is the biggest multilateral financial institution in the world and one of the largest providers of climate finance.

The European Union is at the forefront of the global fight against greenhouse gas (GHG) emissions and to adapt to a changing climate. To respond to the urgency of the climate crisis, the EIB has transformed to become the EU's Climate Bank.

The EIB Group Climate Bank Roadmap 2021-2025 guides the EIB's climate ambition. The Roadmap signals the urgency of the climate and environment crisis and represents the EIB's commitment, as the EU's climate bank, to support the European Green Deal, help Europe become the first carbon-neutral continent by 2050 and contribute to the achievement of the UN Sustainable Development Goals.

In 2019, the EIB Board of Directors approved a new set of ambitious targets for climate action and environmental sustainability. Firstly, the EIB committed to increasing its level of support to climate action and environmental sustainability to exceed 50% of its overall lending activity by 2025 and beyond, and thus help to leverage €1 trillion of investment by the EIB Group over the critical decade ahead. Secondly, the EIB committed to ensuring that all of its financing activities are aligned with the Paris Agreement by the end of 2020, including the low-carbon and climate resilience goals of the Paris Agreement. The EIB Climate Bank Roadmap 2021-2025, adopted in November 2020, sets out how the EIB Group intends to meet these commitments.

EIB support to climate change adaptation and resilience

Over the period 2012-2020, the EIB has provided EUR 197 billion of finance supporting over EUR 670 billion of investment in projects that protect the environment, reduce emissions and help countries adapt to the impacts of climate change. The majority of the EIB climate action has contributed to climate mitigation.

The EIB has supported projects that address key adaptation challenges across sectors and regions. In addition to mainstreaming adaptation in all direct lending operations, the EIB has financed transformational changes in adapting infrastructure systems, from undergrounding transmission lines for more climate-resilient energy supply in Northern Europe to increasing the climate resilience of the water supply and wastewater infrastructure destroyed by cyclones in Southeast Africa. EIB investments in climate information technology have enabled better capacity to anticipate and adapt to future climate risk. The EIB also supports investment funds that are investing in innovative ventures tackling adaptation challenges.

In 2015, the EIB identified building greater resilience to climate change as a key pillar of the EIB Climate Strategy. Since then, the EIB has made significant progress in mainstreaming climate change adaptation across its operations, deepening its expertise and developing a Climate Risk Assessment (CRA) system for ensuring climate resilient operations.

In November 2020, the EIB's Board of Directors approved new commitments for climate change adaptation and resilience as part of the EIB Climate Bank Roadmap 2021-2025 (CBR). Under the CBR, the Bank recognised the need to increase substantially its efforts on adaptation and agreed to come forward with a detailed adaptation plan support of the EU's new Adaptation Strategy towards the end of 2021.

In October 2021, the EIB Board of Directors approved the new EIB Adaptation Plan, under which the EIB will significantly increase its support to adaptation in Europe and globally, by supporting smarter, more systemic and faster adaptation, and accelerating international action on adaptation.

Annex II. ECMWF and its Copernicus Services

ECMWF is an independent inter-governmental organisation established in 1975 and supported by 34 states. ECMWF is both a research institute and a 24/7 operational service, producing global numerical weather predictions and other data for its Member and Co-operating States and the broader community. ECMWF has one of the largest supercomputer facilities and meteorological data archives in the world. Other strategic activities include delivering advanced training and assisting the WMO in implementing its programmes.

ECMWF has been entrusted by the European Commission with the implementation of two of the six Copernicus services, the Copernicus Atmosphere Monitoring Service (CAMS) and the Copernicus Climate Change Service (C3S) for the periods 2014-2020 and 2021-2027. ECMWF also contributes to the Copernicus Emergency Management Service (CEMS). In addition, ECMWF has also led several EU research actions in preparation of the future Copernicus anthropogenic CO₂ emissions monitoring and verification support capacity, which will be part of CAMS.

1. *Copernicus Atmosphere Monitoring Service (CAMS)*

CAMS provides consistent and quality-controlled information related to air pollution and health, solar energy, greenhouse gases and climate forcing, everywhere in the world. The service describes the current situation, forecasts the situation a few days ahead, and analyses consistently retrospective data records for recent years. CAMS supports many applications in a variety of domains including health, environmental monitoring, renewable energies, meteorology and climatology.

Under the current Contribution Agreement for the period 2021-2027, CAMS delivers the following operational services:

- Daily production of near-real-time analyses and forecasts of global atmospheric composition;
- Reanalyses providing consistent multi-annual global datasets of atmospheric composition;
- Daily production of near-real-time European air quality analyses and forecasts with a multi-model ensemble system;
- Reanalyses providing consistent annual datasets of European air quality with a frozen model/assimilation system, supporting in particular policy applications;
- Products to support policy users, adding value to “raw” data products in order to deliver information products in a form adapted to policy applications and policy-relevant work;
- Solar and UV radiation products supporting the planning, monitoring, and efficiency improvements of solar energy production and providing quantitative information on UV irradiance for downstream applications related to health and ecosystems;
- Greenhouse gas surface flux inversions for CO₂, CH₄ and N₂O, allowing the monitoring of the evolution in time of these fluxes;
- Climate forcing from aerosols and long-lived (CO₂, CH₄) and shorter-lived (stratospheric and tropospheric ozone) agents;
- Anthropogenic and natural emissions, based on inventory data and modelling, for the global and European domains;
- Observation-based emission estimates of atmospheric pollutants for the global and European domains; and
- Observation-based anthropogenic emission estimates of CO₂ and CH₄ for the global domain and emission hotspots.

CAMS products are delivered via a cloud-based Atmosphere Data Store (ADS).

2. Copernicus Climate Change Service (C3S)

C3S provides authoritative information about the past, present and future climate, as well as tools to enable climate change mitigation and adaptation strategies by policy makers and businesses. It enables users to make effective use of these data, e.g. for monitoring climate change and its impacts, for developing climate services in various industrial sectors, and for policy development and implementation. C3S combines observations of the climate system with the latest science to develop authoritative, quality-assured information about the climate in Europe and worldwide. C3S supports many applications in a variety of domains including water management, energy, agriculture and forestry, health, tourism, infrastructure, insurance, disaster risk reduction, transport and coastal areas.

The portfolio of C3S products under the current Contribution Agreement includes:

- Consistent estimates of multiple Essential Climate Variables (ECVs);
- Global and regional reanalyses (covering a comprehensive Earth system domain: atmosphere, ocean, land, carbon);
- Products based on observations alone (gridded; homogenised station series; reprocessed Climate Data Records);
- A near-real-time climate monitoring facility;
- Multi-model seasonal forecasts; and
- Climate projections at global and regional scales.

The backbone of C3S is a cloud-based Climate Data Store (CDS). The CDS presents users with a single point of access to a catalogue of climate datasets, including in situ and satellite observations, ECV products derived from observations, model-based climate reanalyses, seasonal forecast data products, and climate model simulations including projections. Information about each dataset is presented in a uniform way and data can be selected for download using standard web forms, or they can be accessed in offline applications. Alternatively, users can process, combine and visualize data online using the CDS Toolbox without the need to download data. User documentation, including uncertainty and quality assessments as well as source information, are provided as part of the data service offer and to guarantee traceability.